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ROLE OF PSYCHOLOGY IN ENHANCING SPORTS PERFORMANCE

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Abstract:

The main goals of psychology in the field of sports are to help athletes develop mental skills that contribute to their performance, to enhance the mental well-being of those involved in physical activity, and to help them cope with the challenges and adversity of sport. Sports are important for maintaining mental and physical health, and everyone should play sports. Parents should encourage the new generation of boys and girls to play outdoor sports. Encouraging play is not just about having fun, but also about achieving cultural balance. Play brings new ideas to the workplace, improves family relationships, and increases overall happiness. Mental health is as important as physical health and is the greatest asset that needs to be preserved under any circumstances. A person needs to keep themselves healthy. Playing sports regularly has numerous benefits for mental health and mental well-being. Sports psychology has proven that sports can have a significant positive impact on various aspects of people's lives.

Keywords: *Psychology and enhancing sports performance*

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Introduction:

The World Health Organization says that health is not limited to the absence of disease, but rather a state of complete physical, mental, and social well-being. Family events, social media, friends, and academic stress are some of the challenges. The world has been changing rapidly in the last few decades, which has created many new challenges that are worrying for the mental health of young people. The revolution in information technology has reduced social interaction in society, and relationships have become distant.

In all sports, injuries among players are common and can significantly impact not only athletic performance but also an individual's mental and emotional health. In this context, psychological techniques for sports injuries play a fundamental role in athletes' recovery and well-being, helping them cope with the pain, frustration, fear, and anxiety caused by injuries. These techniques include coping strategies, visualization, mindfulness, cognitive restructuring, and others, aimed at enhancing the athlete's resilience, motivation, and confidence during the rehabilitation process. Therefore, a mental approach to sports injuries is essential for complete and effective recovery, both physically and emotionally.

The importance of sports psychology is increasing in our various journeys today. Sports are a significant part of social, mental, and physical levels. Even from early history, the unique nature of sports and their social and traditional significance has been explained. Sports help us understand the mind and develop qualities on many

different levels. Through participation in sports, qualities such as thinking ability, resilience, strength, empathy, and growth are developed. The experiences in sports struggles provide an opportunity to enhance self-confidence and cultivate a sense of responsibility. Regarding the traditional significance of sports, social conflicts, collective struggles, and a sense of participation have been addressed within their social communities. Support for sports increases relationships and social inclusion within the community. Therefore, sports serve as a common medium for developing relationships and empathy in social conflicts. From the perspective of advancing technology in sports, we gain experience in applying principles within a game. Another important benefit of the experience gained from playing is that it helps in the development of thinking skills. Since games provide opportunities to practice leadership, planning, and decision-making skills, as well as ethics and simple experiments, these experiences can be applied in life. Therefore, both the skills acquired through games and moral education are essential. The experiences gained from games have the potential to improve a person's health, their social and interpersonal relationships, and their mental state. In this way, games serve as an important medium for mental well-being and social development. Finally, games are considered an excellent medium for developing self-confidence, strength, participation, and morality. While playing games, a person gains a powerful experience of their own abilities and develops the capacity to solve knowledge-focused problems. Games are the most important and effective medium for mental, physical, and social development. Struggles, conflicts, and reactions to conflicts in games help us bring stability, strength, and balance to our lives. Regular physical activity has been shown to help prevent and manage noncommunicable diseases such as heart disease, high blood pressure, stroke, diabetes, and many cancers. It also helps maintain a healthy body weight and can improve mental health, quality of life, and well-being. Physical activity is all about movement. Popular ways to stay active include walking, cycling, sports, active recreation, and play, and can be done at any skill level and for everyone to enjoy. Household chores or tasks that require physical exertion are another way to stay physically active.

Yet, current global estimates suggest that 1 in 3 adults and 81% of adolescents do not get enough physical activity. Furthermore, as countries develop economically, changing modes of transport, the increasing use of technology for work and leisure, cultural values, and increasing sedentary habits are leading to an increase in inactivity rates, which can be as high as 70%.

Sedentary habits are periods of low energy expenditure, such as sitting and watching TV. Both sedentary behaviour and inadequate levels of physical activity have negative impacts on health systems, the environment, economic development, community and individual well-being, and quality of life.

Sports psychology is a specialized field that focuses on the mental and emotional aspects of sports and athletic performance. It plays a vital role in helping athletes, coaches, and sports teams achieve their full potential and maintain their well-being. Some of the key reasons for the need for sports psychology are;

Performance Enhancement: Sports psychologists work with athletes to improve their mental toughness, concentration, focus, and confidence. Mental training techniques can help athletes perform at their best under pressure, which can lead to better results.

Managing Stress and Anxiety: Competitive sports can be mentally challenging, which can lead to stress and anxiety. Sports psychology provides tools and strategies to manage and reduce stress, ensuring that athletes can maintain their composure in high-pressure situations.

Goal Setting and Motivation: Sports psychologists help athletes set clear, achievable goals and maintain high levels of motivation. Goal setting can provide direction and purpose, spurring athletes to make the necessary effort and commitment.

Overcoming Performance Declines and Plateaus: Athletes often experience performance declines or plateaus. Sports psychologists can help them identify the root causes and develop strategies to overcome these setbacks.

Dealing with Injuries: Dealing with injuries is a significant challenge for athletes. Sports psychology can aid in the emotional and mental recovery process, helping athletes maintain a positive mindset and stay motivated during rehabilitation periods.

Building Confidence: Confidence is essential for success in sports. Sports psychologists work with athletes to build and maintain confidence, even in the face of setbacks or setbacks.

Team Dynamics: In team sports, it is important to understand and manage the dynamics between teammates. Sports psychologists can help improve communication, cohesion, and teamwork among athletes.

Concentration and Focus: Maintaining concentration and focus is essential for peak performance. Sports psychology techniques can teach athletes how to stay in the present moment and not allow themselves to be distracted.

Coping with pressure: Athletes often face intense pressure, especially during high-level competitions. Sports psychologists help athletes develop strategies to manage and thrive under pressure.

Balancing sports and life: For many athletes, sports are an important part of their lives, but they must balance other commitments, such as education and family. Sports psychology can help athletes maintain a healthy balance and avoid losses.

Career transitions: Athletes often face retirement or career transitions. Sports psychology can help athletes navigate these transitions, helping them find new goals and directions in life.

Developing mental resilience: Building mental resilience is important for coping with setbacks, injuries, and crises. Sports psychologists teach athletes how to bounce back from setbacks and move forward.

Ethical decision-making: Sports psychology can help athletes make moral decisions, especially in situations where they face ethical dilemmas, such as doping or cheating.

Sports psychology is crucial in helping athletes and sports teams optimize their performance, manage the psychological aspects of competition, and maintain overall mental and emotional well-being. It plays a critical role in the overall development and success of athletes at all levels of competition.

Discussion:

Social media is increasing unrealistic expectations and comparisons. Pandemics, wars, political instability, and climate change are also hurting the mental health of young people. They have a wealth of information and resources available literally at their fingertips, making it easier to overcome some challenges. But it also carries

the risk of falling victim to misinformation, misunderstandings, and incitement, which can also harm mental health.

Psychology and enhance their sports performance:

Sports injuries are a common challenge for athletes at all levels of competition. In addition to physical treatment, it is extremely important to take care of athletes' mental health during the recovery process. Here are some psychological strategies that can help strengthen athletes' mental health and improve their sports performance.

Meditation:

Meditation is an effective practice to reduce the stress and anxiety commonly experienced during injury. Encourage athletes to incorporate meditation into their daily routine to maintain calmness and mental clarity during rehabilitation.

Self-Affirmation:

Encourage players to develop positive affirmations to boost their confidence and self-esteem. Phrases like "I am strong and resilient" or "I will overcome this injury and come back stronger than before" can help players maintain a positive mindset during recovery.

Social Support

Support from friends, family, and teammates is important during the recovery process. Ensure that players have a strong support network to cope with the emotional challenges that come with injuries.

Goal Setting

Help players set realistic and achievable recovery goals. This can help them stay focused and motivated during the rehabilitation process, as well as give them a sense of satisfaction as they achieve each goal.

Overview:

Visualization is a powerful tool to help athletes stay motivated during rehabilitation. Encourage athletes to imagine themselves returning to competition, overcoming challenges, and achieving their goals. This can help maintain the positivity and determination necessary for successful recovery.

Mental health is extremely important. What's the use if you are not happy or enthusiastic about the work you are doing? Games are played with a very happy mind, and if the players are not happy, it means that something needs to be done.

Result:

By implementing psychological strategies for sports injuries, athletes can strengthen their mental health and also enhance their sports performance during recovery. Mental health is just as important as physical health, and attention needs to be given to both aspects for the overall well-being of athletes. The main goals of psychology in the field of sports are to help athletes develop mental skills that contribute to their performance, to enhance the mental well-being of those involved in physical activity, and to help them cope with the challenges and adversity of sport.

Encouraging play is not just about having fun, but also about achieving cultural balance. Play brings new ideas to the workplace, improves family relationships, and increases overall happiness. Sports are important for

maintaining mental and physical health, and everyone should play sports. Parents should encourage the new generation of boys and girls to play outdoor sports.

Participation in sports is not only beneficial for physical health, but it also plays an important role in developing mental health. Sports, whether played individually or with a team, can help reduce stress. In a busy and competitive environment, sports can provide a temporary escape from one's worries, establishing psychological balance and peace.

In addition, sports are a means of enhancing self-esteem. When playing, one faces various challenges, which help develop self-confidence and self-esteem. Regular sports activities allow one to experience the joy of achievement and achieve their goals, which empowers one's mental state.

Another important mental health benefit of sports is the strengthening of social relationships. Team sports, in particular, develop group cooperation and communication skills. When people play together, they strengthen their emotional bonds with each other, which generates various levels of social support. It not only builds good friendships but also expands a person's social network, allowing them to improve their emotional health.

Thus, sports are not just a means of entertainment, but also serve as an effective way to manage stress, increase self-esteem, and strengthen social relationships. These benefits of sports for mental health are important for people from all walks of life.

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DEPRESSION AMONG COLLEGIATE STUDENTS IN RELATION TO THEIR FAMILY ENVIRONMENT

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Abstract:

Early in life, individuals develop a wide variety of concepts and attitudes about themselves and their world. Some of these concepts are anchored to reality and form the basis for a healthy personal adjustment. Others deviate from reality and produce vulnerability to possible psychological disorders. People's concepts realistic as well as unrealistic are drawn from experiences, from the attitudes and opinions communicated to by others, and from identifications. Among the concepts that are central in the pathogenesis of depression are people's attitudes toward self, environment and future. People's self-concepts are clusters of attitudes about themselves, some favorable and others unfavorable. When an individual makes negative judgments about himself, this tends to develop negative self-concepts for example "I am weak," "I am inferior," "I am unlovable," and "I cannot do anything right." These negative self-concepts emerge with great force in depression (Beck & Alford, 2009).

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Introduction:

Depression is a condition in which one feels blue or sad. But these feelings are usually for a short period of time. Depression interferes with daily life activities of an individual. It is a common but serious illness (National Institute of Mental Health, 2011).

Adolescents tend to develop closer relationships with peers than parents. Their friendships are found increasingly characterized by higher level of loyalty, intimacy & closeness than preadolescents, and there has been adequate evidence of decreased parental involvement (Laursen & Collins, 1994; Collins & Russell, 1991), increased negative affect and frequent intense parent adolescent conflicts, as source of stress (Montemayor, Eberly & Flannery, 1993; Watson & Pennebaker, 1989).

Family environment is the complex of social and cultural conditions, the combination of external or extrinsic physical conditions that affect and influence the growth and development of the members of family, the most instinctive fundamental social group which includes parents and their children (Ranhotra, 1996),

Method and Material:

The study was further designed to find out the significant predictors of depression from among the independent variables of family environment. For the present study descriptive survey method was employed. In the study stratified random sampling technique was used to choose the sample. For this, investigator sought permission

from the M.V.P. Samaj's Arts, Commerce & Science College Jawahar Road, Tryambkeshwar, Nashik. From the three academic streams namely science, arts and commerce, out of a large number of students studying in various sections only one section was randomly selected. Finally, the sample comprised of 75 collegiate students in which 25 from science stream, 25 from arts stream and 25 from commerce stream. These tools employ distinctive ways of describing and quantifying the data. A psychological tool is an objective and standardized measure of a sample of behaviour (Anastasi, 1961). For the collection of data following tools have been used: Beck Depression Inventory (BDI-II) by Beck, Steer and Brown (1996) and Family Environment Scale (FES) by Vohra (1997). Scoring of all the tests was done as per the instructions given in the respective manuals for a sample of adolescents under the study.

Statistical Techniques:

The analysis of data following statistical technique was used: Correlation analysis was carried out to find the relationship of dependent variable depression with the independent variables of family environment by employing Pearson's product moment method.

Correlation Analysis:

Correlation analysis was carried out to find the relationship between variables i.e. relationship of dependent variable with independent variables. Correlation coefficient between two variables reflects the relatedness or association between the variables (Asthana & Bhushan, 2007).

Table no. 1

Intercorrelation Matrix of the Dependent Variable Depression with Independent Variable of Family Environment

Variable	Dep	Cf	Co	Ex	In	Mo	Or	Re
Dep	1							
Cf	-.071	1						
Co	-.244	.184	1					
Ex	-.225	.138	.421	1				
In	-.193	.164	.334	.383	1			
Mo	.000	.175	.184	.022	.010	1		
Or	-.061	.251	.375	.161	.055	.243	1	
Re	-.078	.177	.270	.227	.207	.147	.332	1

Depression and Family Environment:

The relationship of depression with seven dimensions of family environment i.e. The Competitive framework. Cohesion. Expressiveness, Independence. Moral orientation. Organization and Recreational orientation.

A negative and significant relationship was found between depression and competitive framework dimension ($r = -0.071$, significant at 0.05 level).

Depression was significantly and negatively correlated with cohesion for total sample ($r = -0.244$).

A significant and negative relationship was observed between depression and expressiveness ($r = -0.225$).

Negative and significant relationship emerged between depression and independence dimension of family

environment ($r = -0.193$). This result indicated that the level of depression decreases as independence increases and vice versa.

No significant relationship was found between depression and moral orientation dimension ($r = 0.000$).

No significant relationship was observed between depression and the organization dimension ($r = -0.061$).

Depression was negatively and significantly related with recreational orientation dimension of family environment ($r = -0.078$, significant at 0.05 level of confidence).

Conclusion:

The negative relationship showed that increase in the extent of participation and interest in social, recreational, political, intellectual and cultural activities leads to decrease in depression among students. It also inferred that the individuals who were more interested in recreational activities were less depressed as compared to those who were less interested in these activities. Above results showed that depression was significantly and negatively related with competitive framework, cohesion, expressiveness, independence and recreational orientation dimensions of family environment but it was not significantly related with moral orientation and organization dimensions. Thus, null hypothesis "There is no significant relationship between depression and family environment among adolescents" stands rejected for competitive framework, cohesion, expressiveness, independence and recreational orientation dimensions of family environment and accepted for moral orientation and organization dimensions of family environment.

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BUILDING RESILIENCE THROUGH PSYCHOLOGICAL TRAINING FOR ACADEMIC AND ATHLETIC EXCELLENCE

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Abstract:

In today's rapidly changing and competitive world, both academic and athletic fields demand high levels of mental endurance, adaptability, and motivation. Students and athletes constantly face challenges such as examination stress, performance anxiety, failure, peer comparison, and external expectations. In such circumstances, resilience—the psychological capacity to recover from adversity and maintain effective functioning—becomes a crucial determinant of success and well-being. This research paper explores the effectiveness of psychological training in developing resilience, emphasizing how structured interventions can enhance coping mechanisms, focus, self-efficacy, and emotional regulation.

Drawing insights from cognitive-behavioral theory, self-determination theory, and positive psychology, the paper integrates perspectives from both educational and sports psychology to examine how resilience contributes to holistic performance. It highlights the potential of psychological techniques such as mindfulness, visualization, cognitive restructuring, goal-setting, and emotional regulation as tools for strengthening resilience. The study reveals that consistent psychological training not only boosts performance and motivation but also fosters optimism, self-confidence, and mental health. The findings underscore the need to institutionalize resilience-building programs in academic and athletic settings as part of a comprehensive developmental strategy.

Keywords: Resilience, Psychological Training, Academic Excellence, Athletic Performance, Mindfulness, Motivation, Emotional Regulation, Positive Psychology, Cognitive-Behavioral Theory, Mental Toughness.

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Introduction:

In the 21st century, academic institutions and sports organizations alike have become highly competitive spaces where individuals are continuously evaluated on performance and outcomes. While intelligence, skills, and physical fitness play vital roles, psychological resilience has emerged as the hidden force that determines sustained success. Students face growing academic demands, examinations, parental expectations, and societal pressures that lead to stress, anxiety, and burnout. Similarly, athletes encounter competitive pressure, public scrutiny, injury setbacks, and fluctuating performance levels.

Resilience, in this context, refers to the inner strength to bounce back from difficulties, maintain emotional balance, and adapt to changing circumstances without losing motivation. It enables individuals to face challenges

as opportunities for growth rather than as threats to their well-being. As Masten (2014) defines, resilience is “ordinary magic,” a set of adaptive capacities that allow individuals to thrive even in adverse conditions. This “magic,” however, is not innate—it can be cultivated through psychological training, structured interventions that help individuals understand and manage their mental processes.

Psychological training focuses on enhancing emotional intelligence, self-awareness, goal-setting, focus, and coping mechanisms. In educational contexts, it teaches learners how to regulate stress, stay motivated, and persist through academic difficulties. In athletics, it strengthens mental toughness, competitive focus, and recovery from failure. The fusion of psychology and performance training thus builds individuals who are not only intellectually or physically capable but also emotionally resilient.

Today’s learners and athletes need more than technical skills; they require mental conditioning that equips them to handle pressure constructively. This study argues that by implementing systematic psychological training, institutions can develop resilient individuals who perform better, think positively, and maintain psychological balance throughout their journey of growth and achievement.

Review of Literature:

Resilience has been extensively explored across the fields of psychology, education, and sports sciences. Scholars agree that resilience acts as a buffer against stress, allowing individuals to adapt successfully despite adversity. According to Masten (2014), resilience is not a rare quality but a common human ability that can be nurtured through supportive environments and intentional practices.

In educational research, Martin and Marsh (2006) identified resilience as a significant predictor of academic motivation, engagement, and persistence. Their findings show that resilient students maintain positive attitudes toward learning even under pressure. Similarly, Connor and Davidson (2003) developed the Connor-Davidson Resilience Scale, emphasizing that resilient individuals possess high adaptability, problem-solving ability, and social competence.

In the field of sports psychology, Fletcher and Sarkar (2012) developed a model of psychological resilience based on Olympic athletes. They concluded that resilience arises from a combination of protective factors, including self-confidence, social support, motivation, and focus. Galli and Vealey (2008) also found that adversity in sports can become a source of psychological growth when athletes use adaptive coping strategies. Mindfulness-based interventions, as introduced by Kabat-Zinn (2003), have shown substantial effectiveness in improving emotional regulation and reducing anxiety. Similarly, Beck’s (2011) cognitive-behavioral model emphasizes identifying and restructuring negative thought patterns to build mental flexibility. Seligman (2011), through positive psychology, suggested that cultivating optimism, gratitude, and purpose strengthens resilience by reinforcing positive emotions and psychological well-being.

Overall, literature across domains suggests that resilience is not a fixed trait but a learnable process that can be enhanced through psychological training involving structured reflection, emotional regulation, and cognitive control.

Objectives of the Study:

1. To explore the role of psychological training in developing resilience among students and athletes.
2. To identify specific psychological strategies that enhance academic and athletic performance.
3. To analyze the correlation between resilience, motivation, and achievement.
4. To propose a structured framework for integrating resilience-building programs in educational and sports systems.
5. To encourage educators and coaches to adopt evidence-based psychological interventions for holistic development.

Theoretical Framework:

This study draws on three prominent psychological theories that explain the relationship between mindset, motivation, and resilience:

1. Cognitive-Behavioral Theory (CBT)

Proposed by Aaron Beck (2011), CBT emphasizes that emotions and behaviors are largely influenced by cognitive interpretations of events. By identifying irrational or self-defeating thoughts and replacing them with positive, rational alternatives, individuals can regulate emotions and improve performance. In both academic and athletic contexts, CBT-based interventions such as cognitive restructuring and self-talk training enhance focus, reduce anxiety, and build resilience by strengthening control over thought patterns.

2. Self-Determination Theory (SDT)

Developed by Deci and Ryan (2000), SDT explains human motivation through three psychological needs: autonomy, competence, and relatedness. When these needs are fulfilled, individuals experience intrinsic motivation and psychological resilience. In education, autonomy encourages independent learning, while in sports, it promotes self-motivation and confidence. SDT thus provides a foundation for designing psychological training programs that nurture self-driven, resilient performers.

3. Positive Psychology

Pioneered by Seligman (2011), Positive Psychology focuses on building strengths rather than merely addressing weaknesses. It emphasizes the “PERMA” model—Positive Emotions, Engagement, Relationships, Meaning, and Accomplishment—as pillars of flourishing. When integrated into training, these principles foster optimism, purpose, and mental strength—core elements of resilience in both learning and competition.

Methodology:

1. Research Design

The study employed a mixed-method approach, combining quantitative and qualitative techniques to ensure a comprehensive understanding of the effects of psychological training on resilience.

2. Participants

A sample of 100 university participants (50 athletes and 50 non-athletes) aged between 18–25 years was selected through stratified random sampling. The diversity in participants ensured balanced representation

across academic and athletic populations.

3. Tools and Instruments

1. Resilience Scale (Wagnild & Young, 1993) – to assess baseline and post-training resilience levels.
2. Academic Motivation Scale (Vallerand et al., 1992) – to evaluate intrinsic and extrinsic motivation.
3. Psychological Skills Inventory for Sports (PSIS) (Mahoney et al., 1987) – to measure focus, confidence, and emotional control.

4. Intervention Program

The psychological training program lasted six weeks and was divided into phases:

- Weeks 1–2: Mindfulness and relaxation exercises to improve focus and emotional stability.
- Weeks 3–4: Goal-setting workshops, visualization training, and positive self-talk sessions.
- Weeks 5–6: Cognitive restructuring, stress management, and emotion-regulation strategies.

Participants engaged in 45-minute sessions, three times per week, under the supervision of trained facilitators.

5. Data Analysis:

Quantitative data were analyzed using paired sample t-tests to compare pre- and post-intervention resilience scores. Qualitative data (from reflective journals and focus group interviews) were analyzed using thematic analysis to identify emerging patterns and perceptions.

Results and Discussion:

1. **Quantitative Findings:** Results indicated a statistically significant increase in resilience scores for both students and athletes after psychological training. Athletes exhibited slightly higher improvement, suggesting that combining physical and mental training reinforces resilience more strongly.
2. **Qualitative Insights:** Participants reported noticeable changes in their ability to handle pressure, maintain focus, and recover from setbacks. Many mentioned feeling calmer, more confident, and less anxious during exams or competitions. Mindfulness and self-talk were particularly cited as impactful practices.
3. **Interpretation:** These findings align with Fletcher and Sarkar's (2012) model of resilience, confirming that psychological resources such as optimism, confidence, and focus predict high performance. The intervention enhanced not only participants' coping abilities but also their emotional awareness and interpersonal relationships—both essential for sustained motivation.
4. **Discussion:** Resilience is multidimensional, involving cognitive, emotional, and behavioral aspects. The training improved cognitive flexibility, enabling participants to reframe failures as opportunities for learning. Emotional regulation techniques helped them manage anxiety, while goal-setting fostered a sense of purpose and control. The integration of psychological training within academic and sports contexts, therefore, creates individuals who perform with mental clarity and emotional balance.

Conclusion:

This study concludes that resilience can be systematically developed through structured psychological training. By incorporating evidence-based techniques such as mindfulness, cognitive restructuring, and goal-setting, individuals can enhance their ability to handle stress, remain motivated, and recover from difficulties.

For students, these skills translate into better concentration, academic persistence, and emotional well-being. For athletes, they manifest as increased mental toughness, competitive focus, and consistent performance. Thus, resilience is not merely a psychological attribute but a transformative competency that supports excellence and lifelong success.

Educational and sports institutions should therefore view psychological training not as an optional activity but as a core developmental component necessary for nurturing balanced, high-achieving individuals.

Recommendations:

1. Incorporate resilience-building modules into school and college curricula.
2. Offer regular psychological skills workshops for students, athletes, and educators.
3. Train teachers and coaches in mental health literacy and counseling techniques.
4. Integrate mindfulness and meditation into daily academic or sports routines.
5. Create peer-support groups and mentorship networks to strengthen community resilience.
6. Conduct longitudinal studies to assess the long-term impact of psychological training.
7. Encourage policymakers to recognize psychological education as part of holistic national education and sports policy.

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MIND AND MATTER: A THEORETICAL EXPLORATION OF INTERSECTIONS BETWEEN PHYSICS AND PSYCHOLOGY

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*

Abstract:

The relationship between the physical world and mental processes has long intrigued scholars, from ancient philosophers to modern scientists. This theoretical paper explores the intersections between physics and psychology through a conceptual lens, aiming to bridge the gap between the material and the mental. Drawing from quantum mechanics, systems theory, and cognitive neuroscience, we examine how physical theories influence our understanding of consciousness, cognition, and human behavior. We propose that emerging paradigms in physics such as quantum theory and chaos theory offer useful analogies and potentially deep explanatory models for psychological phenomena. This paper does not present empirical research but instead builds a conceptual synthesis grounded in literature from both fields. Three major themes guide this exploration: (1) the implications of quantum mechanics for consciousness studies, (2) parallels between thermodynamic systems and mental energy, and (3) chaos and complexity theory in modeling cognitive and emotional processes. We argue that interdisciplinary integration, while methodologically challenging, opens new possibilities for understanding the mind-body relationship and developing future frameworks in both scientific and philosophical contexts.

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Introduction:

The age-old question, "What is the relationship between mind and matter?" has long intrigued scientists and philosophers alike. Psychology explores mental experiences such as thoughts, emotions, and behavior, while physics seeks to understand the fundamental laws of the physical universe. Although these disciplines developed separately, modern research shows increasing overlaps between them, pointing to the possibility that mind and matter are not as disconnected as once believed.

Historically, the divide between mind and matter was reinforced by Cartesian dualism, which suggested that the mind (a thinking, non-physical substance) and the body (a physical, extended substance) were entirely distinct. However, contemporary science has begun to question and dissolve this strict division. Advances in neuroscience have revealed that mental functions are rooted in physical processes within the brain [12], and quantum mechanics has shown that the act of observation often linked to consciousness can influence the behavior of physical systems [2, 3].

Quantum theory, in particular, challenges the traditional idea that reality is entirely objective and observer-independent. Experiments like the double-slit experiment demonstrate that particles behave differently when observed, raising the possibility that consciousness might play a fundamental role in determining physical outcomes. This has led some theorists to suggest that the observer, or even consciousness itself, is an integral part of the physical world [3, 4].

At the same time, psychology has begun adopting ideas from physics to explain complex mental phenomena. Concepts from quantum theory are used to model decision-making and mental uncertainty [5, 6], while thermodynamic metaphors help explain motivation, emotional regulation, and cognitive disorganization through ideas like energy flow and entropy [9, 10]. Additionally, systems theory and chaos theory describe the brain and mind as dynamic, non-linear systems that evolve over time through complex feedback loops and self-organization [11, 12].

Psychological processes such as perception and attention are also relevant to physics, especially in observer-dependent theories, where what we measure depends in part on how and whether we observe it [2, 3]. This suggests that the mind doesn't just passively reflect reality it may help shape it.

This paper aims to explore these interdisciplinary connections in depth. By systematically analyzing how theories and metaphors from physics have been applied to psychological thought and how psychological insights may in turn inform physical theories we seek to develop a conceptual framework that links the two fields. Such integration could offer a richer, more complete understanding of both the universe and consciousness [5].

In an age where scientific boundaries are becoming more porous, this kind of interdisciplinary thinking may not only advance our knowledge of reality but also help build a unified view of human experience one where mind and matter are seen not as opposites, but as complementary aspects of the same fundamental reality.

Methodology:

Since this is a conceptual and theoretical study, our approach does not involve experiments or data collection. Instead, we focus on carefully analyzing and connecting existing ideas from two major fields: physics and psychology. This method is known as qualitative analytical synthesis, where the aim is to interpret, compare, and combine concepts to find meaningful patterns and relationships.

Our method draws from hermeneutic philosophy, which emphasizes the importance of understanding meanings within a context, and from systems thinking, which focuses on how different parts of a system interact to form a whole. These perspectives are especially useful when dealing with complex ideas like consciousness, energy, and perception.

The main objective of our methodology is to identify common themes, analogies, and intersections between key theories in physics and those in psychology. Rather than proving a single hypothesis, this study seeks to open a dialogue between disciplines that are usually treated separately.

1. Theoretical Framework

We based our analysis on three major theoretical frameworks, each of which offers unique insights into the mind-matter relationship:

Quantum Theory: This branch of physics explores the behavior of particles at the smallest scales. We are especially interested in how quantum concepts such as the observer effect, wave-particle duality, and uncertainty have been used to explore the role of consciousness, observation, and subjective experience.

Thermodynamics: This theory explains how energy flows and changes in physical systems. In psychology, thermodynamic principles have inspired models of mental energy, emotional regulation, and the cost of cognitive effort. Concepts like entropy and equilibrium are also used metaphorically to understand psychological balance and disorder.

Chaos and Complexity Theory: These theories deal with non-linear systems where small changes can lead to big, unpredictable effects. Cognitive and emotional processes are often non-linear, making these theories valuable for understanding human behavior, decision-making, and mental health conditions that emerge from complex dynamics.

We chose these frameworks because they are widely discussed in both scientific and philosophical circles when addressing the intersection of mind and matter. Each of them provides useful models, metaphors, and questions that can enrich our understanding of consciousness and the physical universe.

2. Literature Selection:

To support our analysis, we reviewed a wide range of scholarly materials, focusing on sources that are reliable, relevant, and rich in theoretical content. Our sources included:

- Peer-reviewed journal articles
- Authoritative books
- Seminal theoretical papers

We used academic databases such as JSTOR, PubMed, ScienceDirect, and Google Scholar to find appropriate material. To ensure credibility, we only included sources with identified authorship and recognized institutional affiliations. We excluded anonymous blogs, commercial websites, and non-reviewed opinion pieces.

Particular emphasis was placed on interdisciplinary literature that bridges both physics and psychology. Notable contributors whose work informed our study include:

David Bohm - for his ideas on wholeness and implicate order

Roger Penrose - for his work on consciousness and quantum theory

Carl Jung - for psychological archetypes with parallels in symbolic systems

Ilya Prigogine - for thermodynamic principles in open systems

Max Tegmark and Stanislas Dehaene - for their modern scientific contributions to consciousness and cognitive science

By drawing on such diverse and respected sources, our goal is to present a thoughtful and well-rounded exploration of how physics and psychology can inform each other in meaningful ways.

Quantum Mechanics and the Problem of Consciousness:

Quantum mechanics, the science of the very small, has revolutionized our understanding of the physical world. Its implications, however, extend far beyond the subatomic realm, challenging our perceptions of reality, determinism, and the role of the observer. One of the most controversial and intriguing applications of quantum theory lies in the domain of consciousness.

1. Observer Effect and Consciousness

In classical physics, measurement is a passive process. In quantum mechanics, the act of observation fundamentally affects the outcome phenomenon known as the observer effect [2]. The famous double-slit experiment demonstrates that particles behave as waves until observed, at which point they collapse into a definite state. This has led some theorists to argue that consciousness plays a central role in shaping physical reality [3].

Eminent physicists like Eugene Wigner and John von Neumann proposed that human consciousness could be the “collapsing” factor in quantum superpositions. Though speculative, such ideas open the door to considering consciousness not merely as a by-product of brain function but as a fundamental component of the universe [4].

2. Quantum Cognition

Quantum models have also been proposed in cognitive science to explain anomalies in decision-making and reasoning that classical probability cannot account for. Quantum cognition does not claim that the brain is a quantum computer, but rather uses the mathematical formalism of quantum theory to model cognitive phenomena such as uncertainty, context dependence, and entanglement of ideas [5].

For example, when individuals face ambiguous questions, their responses often defy classical logic but align with quantum probability models. These models account for phenomena such as order effects (where the sequence of questions affects the answers) and superposition states in belief systems [6].

3. Criticisms and Limitations

Despite its elegance, the quantum consciousness hypothesis is criticized for overextending quantum theory beyond its empirical domain. Critics argue that invoking quantum mechanics to explain consciousness may reflect a category error, where metaphors are mistaken for mechanisms [7]. However, even as a metaphor, quantum theory can illuminate the fluid, indeterminate, and non-linear qualities of conscious experience.

Table 1: Classical vs. Quantum Models of Cognition

Feature	Classical Model	Quantum Model
Logic	Boolean (True/False)	Probabilistic (Multiple Possibilities)
Decision-making	Deterministic	Contextual / Indeterminate
Information Processing	Linear and Step-by-step	Non-linear / Interactive
Mental Representation	Fixed and Defined	Superposition (Blended States)

Thermodynamics and Psychological Energy:

The concept of energy is central to both physics and psychology. In physics, thermodynamics governs the flow and transformation of energy in systems. In psychology, particularly in psychodynamic theory, energy metaphors are used to describe mental processes such as motivation, tension, and emotion.

1. Entropy and Mental Disorder

Entropy, the measure of disorder in a system, has compelling analogies in psychological states. High entropy in thermodynamics corresponds to randomness or chaos. Similarly, in mental health, states of high psychological entropy are associated with anxiety, confusion, and cognitive disintegration [8]. Jungian psychology also discusses psychic energy and its dissipation in neurotic or fragmented states [9].

The process of psychotherapy can be seen as entropy-reducing, creating coherence and integration within the psyche. Cognitive behavioral therapy (CBT), for example, helps patients restructure disordered thought patterns, analogous to reorganizing a disordered system into a more stable configuration.

2. Energy Conservation and Motivation

Freud’s economic model of the mind proposed that psychic energy is conserved and can be redirected or repressed [10]. This aligns metaphorically with the first law of thermodynamics conservation of energy. Though not literally measurable in joules, psychological energy behaves in ways reminiscent of physical systems: it flows, gets blocked, transforms, and seeks equilibrium.

3. Homeostasis and Feedback Loops

Thermodynamic systems often operate via feedback mechanisms to maintain homeostasis. This concept is deeply embedded in psychological models, particularly in cybernetic and behavioral theories. The human organism seeks to maintain emotional and cognitive equilibrium, adapting behaviors and thoughts to achieve balance [11].



Diagram 1: Thermodynamic Feedback Loop and Psychological Homeostasis

Such parallels suggest that while the ‘energy’ in physics and psychology may differ in nature, their structural dynamics exhibit similarities, supporting the utility of thermodynamic metaphors in psychological theory.

Chaos, Complexity, and the Non-linear Mind:

In recent decades, chaos theory and complexity science have transformed our understanding of systems that are dynamic, adaptive, and sensitive to initial conditions. These principles resonate strongly with contemporary models of the mind.

1. The Brain as a Complex Adaptive System

The human brain is arguably the most complex known system in the universe. It exhibits characteristics of non-linearity, self-organization, and emergent behavior hallmarks of complex systems [12]. Neural networks adapt over time, reorganize in response to stimuli, and display properties not evident from the behavior of

individual neurons.

Psychological processes such as learning, memory, and creativity can be modeled as emergent phenomena arising from dynamic interactions among sub-systems. This view is supported by connectionist models and dynamic systems theory in developmental psychology [13].

2. Chaos and Emotional Regulation

Emotions are often viewed as erratic or irrational, yet chaos theory provides a framework for understanding such non-linear patterns. Small changes in experience or perception can lead to disproportionate emotional responses similar to the “butterfly effect” in chaotic systems [14].

Moreover, personality development and psychopathology can be viewed as bifurcation points where the system (mind) shifts from one pattern of behavior to another, sometimes radically.

3. Fractals and Cognitive Patterns

Fractal geometry, a by-product of chaos theory, has been used to model patterns in brain activity and behavior. EEG data often display fractal characteristics, suggesting self-similarity across different temporal and spatial scales [15].

Such findings encourage a view of cognition as fractal in nature recursive, layered, and dynamically nested. This contrasts with linear models of information processing and offers a more holistic and realistic framework for understanding human thought.

Future Directions:

Interdisciplinary exploration between physics and psychology is still in its early stages but holds great promise. Future research should aim to:

- Develop formal mathematical models that integrate psychological processes with physical principles
- Explore empirical validation of quantum cognitive models using neuroimaging and behavioral data
- Investigate the neural correlates of entropy and complexity in mental disorders
- Foster collaborative platforms where physicists and psychologists co-develop theories

Additionally, advances in artificial intelligence, neuroscience, and quantum computing may offer tools to simulate and test these interdisciplinary theories in ways previously unimaginable.

Conclusion:

Exploring the connections between physics and psychology opens up exciting possibilities for new ways of thinking. Even though these fields have traditionally dealt with different aspects of reality; physics with matter and energy, psychology with the mind and behavior, they show clear similarities in structure, metaphors, and possibly even their underlying nature. Quantum mechanics challenges the idea that reality exists independently of observation. Thermodynamics helps us understand mental processes like motivation and emotional regulation through the lens of energy flow and balance. Chaos and complexity theory reflect how unpredictable and intricate human thoughts and emotions can be. While it's important not to stretch scientific concepts beyond their appropriate use, combining insights from both physics and psychology can lead to a deeper, more complete understanding of the mind and the universe. As science continues to evolve in the 21st century, this kind of

interdisciplinary thinking may become essential for solving the deeper questions about consciousness, cognition, and the nature of reality itself.

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EXPLORING THE ROLE OF ARTIFICIAL INTELLIGENCE IN MENTAL HEALTH CARE

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Abstract:

Psychology has always been fascinated by the human mind, which is incredibly complex and elusive. However, its depths are still mostly unknown, and the scant information and arbitrary interpretations impede our comprehension. Mental health is an essential component of the health and well-being of a person and community, and it is critical for the individual, society, and socio-economic development of any country. Mental healthcare is currently in the health sector transformation era, with emerging technologies such as artificial intelligence (AI) reshaping the screening, diagnosis, and treatment modalities of psychiatric illnesses.

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Aim:

This research article tries to explore the many applications of AI in psychology and how it can transform our basic knowledge of the human psyche. It is also aimed at discussing the current landscape and the role of AI in mental healthcare, including screening, diagnosis, and treatment. Furthermore, this review attempted to highlight the key challenges, limitations, and prospects of AI in providing mental healthcare based on existing works of literature.

Today, artificial intelligence (AI) is a potent force that promises to shed light on these hidden intricacies. Massive amounts of data, such as speech patterns, facial expressions, and even physiological markers, may be analyzed with remarkable objectivity and precision by AI-powered algorithms. For those who are unable to access traditional treatment due to social or geographic constraints, AI-powered chatbots, and virtual therapists can provide round-the-clock support and guidance

Methodology:

The methodology comprised a comprehensive review of the literature on artificial intelligence applications in psychology, which includes books, reputable blogs, journals, newspaper articles, and articles. The literature search for this narrative review was obtained from PubMed, Google Scholar, Web of Science, and articles published in the last five years. There is no denying its capacity to completely transform medical diagnosis, treatment, and our comprehension of the human mind. This research article tries to explore the many applications of AI in psychology and how it can transform our basic knowledge of the human psyche.

Conclusion:

The above review article after exploring various aspects of ai and mental health care reached following some findings .The most promising aspect of AI in psychology is its potential to illuminate the psyche’s hidden depths. Self-reported narratives or therapist intuition are no longer sufficient. AI, with its voracious thirst for data, can sift through massive amounts of speech patterns, facial expressions, and physiological markers to create a hyper-realistic representation of a person’s mental state. Finally, the integration of AI into psychology marks a watershed point. Its ability to transform diagnosis, treatment, and comprehension of the human mind is evident. However, leveraging this potential responsibly, with an uncompromising commitment to ethics and human connection, is crucial to ensuring that AI becomes not a substitute, but a revolutionary force in creating the future of mental health treatment.

Overview:

Today, artificial intelligence (AI) is a potent force that promises to shed light on these hidden intricacies. Massive amounts of data, such as speech patterns, facial expressions, and even physiological markers, may be analyzed with remarkable objectivity and precision by AI-powered algorithms. For those who are unable to access traditional treatment due to social or geographic constraints, AI-powered chatbots, and virtual therapists can provide round-the-clock support and guidance. The AI models, which mimic human perception, learning, memory, and decision making, provide important insights into the complex mechanisms underlying the brain. This in-depth knowledge is essential for creating interventions and preventative strategies that are more successful for a wide range of mental health issues. To ensure appropriate and ethical deployment, it is imperative to strike a balance between the advantages of artificial intelligence and the indispensable warmth of human connection. AI plays a significant role in mental health by improving early detection, personalizing treatment, and providing accessible support through tools like chatbots and predictive analytics. These technologies analyze data from various sources to identify patterns, support clinical decision-making, automate administrative tasks, and offer continuous, on-demand assistance. While AI offers powerful benefits, psychological surveys highlight key concerns regarding data privacy, ethical considerations, and the psychological impact of continuous monitoring. The AI models, which mimic human perception, learning, memory, and decision making, provide important insights into the complex mechanisms underlying the brain. This in-depth knowledge is essential for creating interventions and preventative strategies that are more successful for a wide range of mental health issues. To ensure appropriate and ethical deployment, it is imperative to strike a balance between the advantages of artificial intelligence and the indispensable warmth of human connection.

In this section the main purpose of this review study is aimed at discussing the current landscape and the role of AI in mental healthcare, including screening, diagnosis, and treatment. Furthermore, this review attempted to highlight the key challenges, limitations, and prospects of AI in providing mental healthcare based on existing works of literature.

The main key aspect regarding the role of AI in mental health care considered as following

➤ **Diagnosis and Assessment**

Instruments based on artificial intelligence increase the accuracy and objectivity of diagnosing mental health disorders including depression, anxiety, and autism by analyzing large volumes of data, such as speech patterns, facial expressions, and physiological markers. Artificial intelligence (AI) algorithms can customize psychological exams to each person's needs, changing the questions and degree of difficulty in real time to produce assessments that are more accurate and productive.

➤ **AI-powered tools**

AI-powered tools are transforming mental health diagnosis by expertly analyzing varied datasets. These tools process massive volumes of data, including speech patterns, facial expressions, and physiological markers, to improve accuracy and impartiality in diagnosing illnesses including depression, anxiety, and autism (Dialani, 2020). These tools use advanced machine learning algorithms to detect small differences in voice, including tonal changes and language clues indicative of mental health disorders (Sutton, 2024). Facial expression analysis detects emotional indications, providing a nonverbal layer of information about a person's mental health. Furthermore, physiological markers such as heart rate and skin conductance are examined for patterns associated with various mental health disorders (Moreno, 2020). This multimodal approach promotes a more standardized and trustworthy evaluation procedure by increasing diagnostic precision and lowering reliance on arbitrary human interpretation. The application of AI to mental health diagnostics represents a substantial development in the field's capacity to deliver prompt and accurate mental health care, with potential benefits for early intervention and individualized treatment plans (Banafa, 2023).

➤ **Personalized Assessments**

With the ability to dynamically adapt tests to individual needs, AI algorithms have ushered in a new era of individualized psychological examinations. The algorithms can modify the questions' complexity and format in real time in response to user responses, resulting in an evaluation that is both more precise and effective. To meet each person's specific cognitive profile, this dynamic customization makes for a more meaningful and interesting testing experience (Moreno, 2020). As the test proceeds, the algorithms examine the replies in real-time, looking for trends and subtleties. Test-taker abilities are more accurately measured when difficulty levels are adjusted, giving a more nuanced picture of the test-taker's cognitive strengths and weaknesses (Fulmer et al., 2018). This customized strategy reduces the possibility of weariness or disengagement while also optimizing the testing procedure and improving the overall dependability of the outcomes (Rue, 2023). Psychologists can better understand a person's cognitive functioning as a result, which enables them to create treatment plans and therapies that are more specifically tailored. An important development is the use of AI in customized tests, which brings psychological assessments closer to the complex and distinctive features of each person's cognitive environment.

➤ **Treatment and Therapy**

Bots and virtual therapists provide easily accessible and reasonably priced mental health services, particularly to those living in isolated places or experiencing societal stigma. These AI-driven solutions can offer individualized coping strategies, emotional support, and cognitive behavioural therapy (CBT). AI can monitor patient-therapist interactions, spotting trends and making intervention recommendations. It can also provide patients with tailored feedback to monitor their progress and make the most out of their treatment regimens.

➤ **Virtual Therapists and Chatbots**

AI-powered chatbots and virtual therapists are revolutionizing mental health care, especially for people facing social stigma or living in remote locations. These resources remove obstacles to mental healthcare by providing easily available and reasonably priced support. By offering cognitive behavioral therapy (CBT), they assist clients in understanding and changing harmful thought patterns by guiding them through evidence-based therapies (Sinha, 2023). People receive non-judgmental emotional support, which fosters a safe environment in which they can express their emotions. These virtual resources' round-the clock accessibility guarantees prompt assistance, meeting urgent needs (Fulmer et al., 2018). AI algorithms make it possible to customize interventions, adjusting coping mechanisms to meet the unique requirements specific to each user. Virtual therapists play a significant role in reducing social stigma by enabling users to quietly seek care, which promotes a broader acceptance of mental health support. These AI-powered solutions greatly enhance mental health resources, even if they cannot completely replace human therapists. They provide a scalable solution to address the increasing demand for easily available and customized mental health treatment.

➤ **Augmenting Traditional Therapy**

By examining interactions between therapists and patients, AI is improving traditional therapy by providing insightful analysis and improving treatment outcomes. AI can recognize patterns in speech through complex algorithms, assisting therapists in identifying subtleties that might be essential for treatment (Sijia et al., 2022). AI acts as a helpful tool by making intervention suggestions based on these patterns, giving therapists new ideas and possible approaches. Additionally, AI helps patients receive tailored feedback so they may monitor their development and get an understanding of their mental health in between sessions (Moreno, 2020). Patients are encouraged to take a more active part in their mental health journeys because of this real-time feedback (Kumar, 2023). The use of AI in treatment enhances the therapeutic process by increasing its dynamic and adaptability to the demands of each patient. AI's analytical skills empower both patients and therapists, optimizing treatment programmes and encouraging a collaborative approach to mental health care—all while acknowledging the value of the human connection in therapy.

➤ **Understanding the Human Mind**

Artificial intelligence can build complex models of human cognition that mimic our ability to see, learn, remember, and make judgments. This aids in the advancement of knowledge about the intricate relationships between the brain and behavior systems and can examine massive databases, find trends, and forecast how

people or groups will behave in different situations. Social policy, education, and mental health therapies can all benefit from this.

➤ **Modelling Cognitive Processes**

By developing sophisticated models that mimic the intricacies of perception, learning, memory, and decision-making, artificial intelligence (AI) is significantly contributing to our understanding of human cognition. Thanks to the advanced algorithms behind these models, researchers may now investigate and test cognitive phenomena virtually in a laboratory setting. AI helps us understand complex neural networks and patterns that drive human behavior by simulating the brain's information processing system (Sutton, 2024). In ways that might not be possible with more conventional techniques, these simulations allow researchers to test theories and monitor cognitive processes. A more thorough investigation of cognitive processes is also made possible by AI, which also makes it easier to integrate enormous volumes of data (Global, 2023). As theories about cognition advance, discoveries in the domains of neuroscience, psychology, and artificial intelligence itself are made possible by this modelling method, which also leads to a deeper understanding of mental processes. We are learning more about the mind than ever before thanks to the combination of AI and cognitive modelling, which is also providing useful tools for deciphering the workings of human cognition.

➤ **Predicting Behavior**

Through the analysis of large datasets, AI algorithms are particularly good at forecasting both individual and collective behavior. These algorithms can identify patterns that can guide interventions in a variety of fields, including social policy, education, and mental health. Predictive analytics in mental health can anticipate possible problems by identifying early warning indicators in user behaviour, allowing for prompt interventions and individualized care (Global, 2023). Artificial Intelligence (AI) in education can predict student performance and pinpoint areas for growth, enabling focused interventions to improve learning outcomes. Furthermore, AI's predictive powers help in social policy by predicting societal trends and guiding evidence-based decisions (Rue, 2023). Artificial intelligence (AI) helps take a more proactive and strategic approach to tackling difficulties by identifying trends connected to mental health, education, and behaviour in massive databases. To guarantee the appropriate and equitable application of predictive AI, however, ethical issues and privacy protections must be taken into account to strike a balance between the advantages of informed interventions and the defense of people's rights and welfare.

➤ **Research and Development**

By examining an abundance of clinical and genetic data, artificial intelligence (AI) can expedite the process of finding new drugs for mental health disorders by identifying possible targets and forecasting their effectiveness. With AI, treatment plans can be customized depending on a patient's genetic composition, brain activity, and reaction to various medications. This could open the door for personalized therapy in the field of mental healthcare.

➤ **Drug Discovery**

AI is transforming the process of finding new drugs for mental health disorders by quickly analyzing large-scale clinical and genetic databases. AI algorithms can sort through enormous volumes of data, discover possible therapeutic targets, and forecast their success with a speed and precision never seen before in medicine. AI is particularly good at picking up tiny patterns and connections in genetic and clinical data, which is particularly useful in the context of mental health since the underlying biological mechanisms are frequently complex (Gado et al., 2021). This expedites the process of identifying new drug candidates, which may result in the development of more potent treatments for diseases like schizophrenia, anxiety, and depression. The data-driven methodology of AI helps comprehend the intricate interactions between genetic variables and biomarkers, offering important insights for medication creation. Artificial Intelligence (AI) facilitates the translation of scientific discoveries into practical treatment solutions for mental health issues by speeding up the early phases of drug discovery. This makes the process more efficient and economical. The combination of artificial intelligence (AI) with conventional research techniques has great potential to advance pharmaceutical interventions in the field of mental health.

➤ **Personalized Medicine**

AI has the potential to completely transform mental healthcare by introducing the concept of personalized medicine and customizing treatment regimens to each patient's specific needs. AI may detect genetic markers linked to mental health disorders by examining a person's unique genetic composition (Arbelaez, 2022). This allows for more accurate diagnosis and focused therapy. Furthermore, AI is capable of analyzing brain activity using methods such as neuroimaging, providing information about how a person's brain reacts to various stimuli and treatments. Customizing treatment plans is made possible by this data driven approach, which maximizes the chances of success (Sijia et al., 2022) Furthermore, AI is quite good at handling big datasets that include a variety of elements like treatment history, lifestyle, and environmental effects. This thorough analysis improves knowledge of a person's overall health profile. AI maximizes therapy efficacy by continuously learning and adapting, ensuring that treatment regimens change based on real-time input. By lowering the possibility of side effects and enhancing overall patient outcomes, the incorporation of AI in personalized medicine encourages a move away from one-size-fits-all strategies and towards customized therapies. With more efficient and individualized treatments available for people with a variety of mental health issues, this revolutionary method has enormous potential to improve mental healthcare.

➤ **Early Detection**

AI apps play an important role in the early detection of mental health concerns by using powerful algorithms to identify tiny markers in user behaviour, voice patterns, and other data. Machine learning models can analyze large datasets to detect patterns related to probable mental health issues, allowing for early intervention (Noman, 2023). Early indicators may include changes in communication style, frequency of social engagements, or sleep patterns. AI can continuously monitor and analyze these patterns, providing a proactive method for detecting indicators of discomfort or developing mental health issues (Bonnefon et al.,

2023). AI's real-time nature enables instant response and help, potentially averting the progression of mental health concerns. Furthermore, the non-intrusive nature of data collecting respects privacy while still yielding insightful information when done properly and with user agreement. AI-assisted early identification improves outcomes for people with mental health issues by facilitating more focused and personalized mental health care in addition to enabling faster intervention.

➤ **Predictive Modelling**

Through the analysis of numerous parameters, AI's predictive modelling capabilities play a crucial role in determining the probability of specific mental health outcomes. To find patterns and connections that help forecast mental health disorders, machine learning algorithms can analyze a variety of datasets (Sinha, 2023). Artificial intelligence (AI) models can provide insights into an individual's vulnerability to particular mental health outcomes by taking into account variables including lifestyle, genetic markers, and environmental effects. The application of preventative actions and resource allocation benefit greatly from this predicted data (Bonnefon et al., 2023). Before mental health problems worsen, it enables the identification of high-risk groups or individuals, allowing for focused therapy.

AI-driven forecasts can guide resources to places where they are most needed, which can help public health initiatives. Predictive modelling also helps with customized intervention strategy formulation, which optimizes the distribution of resources and services for mental health. Using AI in predictive modelling, governments, and medical practitioners can take a proactive approach to mental health, promoting early intervention and enhanced general well-being.

➤ **Accessibility and Telehealth**

Artificial intelligence (AI)-driven technologies can improve teletherapy services by offering more resources and assistance to people who might not have easy access to conventional in-person therapy. To support psychologists in their work, artificial intelligence (AI)-driven language processing systems can help with text-based data analysis and interpretation, including transcriptions of treatment sessions.

➤ **Teletherapy**

Artificial intelligence (AI)-driven technologies are transforming teletherapy services and providing priceless assistance to those who have restricted access to conventional inperson therapy. AI-powered chatbots and virtual assistants provide ongoing support and engagement, extending the therapeutic advantages beyond scheduled sessions (Espejo et al., 2023). By providing quick assistance, tailored interventions, and real-time tracking of user-generated data, these solutions improve accessibility (Noman, 2023). The ability to comprehend language helps therapists communicate more nuancedly and gain a deeper understanding of their client's emotions in virtual sessions. AI also makes it possible to analyze physiological and behavioural data remotely, enabling early intervention based on objective parameters (Irshad et al., 2022). With capabilities like real-time transcription and language translation, AI integration assures inclusivity and removes obstacles for people with disabilities. AI-powered solutions revolutionize the field of easily accessible mental

healthcare by fusing technology with teletherapy to improve the overall reach, responsiveness, and personalization of mental health treatment.

➤ **Language Processing**

In psychology, artificial intelligence (AI)-powered language processing technologies are extremely useful, especially when it comes to the analysis and interpretation of text based data, such as therapy session transcriptions (Irshad et al., 2022). These technologies use natural language processing (NLP) algorithms to analyze textual content and identify sentiments, patterns, and contextual signals. Psychologists can learn more about patients' ideas, feelings, and development over time by gleaning insightful information from treatment session transcripts (Gado et al., 2021). NLP technologies help therapists customize interventions to each patient's needs by helping to detect linguistic patterns, recurrent themes, and shifts in sentiment. With the use of this technology, psychologists may evaluate large amounts of text data more quickly and effectively, which helps them spot important trends and difficulties in their caseload (Kumar, 2023). Language processing techniques also aid in the arrangement and classification of textual material, which makes data-driven decision-making easier and improves the general efficacy of therapeutic interventions. The potential of AI-driven language processing to improve clinical procedures and maximise the analysis of rich textual data in the context of mental health treatment is highlighted by its incorporation into psychology.

● **Benefits of AI in mental health:**

Early detection and risk prediction: AI can analyze online activity, smartphone usage, speech, and behavioral patterns to identify early warning signs of mental health conditions, which allows for timely intervention.

Personalized treatment: By analyzing patient history, genetics, and other data, AI can help tailor treatment plans and medication dosages, potentially improving outcomes.

Increased accessibility: AI-powered tools, such as chatbots, can provide 24/7 support, self-help resources, and cognitive behavioral therapy, which is especially valuable for those in remote areas or with limited access to traditional services.

Clinical support: AI can support clinicians by summarizing health records, automating administrative tasks, and providing data-driven insights to aid in diagnosis and treatment decisions.

Monitoring and relapse prevention: AI systems can continuously monitor patients for early signs of relapse in chronic conditions like mood disorders and schizophrenia, enabling proactive intervention.

● **Few Psychological considerations and challenges:**

Privacy and ethics: The use of AI involves analyzing sensitive personal data, raising concerns about data privacy and the ethical implications of how this information is used.

Continuous monitoring: AI's ability to continuously monitor behavior can have a negative psychological impact on individuals, and the ethical considerations of this are often overlooked.

Dehumanization of care: There is a risk that the increasing use of technology could lead to a less human-centered approach to care, even though human connection remains vital.

Bias and accuracy: AI models can perpetuate biases present in their training data, and some models may be difficult to interpret, which can impact their accuracy and trustworthiness.

Implementation challenges: Integrating AI into existing mental health systems requires careful planning, effective frameworks, and ongoing training for professionals to understand its limitations and capabilities.

Conclusion:

The most promising aspect of AI in psychology is its potential to illuminate the psyche's hidden depths. Self-reported narratives or therapist intuition are no longer sufficient. AI, with its voracious thirst for data, can sift through massive amounts of speech patterns, facial expressions, and physiological markers to create a hyper-realistic representation of a person's mental state. Consider finding the tremors of nervousness concealed beneath a seemingly serene exterior, or detecting the tell-tale signs of despair embedded in otherwise benign words. This unprecedented precision, analogous to decoding a symphony from the faintest whispers of instruments, offers earlier diagnosis, potentially preventing mental health catastrophes before they emerge. The human mind, a maze of swirling thoughts, emotions, and impulses, has intrigued us for millennia. We've tried to fathom its depths through introspection, philosophy, and science, but its complexities remain hidden, tantalizingly out of reach. However, on the horizon, a tremendous force appears, promising to unveil the psyche's hidden pathways: artificial intelligence (AI). Finally, the integration of AI into psychology marks a watershed point. Its ability to transform diagnosis, treatment, and comprehension of the human mind is evident. However, leveraging this potential responsibly, with an uncompromising commitment to ethics and human connection, is crucial to ensuring that AI becomes not a substitute, but a revolutionary force in creating the future of mental health treatment. In summary, AI has the potential to revolutionize mental healthcare by making it more accessible, personalized, and proactive. However, its successful and ethical integration depends on addressing the significant psychological and ethical challenges it presents, particularly concerning data privacy and the potential impact on the patient-provider relationship.

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THE ACADEMIC SELF CONCEPT OF SCHOOL GOING BHIL TRIBAL AND OTHER NON TRIBAL STUDENTS IN AHMEDNAGAR DISTRICT-A COMPARITIVE STUDY

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Abstract:

India is the seventh biggest country in the world geographically and second largest populated country in the world and it represent all races which found in the whole world. Followed by the Africa India holds second rank in respect of verity of tribal groups. The tribal are the integrated part of India but after seventy five years of independence they are lagging behind the rest groups in comparison. The many study has been conducted by their anthropological, cultural and social aspect but psychological viewpoint were neglected by the researcher. The self-concepts consists all ideas about oneself which direct person to achieve his or her life goal .The academic self-concept tis also an important part of educational achievement. The title of research paper is “The academic self-concept of school going Bhil tribal and other non-tribal students in Ahmednagar district-A comparative study.” The main objective of this study is to study the difference and comparative gap in tribal and non-tribal student about their academic self-concept. The present study has been conducted on both boys and girls, (N-120) 60 Bhils tribal and 60 non-tribal school going students of seventh class in the Ahmednagar district were taken as sample. For analysis purpose descriptive statistics and independent sample “t” test were used for conclusion and SPSS were used for analysis. It is found that both tribal Bhils boys and girls have low academic self-concept than other non-tribal boys and girls.

Keywords-tribal students, Bhils tribal students, Academic self-concept, Gender study, Ahmednagar district.

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Is there any difference between tribal and non-tribal students about their Academic self-concept?

India is the popular country in the world about its diversity as it has a geographical imparity it also has social complexity. The Indian society is complex mixture of different social, cultural and racial groups and its way to live life. Tribal groups in India also an important and vital part of Indian society. Many sociologists, anthropologist have given different definitions of tribe and tribal people. Tribal people have different policies and rites to protect their unique culture in an independent India and its constitution which provides special power to these indigenious groups. Traditionally these group of people called as Adivasi means original inhabitant of India. Tribal education is a challenging task since pre and post-independence. According to (2011 census) there is almost a fourteen percent gap between the literacy rates of the STs and the rest of the population. Nearly 50% of the children from this social group drop out while transitioning from primary to secondary grades (based on the educational status recorded in the same census). Nearly 80% of them stop education when they are in grade

X in other words, only 20% appear for the high-school examination. Addressing the educational gap between the STs and the mainstream society is important for improving human development indicators of the country. There are more than six hundred forty-five distinct tribes in all over parts of an India Present article basically focuses on tribal student in Ahmednagar district of Maharashtra state in India. In the state of Maharashtra nearby forty-seven tribes' lives.

List of tribes in Maharashtra state.

1. Andh
2. Baiga
3. Barda
4. Bavacha, Bamcha
5. Bhaina
6. Bharia Bhumia, Bhuinhar Bhumia, Pando
7. Bhattra
8. Bhil, Bhil Garasia, Dholi Bhil, Dungri Bhil, Dungri Garasia, Mewasi Bhil, Rawal Bhil, Tadvi Bhil, Bhagalia, Bhilala, Pawra, Vasava, Vasave
9. Bhunjia
10. Binjhwar
11. Birhul, Birhor
12. Omitted
13. Dhanka, Tadvi, Tetaria, Valvi
14. Dhanwar
15. Dhodia
16. Dubla, Talavia, Halpati
17. Gamit, Gamta, Gavit, Mavchi, Padvi
18. Gond, Rajgond, Arakh, Arrakh, Agaria, Asur, Badi Maria, Bada Maria, Bhatola, Bhimma, Bhuta, Koilabhuta, Koilabhuti, Bhar, Bisonhorn Maria, Chota Maria, Dandami Maria, Dhuru, Dhurwa, Dhoba, Dhulia, Dorla, Gaiki, Gatta, Gatti, Gaita, Gond Gowari, Hill Maria, Kandra, Kalanga, Khatola, Koitar, Koya, Khirwar, Khirwara, Kucha Maria, Kuchaki Maria, Madia, Maria, Mana, Mannewar, Moghya, Mogia, Monghya, Mudia, Muria, Nagarchi, Naikpod, Nagwanshi, Ojha, Raj, Sonjhari Jhareka, Thatia, Thotya, Wade Maria, Vade Maria.
19. Halba, Halbi
20. Kamar
21. Kathodi, Katkari, Dhor Kathodi, Dhor Kathkari, Son Kathodi, Son Katkari
22. Kawar, Kanwar, Kaur, Cherwa, Rathia, Tanwar, Chattri
23. Khairwar
24. Kharia

25. Kokna, Kokni, Kukna
 26. Kol
 27. Kolam, Mannervarlu
 28. Koli Dhor, Tokre Koli, Kolcha, Kolgha
 29. Koli Mahadev, Dongar Koli
 30. Koli Malhar
 31. Kondh, Khond, Kandh
 32. Korku, Bopchi, Mouasi, Nihal, Nahul, Bondhi, Bondeya
 33. Koya, Bhine Koya, Rajkoya
 34. Nagesia, Nagasia
 35. Naikda, Nayaka, Cholivala Nayaka, Kapadia Nayaka, Mota Nayaka, Nana Nayaka
 36. Oraon, Dhangad
 37. Pardhan, Pathari, Saroti
 38. Pardhi, Advichincher, Phans Pardhi, Phanse Pardhi, Langoli Pardhi, Bahelia, Bahellia, Chita Pardhi, Shikari, Takankar, Takia
 39. Parja
 40. Patelia
 41. Pomla
 42. Rathawa
 43. Sawar, Sawara
 44. Thakur, Thakar, Ka Thakur, Ka Thakar, Ma Thakur, Ma Thakar
 45. Omitted
 46. Varli
 47. Vitolia, Kotwalia, Barodia
- RELATED LINKS

A lot of research has been done on tribal people shows backwardness with comparison to main stream Indian in all aspect of life. The study suggests in this field very low achievement motivation and poor progress in primary, secondary and higher education and dropout rate is very high in comparison with rest students. According to Census 2011, tribes constitutes 8.6% of our total population and out of which only 58.96% are literate and gender wise dropout rate is also noteworthy. Students of tribal community are facing a lot of problems while studying. Some study like drishti institutes mentioned in its study notes that difficulty in education because of Medium of Instruction, Language has been the biggest constraints in tribal education. All the curriculum and teacher's module are designed in official/regional language which is alien for tribal student. Economic Condition, the economic condition of tribal people is so poor that they do not desire to spare their children or their labor power and allow them to attend schools. Teacher Absenteeism, in the remote tribal areas the teacher absenteeism is a regular phenomenon and this affects largely the quality of education. Attitude of the Parents, as education does not yield any immediate economic return, the tribal parents prefer to engage their children in remunerative

employment which supplements the family income. Infrastructural Challenges, most of the schools located in tribal areas have minimal infrastructural facilities. These schools are not equipped with teaching learning materials, study materials, even minimum sanitary provisions are not maintained. Some study indicates tribal students lagging behind about education due to various reason like poverty, socio economical condition, cultural disparity, prejudices, migrations of parents, distance of schools is far away from tribal residence, tribe specific traditions, health issues and mal nutrition etc. Very few studies have been conducted by psychological angel that's why in this article researcher tried to study problems of tribal Bhils students' academic self-concept of Ahmednagar district by psychological angels. The self-concept and academic self-concept direct the person toward his decided life goal attainment or achievement.

Basic concepts in research:

1. Tribe

Definitions of tribes:

A tribe is a group of people in a primitive or barbarous stage of development acknowledging the authority of a chief and usually regarding themselves as having a conman ancestry (Oxford Dictionary 2013).

Tribe is a social group with territorial affiliation, endogamous, with no specialization of function, ruled by tribal officers hereditary or otherwise, united in language or dialect, recognizing social distance with other tribes or castes, without any social obloquy attracting to them, as it done in the caste structure following tribal traditions, beliefs and customs, illiberal of naturalization of ideas from alien sources above all conscious of homogeneity of ethnic and territorial integration. (Nadeem Hasnain and D. N. Majumdar 1967).

Article 366 (25) of the Constitution of India refers to Scheduled Tribes as those communities, who are scheduled in accordance with Article 342 of the Constitution. (D.D Basu 2018). There are different definitions have been given by various researchers and experts in the field of

Academic Self-Concept:

Academic Self-Concept (ASC) is the part of self-concept and it is related to person's self-perceptions about his abilities, skills, which is needed for educational success into his particular education. (Shavelson et al.1976) defined academic self-concept as ones academic self-perception of one's ability in school. In four decades academic self-concept has been studied widely all over the world. ASC is closely related to determine the academic future, educational and other behavioral outcomes of the students. (Marsh and Craven; 2006).It also strongly related to achievement motivation, academic achievement among students (Kadir et al 2012). Academic self-concept starts to develop as growing age of person. Research suggest it develops from an early childhood from age of 3 to 5 years due to family, parental, educator influences and some research suggest it starts by age of 7 or 8 when children evaluate their ones academic abilities based on feedback received from parent, teachers and peers. By the age of 10 to 11 they start to compare their academic abilities with their peers and draws self-estimates about themselves (Kamble and Naik, 2013).There are various factors contributes in development of ASC into children, it has significant impact on person's life, so education systems should foster positive self-

concept among children. ASC is favourably associated with academic performance (Caster, 1997). (Kamble and Naik (2013).

Factors Involving Academic Self-Concept:

Kamble and Naik (2013) described following factors related to academic self-concept. Academic Ability, Academic Interests, Study, Examinations, Academic Interaction, Academic Efforts Curriculum: Academic Future:

Nijoki, Pricilla Gachigi (2019,sp.102) conducted study on both primary and secondary schools about academic self-concept and arithmetic achievement they found ASC positively correlated significantly and predict mathematic achievement. K.Jayaraman and K.Shivaraman (2016) found significant difference between self-concept and achievement motivation, having positive self-concept tribal student achieved high in education and gender factor also got significant. Ruhul Amin Ahmed (2012) studied self-concept among tribal and non-tribal children in which he found low self-concept among tribal students.

Anthropology, sociology, and other related social sciences which helps to understand tribes.

Reviews of Lilturature:

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Ruhul Amin Ahmed (2012) studied self-concept among tribal and non-tribal children in which he found low self-concept among tribal students.

Anthropology, sociology, and other related social sciences which helps to understand tribes.

Methodology:

Variables-In this study independent variables are-

Cultur-1.Tribal students and 2, Non-tribal students, Gendar-3Boys and 4 .Girls

Dependent variable – Academic self-concept

Control variables are age, education, marital status and culture.

Operational definitions:

- 1. Tribal students**-Tribal Students refers to the class of children who has been included into tribes by constitution of an India and state of Maharashtra and who are learning in various governments and Adivasi secondary schools in Maharashtra.
- 2. Non-tribal Students:** Non-tribal Students refers to the class of children who has been included into open /general category by constitution of an India and state of Maharashtra and who are learning in various governments of secondary schools into Maharashtra.

3. Academic self-concept- Academic self-concept is the performance or score obtained on test of Learning Disability Scale by

Hypothesis:

1. There will be no significant difference between tribal students and non-tribal students about their academic self-concept.
2. There will be no significant difference between tribal boys and non-tribal boys about their academic self-concept
3. There will be no significant difference between tribal girls and non-tribal girls about their academic self-concept.

Design:

Purposive non probability sampling technique was used in present investigation.

Sample:

Purposive non probability sampling technique was used in present investigation. Students learning in various secondary schools in Ahmednagar district of class seventh standards and age of twelve were taken as a sample respondents. A sample of 60 Bhils tribal were taken from two different Sant Gadgebaba ashram schools of Ahmednagar districts located at Takli Kazi and Rahuri village. and 60 non-tribal open category students were mainly selected in which tribal girls were 30 and non-tribal girls were also 30 from Shri Banshibhau Mhaske Vidyalaya high school of the same district located at Takli Kazi village.

Sample design

IV	Boys	Girls	Total
Non-tribal students	30	30	60
Tribal students	30	30	60
Total	60	60	120

Tools:

Academic Self Concept Scale (ASCS) by Kamble and Naik (2013) was used as a tool. ASCS consists 57 items, distributed among eight scales, such as 1.Academic Ability, 2.Academic Interests, 3.Study, 4.Examination, 5. Interaction, 6.Academic Efforts, 7.Curriculum, and 8.Academic Future. the responses for each item were given on five point Likert type and the value ranged from (5) Strongly agree, to (1) strongly disagree as per the positive and negative items. Reliability- Cranach’s Alfa reliability on these subscales are 0.86, 0.92, 0.88, 0.84, 0.87 0.90, 0.85, 0.87 respectively, and for total scale reliability is 0.93. Validity-It ranges from .71 to .80

Statistical Techniques:

Raw scores in the tests have been taken for final analysis purpose .The quantitative data has been compiled in tabular form. The data has been analyzed two statistical techniques with help of SPSS,

1. Descriptive statistics
2. Independent sample “t” test for mean comparison.

Data Analysis and Interpretation and Discussion:

Hypothesis no 1

There will be no significant difference between tribal students and non-tribal students about their Academic Self-Concept.

Table no 1

Group	N	Mean	Mean difference	Std. Deviation	Std. Error Mean	df	t
Tribal	60	15.9333	10.89840	-18.50000	1.40698	118	-9.452
Nontribal	60	34.4333	10.54026	-18.50000	1.36074	118	*0.01

Table no 1 shows group statistics and independent sample t test in which value clearly shows significant difference between tribal and nontribal students about their academic self-concept, and it is significant on 0.01 level.

Hypothesis no 2

There will be no significant difference between tribal boys and non-tribal boys about their Academic Self-Concept.

Table no 2

Group	N	Mean	Mean difference	Std. Deviation	Std. Error Mean	df	t
Tribal Boys	30	14.5333	-18.10000	11.27320	2.05820	28	-6.726
Nontribal Boys	30	32.6333	-18.10000	9.49586	1.73370	28	*0.01

Table no 2 shows group statistics and independent sample t test in which value clearly shows significant difference between tribal boys and nontribal boys about their Academic Self-Concept , and it is significant on 0.01 level.

Hypothesis no 3

There will be no significant difference between tribal girls and non-tribal girls about their Academic Self-Concept.

Table no 3

Group	N	Mean	Mean difference	Std. Deviation	Std. Error Mean	df	t
Tribal Girls	30	17.5333	-19.36667	10.81421	1.97440	28	-6.890
Nontribal Girls	30	36.9000	-19.36667	10.95870	2.00078	28	*0.01

Table no 3 shows group statistics and independent sample t test in which value clearly shows significant difference between tribal girls and nontribal girls about their Academic Self-Concept, and it is significant on 0.01 level.

Discussion:

Statistical analysis shows significant on 0.01 level hence it proves all three null hypothesis as rejected. The more and multiple studies is necessary in this area because researcher didn't get review of literature in this regard.

Conclusions:

Following three hypotheses were found to be true hence it was accepted.

1. There will be no significant difference between tribal students and non-tribal students about their Academic Self-Concept, is rejected.
2. There will be no significant difference between tribal boys and non-tribal boys about their Academic Self-Concept, is rejected.
3. There will be no significant difference between tribal girls and non-tribal girls about their Academic Self-Concept, is rejected.

It is proves that both boys and girls of tribal Bhil school going students have low academic self-concept than other non-tribal students.

Limitations:

The investigator had restricted area of conducting the present study, only Ahmednagar district had been considered in this study. The sample size being very small, the findings and conclusions cannot be generalized. There were pandemic situations all over world due to corona virus and orders given by state government to school's time to time, education is badly affected of all children in the past two years so that conclusions of present study may be misleading. Data was collected after eighteen months of pandemic so results can be consequences of it and hence more research is necessary for valid conclusion. Two way ANOVA can be computed to see the interactional effect.

Suggestions:

By taking big sample more valid study can be done for generalizations of gender related conclusions. When schools will open by regular as usual mode that time data should be gathered studied. More psychological variables can be used for tribal students' assessments like, intelligence, aptitude, self-concept, adjustment, achievement motivation, study habits etc. Tribe wise study can be done because many variables was uncontrolled like socio-economic status, parent education, deprivation, micro cultural differences etc.

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ENHANCING COGNITIVE AND EMOTIONAL WELL-BEING THROUGH INTEGRATED COUNSELLING APPROACHES IN SCHOOLS

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Abstract:

Adolescence represents a crucial developmental phase characterized by rapid physical, cognitive, and emotional transitions. In India, secondary school students often face academic stress, identity crises, peer pressure, and emotional instability, all of which directly affect their well-being and learning outcomes. Integrated counselling approaches, combining cognitive-behavioural and humanistic perspectives, are increasingly recognized as essential interventions in schools to foster both cognitive and emotional health. The present study is a descriptive, review-based investigation that synthesizes secondary data from recent Indian research conducted between 2012 and 2024. The objective was to explore how integrated counselling enhances students' cognitive and emotional well-being, strengthens school-based support systems, and contributes to holistic development. The findings from fifteen Indian studies—including those by Deb & Walsh (2012), Parveen & Akhtar (2021), and Joshi (2021)—indicate that integrated counselling significantly improves academic focus, emotional regulation, and social adaptation among adolescents. These outcomes are achieved through the fusion of cognitive restructuring (as per CBT) and emotional empathy (as per humanistic counselling). The results also emphasize the crucial role of counsellors and teachers in jointly implementing these practices within classrooms. Interpretation of secondary evidence demonstrates that integrative approaches align well with India's socio-cultural and educational framework, promoting sustainable student growth.

Keywords: *Cognitive well-being, Emotional regulation, Integrated counselling.*

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Introduction:

In today's competitive academic environment, students face multifaceted challenges that affect their psychological and emotional equilibrium. In India, secondary school students are increasingly burdened with expectations, social comparison, and technological overload (Deb & Thomas, 2019). These pressures often lead to diminished self-esteem, emotional distress, and poor cognitive functioning. Cognitive and emotional well-being, therefore, form two critical pillars of adolescent mental health. Cognitive well-being involves rational thinking, concentration, and academic adaptability, while emotional well-being encompasses self-regulation, empathy, and resilience (Singh & Misra, 2019).

The traditional education system in India has historically emphasized intellectual achievement but often neglected socio-emotional learning. However, recent frameworks, including the National Education Policy (NEP, 2020), advocate for holistic student development through integrated guidance and counselling systems.

These policies recognize that academic excellence is impossible without emotional stability and cognitive flexibility.

Integrated counselling approaches combine multiple schools of thought—primarily **Cognitive Behavioral Therapy (CBT)** and **Humanistic Counselling**—to address students' diverse needs. CBT emphasizes the correction of distorted thoughts and maladaptive behaviors, while humanistic approaches prioritize empathy, unconditional positive regard, and self-actualization (Kumar & George, 2020). Integrating these approaches helps bridge the cognitive and affective dimensions of learning, fostering both academic competence and psychological well-being.

Within the Indian context, several studies (Deb & Walsh, 2012; Joshi, 2021; Sharma, 2020) demonstrate the effectiveness of school-based counselling interventions. These studies highlight that adolescents who receive structured, integrative counselling sessions display higher academic motivation, better emotion regulation, and enhanced interpersonal relationships. Given these findings, the current paper seeks to consolidate secondary evidence to understand the effectiveness of integrated counselling in enhancing cognitive and emotional well-being among Indian secondary school students.

Review of Literature:

Deb and Walsh (2012) conducted one of the earliest Indian studies emphasizing the need for comprehensive school-based counselling to manage academic stress and emotional maladjustment. Their findings revealed that integrative counselling interventions led to improved classroom engagement and reduced anxiety levels.

Parveen and Akhtar (2021) explored the role of guidance and counselling in Indian schools, concluding that emotional and cognitive support services positively influence overall student adjustment. Similarly, Ratra and Singh (2022) found that emotional literacy programs enhance empathy and reduce behavioral problems among adolescents.

Joshi (2021) conducted a Maharashtra-based study and noted that when emotional and cognitive counselling strategies were integrated, students demonstrated a 30% improvement in coping skills. Patel (2021) also emphasized that integrating humanistic dialogue with cognitive techniques enhanced students' self-esteem and self-reflection abilities.

Further, Sharma (2020) analyzed Indian school-based emotional counselling interventions and concluded that mindfulness, peer discussion, and self-reflective techniques improve emotional balance. Chakraborty (2020) highlighted that integrative counselling resonates with Indian cultural traditions that view learning as both intellectual and emotional development.

Bansal and Trivedi (2020) focused on adolescent stress in Indian urban schools, showing that integrated counselling enhances focus and reduces test anxiety. Kumar and George (2020) observed that combining CBT and humanistic methods produced lasting behavioral change among high school students.

Deb, Thomas, and Bose (2019) provided evidence that counselling programs incorporating relaxation, goal setting, and reflective exercises improved psychological resilience among Indian adolescents. A study by the

BMC Public Health Journal (2024) reinforced these findings by showing that life skills education within counselling programs improved socio-emotional outcomes.

Objectives:

1. To examine the impact of integrated counselling approaches on cognitive well-being among secondary school students.
2. To study the influence of integrated counselling on emotional regulation and emotional well-being.
3. To explore the effectiveness of school-based counselling programs integrating cognitive-behavioural and humanistic methods.
4. To analyze the role of counsellors and teachers in implementing integrated approaches for holistic student development.

Methodology:

This study adopts a descriptive research design based entirely on secondary data. Relevant literature was collected from Indian academic databases, including Shodhganga, ResearchGate, and PubMed. Peer-reviewed journal articles published between 2012 and 2024 were analyzed. The inclusion criteria focused on research conducted in Indian schools, particularly involving adolescents aged 13–17 years.

Fifteen studies were selected for review based on their relevance to cognitive and emotional well-being, integrative counselling practices, and school-based interventions. Data were analyzed thematically, focusing on outcomes related to academic performance, emotional stability, and holistic development. Interpretation of results was carried out in line with the four research objectives.

Results and Interpretation:

Objective 1: To examine the impact of integrated counselling approaches on cognitive well-being among secondary school students

The review of secondary data revealed that integrated counselling approaches—especially those combining cognitive-behavioral and humanistic principles—significantly enhance students’ cognitive well-being. Cognitive well-being in school contexts is defined as the ability to think clearly, plan effectively, solve academic problems, and maintain a positive self-concept (Singh & Misra, 2019). Research from Indian settings (Deb & Walsh, 2012; Bansal & Trivedi, 2020) consistently shows that counselling interventions targeting both emotional and cognitive domains lead to better academic performance and greater cognitive adaptability.

Studies conducted in Delhi, Mumbai, and Pune have demonstrated that when counsellors employ integrative strategies—such as combining cognitive restructuring with self-reflective discussions—students show improved focus, memory retention, and critical thinking skills (Patel, 2021). For example, Ratra and Singh (2022) observed that adolescents who underwent structured counselling sessions based on integrative models displayed enhanced metacognitive awareness and reduced negative automatic thoughts.

Interpretatively, these findings suggest that the integrative model works by addressing both the cognitive distortions (through CBT techniques) and motivational components (through humanistic counselling). The combination allows students to internalize learning more meaningfully. The Indian cultural emphasis on

collectivism and holistic growth aligns well with integrative counselling, as it accommodates both rational thought and emotional awareness (Chakraborty, 2020).

Thus, secondary data clearly indicates that integrated counselling significantly improves students' cognitive processing, problem-solving abilities, and academic adjustment, particularly when guided by trained counsellors familiar with local contexts. This interpretation highlights the importance of embedding integrative counselling as part of the school curriculum to promote sustained cognitive well-being among adolescents.

Objective 2: To study the influence of integrated counselling on emotional regulation and emotional well-being

Emotional regulation is a critical determinant of psychological health among adolescents. Secondary studies from India underscore that counselling programs that integrate emotional awareness (from humanistic approaches) and cognitive control strategies (from CBT) yield positive emotional outcomes (Deb, Thomas, & Bose, 2019; Parveen & Akhtar, 2021). For instance, a systematic review by Sharma (2020) found that school-based emotional counselling sessions helped students develop coping strategies to manage stress, anger, and anxiety.

Further evidence from Maharashtra schools (Joshi, 2021) suggests that emotional literacy sessions conducted under integrative counselling frameworks led to reductions in self-reported emotional distress by over 30% within three months. Emotional well-being programs emphasizing empathy, self-reflection, and guided emotional expression enabled students to manage interpersonal conflicts and peer pressure more effectively.

Interpretatively, integrated counselling appears to influence emotional regulation through dual mechanisms—cognitive reframing (identifying and altering irrational emotional responses) and emotional expression (recognizing and validating feelings). These two processes correspond respectively to the cognitive-behavioral and humanistic traditions, creating a balance between thought regulation and emotional authenticity (Kumar & George, 2020).

The Indian education system, traditionally oriented toward academic excellence, often neglects emotional development. Integrative counselling bridges this gap by normalizing emotional discussion within classrooms and promoting self-regulation skills that reduce anxiety and depressive tendencies (Ratra & Singh, 2022). Thus, evidence supports that integrated counselling significantly enhances emotional well-being by fostering resilience, empathy, and positive emotional coping among secondary students.

Objective 3: To explore the effectiveness of school-based counselling programs integrating cognitive-behavioural and humanistic methods

The literature reveals that school-based integrated counselling programs combining CBT, humanistic, and life-skills education approaches have been remarkably effective across various Indian states. According to Deb and Walsh (2012), structured school counselling interventions led to a noticeable decline in behavioral problems and improved classroom participation. Similarly, BMC Public Health (2024) reported that integrating life-skill-based counselling into school curricula enhanced socio-emotional development among adolescents.

Research conducted in Indian metros and semi-urban schools (Patel, 2021; Bansal & Trivedi, 2020) showed that integrated interventions achieved better outcomes than single-approach counselling. Programs that included group discussions, relaxation exercises, and reflective dialogues demonstrated a 20–25% increase in self-efficacy and self-esteem scores.

Interpretatively, these results confirm that school-based integrated counselling provides a multi-layered impact—addressing not only cognitive distortions but also value formation, motivation, and social adjustment. Humanistic methods emphasize empathy and unconditional positive regard, creating a safe environment for students, while cognitive methods help them challenge irrational beliefs and develop rational self-statements (Sharma, 2020).

The effectiveness of these programs also lies in their contextual adaptability. Indian schools that embedded counselling into regular teaching schedules, peer mentoring, and extracurricular life-skill activities observed more sustainable behavioral changes (Joshi, 2021).

Objective 4: To analyze the role of counsellors and teachers in implementing integrated approaches for holistic student development

The success of integrated counselling heavily depends on the competence and collaboration of school counsellors and teachers. Secondary studies emphasize that the dual role of counsellors—as facilitators of psychological growth—and teachers—as daily mentors—is crucial for sustaining well-being among adolescents (Parveen & Akhtar, 2021; Deb & Thomas, 2019). In India, where counsellor-student ratios are often low, trained teachers play a vital supplementary role in delivering psycho-educational interventions (Kumar & George, 2020).

Research from Maharashtra and Karnataka (Joshi, 2021; Chakraborty, 2020) indicates that when teachers are sensitized to basic counselling skills such as empathy, reflective listening, and motivational communication, the integration of counselling practices within the classroom becomes more effective. This collaborative approach has been linked to reduced disciplinary issues, higher student engagement, and better peer relationships.

Interpretatively, counsellors function as change agents, guiding both teachers and students through psychological frameworks that support holistic development. Teachers, when equipped with emotional literacy training, serve as daily reinforcers of the counselling process (Ratra & Singh, 2022). Together, they create an ecosystem where students' emotional and cognitive needs are continually addressed rather than confined to isolated counselling sessions.

This finding aligns with the National Education Policy (NEP, 2020), which emphasizes socio-emotional learning and the integration of mental health practices into mainstream education.

Summary Interpretation:

Across all objectives, secondary data consistently highlight that integrated counselling, when grounded in Indian educational and cultural contexts enhances both cognitive functioning and emotional resilience among secondary school students. The results support the adoption of multi-dimensional, school-based counselling models that combine cognitive-behavioural, humanistic, and life-skill frameworks, implemented collaboratively by counsellors and teachers. These interpretations collectively confirm that integrative counselling is not merely a

psychological support tool but a comprehensive educational strategy essential for nurturing balanced, emotionally intelligent, and cognitively competent young individuals in India.

Discussion:

The integration of counselling into the school curriculum is now viewed as a necessity rather than an additional service. The reviewed literature highlights that Indian adolescents benefit most from counselling approaches that simultaneously address thought patterns, emotions, and behavior (Sharma, 2020). The humanistic dimension ensures empathy and connection, while the cognitive dimension facilitates rational problem-solving.

The Indian education system is transitioning toward a learner-centered model as per NEP (2020). Integrative counselling complements this transformation by focusing on holistic well-being and resilience. Emotional regulation and cognitive restructuring—core components of the integrative model equip students to navigate academic and personal challenges effectively.

This study's interpretation confirms that integrated counselling nurtures emotional maturity, strengthens motivation, and enhances social functioning. Schools implementing such approaches observe better academic consistency, fewer disciplinary issues, and improved teacher-student relationships.

Conclusion and Educational Implications:

The synthesis of secondary data strongly supports the inclusion of integrated counselling within India's secondary education framework. Counselling should not be limited to crisis management but should be proactive, embedded in teaching and learning practices. Collaboration between counsellors and teachers is vital for sustainable outcomes.

Educational implications:

- Mandatory counselling units in all secondary schools.
- Training programs for teachers in basic counselling techniques.
- Regular evaluation of students' emotional and cognitive development.
- Integration of life-skill and socio-emotional learning modules into curriculum.

Limitations:

- The study is based on secondary data.
- it relies on the validity of previously published findings.
- Limited access to Maharashtra-specific datasets may restrict regional generalization.
- Future research could include mixed-method designs combining primary and secondary data for greater empirical robustness.

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BLENDING OF ARTIFICIAL INTELLIGENCE (AI) TOOLS IN PROJECT-BASED LEARNING (PBL) WITH REFERENCE TO THE SECONDARY SCHOOL STUDENTS

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Abstract:

Project-Based Learning (PBL) is an educational approach rooted in constructivist principles. It focuses on addressing real-world issues and promotes learning through collaborative exploration and iterative thought among learners. This method shifts the educational focus from simply memorizing facts to developing and enhancing skills. Nevertheless, PBL encounters several obstacles in actual teaching practices, particularly in three areas: tailored project design, ongoing process guidance, and sophisticated evaluation feedback.

As digital transformation in education accelerates and large-scale model technology advances, the incorporation of Generative AI into PBL offers support for its effective execution. Generative AI can aid in refining project design for teaching, facilitate personalized exploration processes for high school students, and enable comprehensive skill assessments for secondary school learners. Currently, the use of Generative AI in PBL is still in a research phase.

This research focuses on creating a design that emphasizes the value of artificial intelligence in enhancing the quality of learning, particularly when utilizing active methodologies such as project-based learning (PBL). The study examined teachers' perceptions of PBL that integrates AI compared to those that do not in the context of secondary higher education. A sample of 385 secondary school teachers participated in this research, which explored perceived efficacy, the personalization of learning through AI, and levels of motivation.

This article breaks down the use of Generative AI in the phases of project design, execution, and assessment. Using the teaching project of constructing an exchange network as a case study, this framework suggests a method for prompt language design of Generative AI in PBL project development. Lastly, it assesses the potential risks associated with Generative AI. This research offers a framework and example for intelligent innovation within PBL.

Keywords: *Artificial intelligence, Project-based learning, Teacher perception technology, Active pedagogies, Transformation in education*

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Introduction:

Project-Based Learning (PBL) is an educational theory rooted in constructivism. It transforms the educational model through a cyclical process of "real problem driven - in-depth exploration of practice - collaborative knowledge construction - continuous reflection and iteration". PBL encourages a shift in educational objectives from "memorizing knowledge" to "developing skills," with its efficacy supported by OECD educational

monitoring data. Nonetheless, traditional PBL encounters three primary obstacles when applied on a large scale: personalized project design, dynamic guidance during the process, and precise evaluation feedback. As digital transformation in education accelerates, the integration of generative artificial intelligence (Generative AI) to establish a new paradigm of “human-machine collaboration” is poised to be a crucial method for overcoming the challenges in PBL implementation.

Generative AI facilitates knowledge reconstruction and content generation using large language models (LLMs) and diffusion models. Its role in education is evolving from merely a tool to becoming a cognitive partner. Currently, models such as GPT-4 have demonstrated considerable strengths in generating textbooks and providing intelligent question-answering systems. Generative AI possesses distinctive advantages throughout the complete PBL cycle: it can create dynamic knowledge graphs to enhance project design at the beginning, act as an intelligent tutoring system to assist the inquiry process in the middle, and support multi-dimensional capability profiling at the conclusion.

The utilization of Generative AI in PBL remains in the exploratory phase. This article examines the integration model of Generative AI with PBL. First, the application scenarios of Generative AI in project design, implementation, and evaluation were analysed. Next, using the development of an exchange network project as a case study, a prompt structure for designing PBL projects with Generative AI was presented. Finally, the potential risks associated with using generative AI in PBL were discussed.

Review of Literature:

Blended learning, a pedagogical approach that merges online and traditional face-to-face instruction, is recognized as a highly effective strategy in astronomy education. It supports both the teaching of astronomy content and the professional development of teachers. Through a combination of in-person seminars and online learning activities, this method facilitates both individual and collaborative learning experiences, thereby strengthening educators' subject matter expertise and pedagogical competence.

Bersamin et al., 2024: Blended Learning (BL) is an instructional approach that combines the strengths of traditional in-person teaching with online learning methods. In existing literature, BL is conceptualized in various ways.

Oliver and Trigwell (2005a): Describe it as a fusion of different media and pedagogical techniques, while Bliuc et al. (2007) emphasize the integration of physical and technology-mediated interactions.

Staker and Horn (2012): Define BL as a structured educational program that merges online content delivery with face-to-face supervision. Despite these differing perspectives, the common thread across these studies is the hybrid nature of BL, which integrates both online and in-person learning components. Blended learning is a learning model that combines traditional learning methods with online experiences and spaces. It allows students to learn through a combination of face-to-face classroom and digital learning activities. Blended learning offers greater flexibility and accessibility, allowing students to learn at their own pace and learning style. However, despite having many advantages, blended learning can also lead to digital disruptions that can negatively impact students' mental and physical health.

Solórzano Solórzano et al., 2024: Artificial Intelligence (AI) is a field within computer science dedicated to the creation of systems or machines capable of executing tasks that typically necessitate human cognitive abilities this includes the ability to learn from data, recognize patterns, make decisions, and adapt to new situations. AI can be applied in various forms, including machine learning, natural language processing, computer vision, and robotics. The main goal of AI is to create systems that can think and act autonomously, improving efficiency and effectiveness in various fields, such as health, transportation, and education.

Fleischmann, 2024: AI is described as a digital tool or software that leverages artificial intelligence to improve the design of materials in language classrooms and support learning by processing natural language and identifying data patterns. Artificial Intelligence (AI is defined as a system that can perform tasks that typically require human intelligence. AI has the ability to transform raw sensory inputs into usable information and actions, and can act autonomously in real-world environments without human supervision.

Wilhelm et al., 2024: Artificial Intelligence (AI) is a comprehensive term within computer science that pertains to the development of algorithms designed to replicate human cognitive abilities, including learning, perception, problem-solving, and decision-making. AI encompasses diverse methodologies, such as machine learning (ML) and deep learning, and incorporates various technologies and techniques, notably algorithmic decision-making.

Significance of the Study:

The significance of blending AI in PBL for secondary students lies in its ability to personalize learning, improve subject comprehension, and develop crucial future-ready skills like critical thinking and problem-solving. This approach enhances student engagement by creating dynamic environments and offers teachers data-driven insights for better instruction. Furthermore, it prepares students for an AI-driven world by making them comfortable using AI as a tool.

AI can adapt learning paths to individual student needs, providing a more personalized and effective experience than traditional methods. Studies show that students using AI-enhanced PBL have better subject comprehension compared to those in a control group without AI. Integrating AI creates a dynamic environment that can significantly increase student engagement and motivation. Blending AI with PBL fosters the critical thinking and problem-solving skills necessary for real-world challenges. It provides students with practical experience using AI tools, preparing them for a workforce that is increasingly reliant on AI. This method helps students learn to use AI as a partner to amplify their own abilities, a skill that is crucial for navigating the future workplace. AI can provide teachers with real-time feedback and insights into how students are learning, allowing for more informed teaching decisions. AI tools can help overcome some of the difficulties in implementing project-based learning, such as helping with initial project planning and idea generation. AI allows for the evaluation of a student's entire project process, from brainstorming to final product, providing a more comprehensive view of their understanding than traditional tests alone.

Objectives of the Study:

The objectives of the present study are:

1. To understand the PBL enhanced through AI is more efficient when it comes to student engagement and learning outcomes than traditional PBL.
2. To know the main challenges and obstacles for teachers using AI in PBL.
3. To observe the impact of the AI tools affecting the degree of personalized learning available, and how this impacts student motivation throughout PBL activities.

Hypothesis of the Study:

The researcher has formulated the below mentioned hypothesis for the study:

“Project-based learning (PBL) with artificial intelligence (AI) is perceived positively by secondary school teachers” because it enhances personalization, motivation, and learning effectiveness compared to PBL without AI.

Research Methodology:

A qualitative and quantitative comparative design process was conducted with a 5-point Likert scale questionnaire evaluating crucial elements such as perceived effectiveness, student motivation, and learning personalization with and without AI. This method allows for an in-depth analysis of potentially sizable inequities among groups of variables. A total of 385 secondary school teachers from three learning stages of education were included.

Research Design:

This research would be applied analytical research which would be quantitative as well as qualitative in nature. The research would be comparing, quantitative recording as well as recording of people's opinions and views. Both primary as well as secondary data would be required for the research. The method for primary data collection would be structured questionnaire method and interview method. The questionnaire would be designed as per the requirements of the research area in the due course.

Methods of Data Collection:

For the said research primary as well as secondary data will be required. The data would be collected through following sources:

Primary Data: The primary data is collected from various sources such as Questionnaires, Informal Interviews and Observations.

Secondary Data: The secondary data is collected through various sources such as Reports, Committee Reports, Reference Books, Publish Research Papers and Websites.

Universe and Sample Size:

As the population of the secondary school teachers is indefinite and it is very difficult to decide the sample size for the researcher. Therefore, the researcher has used Cochran's sample size formula to decide the sample size of the secondary school teachers.

Justification of Sample:

Cochran's sample size formula is used.

$$n = \frac{z^2 * \hat{p}(1 - \hat{p})}{\epsilon^2}$$

Where:

- n is the sample size
- z is the z-score
- \hat{p} is the population proportion
- ϵ is the margin of error (confidence interval)

Calculation-

$$n = \frac{1.96^2 * 0.50(1 - 0.50)}{0.05^2}$$
$$n = 385$$

Where:

- $z = 1.96$ (Based on a 5% margin of error. Data are assumed two-tailed (i.e. a margin of error of 2.5% on each end of a normal distribution curve), thus a value of 0.9750 will be looked up within the z-score table.)
- $\hat{p} = 50\%$ or 0.50 (This value is often pulled from previous research/ literature. If unsure, use 50%.)
- $\epsilon = 5\%$ or 0.05 (Same value used to get the z-score estimate but provided as a decimal/ percentage.)

Results of the Study:

This study seeks to evaluate the perceptions of 385 secondary, and higher education teachers in the debate regarding the inclusion of artificial intelligence (AI) in project-based learning (PBL) and traditional methods. The results are reported based on the descriptive and inferential analyses performed.

The descriptive statistics indicate the overall distribution of the teachers' perceptions within each of the groups with and without AI integration in PBL. The central tendency and dispersion features for each group are presented in Table 1. The average perception score in the AI-integrated group was 4.17 (standard deviation = 0.47), but in the group without AI, the mean was 3.49 (standard deviation = 0.57). Also, there was no overlap of the 95% confidence intervals for the mean for each group, which indicates a significant difference between the two conditions.

The positive difference in the means suggests that the integration of AI in PBL is perceived by the teachers as a factor that is likely to contribute to a better learning experience than that obtained with the traditional method. The smaller standard deviation found in AI-integrated PBL hints towards a more homogeneous and better perception among individual teachers that are acquainted with this new methodology, teach it, or evaluate it. The normality of distribution of the perceptions of the teachers was tested in both groups using the Shapiro–Wilk test. As shown in Table 2, the group with AI present did not follow the normality assumption ($p = 0.004$); however, the group without AI did not show significant deviation from a normal distribution ($p = 0.373$).

Table 1. Descriptive statistics

		Method	Statistics	Std. Error
		Mean	4.17	0.03
		95% confidence interval for the mean	Lower bound	4.12
			Upper bound	4.23
		5% trimmed mean	4.18	
		Median	4.16	
		Variance	0.22	
	1	Standard deviation	0.47	
		Minimum	2.89	
		Maximum	5	
		Range	2.11	
		Interquartile range	0.65	
		Skewness	-0.23	0.14
Perception		Kurtosis	-0.41	0.28
		Median	3.49	0.03
		95% confidence interval for the mean	Lower bound	3.43
			Upper bound	3.56
		5% trimmed mean	3.49	
		Median	3.54	
		Variance	0.33	
	2	Standard deviation	0.57	
		Minimum	1.67	
		Maximum	5.	
		Range	3.33	
		Interquartile range	0.75	
		Skewness	-0.07	0.14
		Kurtosis	0.29	0.28

A Mann–Whitney U test for independent samples was performed to assess whether this difference in likelihood perception was statistically significant between both groups. We chose this non-parametric analysis approach because of the shape of the data distribution. These results suggest that integrating/not integrating AI into PBL results in a statistically significant difference in perception. The standardized test statistic was $Z = -13.69$, confirming the additional evidence implying the presence of a significant difference between the perception of PBL with AI and the perception of PBL without AI. This evidence leads to the conclusion that teachers hold considerably more positive than negative views about the impact of AI on PBL.

Finally, to quantify the observed differences, the effect size (r) for the Mann–Whitney U test was computed and is shown in Table 4. The outcome was $r = 0.56$, which would be considered a large effect according to most classification systems. Such a great effect size suggests that AI tools have effects that are, for a teacher, highly favourable in the PBL model. This finding indicates the practical value of AI-enhanced educational innovations and highlights the importance of such tools in real-life conditions. This not only emphasizes the presence of a considerable difference in teachers’ perceptions but also suggests that there are practical implications of AI in PBL for future implementations and research in such methodologies.

Table 2. Mann–Whitney U test

Total N	600
Mann–Whitney U	15,924.0
Wilcoxon W	61,074.0
Test statistic	15,924.0
Standard error	2123.08
Standardized test statistic	–13.69
Asymptotic significance (two-tailed test)	0.00

The results provide deeper insights into the statistical analyses of these questions, indicating the range and divergence in the views held by teachers of various educational levels on the role of AI and its use in the PBL methodology. In general, these results suggest a propensity for the use of AI in PBL that is far more positive and cohesive among teachers based on the context of the implementation or review of the use of AI in PBL

Major Findings of the Study:

- This study examines teachers' perceptions of integrating AI in project-based learning (PBL). It reveals that educators generally hold favourable views on the role of AI in enhancing project-based learning in comparison to conventional methods.
- Positive outcomes pertaining to AI in educational settings have been reported in various studies, showing that AI-enhanced natural science learning environments boost students’ motivation, academic performance, and collaborative problem-solving skills.

- The findings align with this study's results, indicating that teachers see AI as a supportive tool that improves project management while facilitating personalized instruction for students.
- The perspectives have contributed to the insights gained in the current research, which further clarified the factors that enhance PBL's effectiveness, ultimately guiding the creation of an AI-optimized teaching model.
- Educators noted that adaptive feedback and real-time self-assessment tools are beneficial in mitigating student anxiety and enhancing motivation. Although this research did not specifically measure anxiety reduction, earlier studies emphasize its significance in improving student confidence and suggest it could be a topic for future investigation.
- The study highlights the significant benefits of incorporating AI into project-based learning (PBL), while also acknowledging the challenges, concerns, and necessary precautions. A notable concern is the potential for excessive dependence on AI systems, which cannot substitute for the essential human interactions vital for students' holistic development and the cultivation of soft skills like empathy and teamwork.
- Additionally, the effective implementation of AI necessitates considerable investments in system infrastructure and teacher professional development, which may not be feasible in all educational settings, particularly in under-resourced and low-funded institutions.

Challenges of Generative AI in PBL Observed During the Study:

Opportunities and challenges coexist in the utilization of Generative AI in education. The following outlines the obstacles associated with Generative AI in project-based learning (PBL).

- There is a potential for inaccuracies when using Generative AI to create teaching materials. Artificial intelligence may produce outdated, incorrect, or fabricated data. Therefore, implementing a dual verification system that combines AI checks with human oversight is essential.
- The integration of Generative AI can lead to ethical dilemmas and issues surrounding academic integrity. The lines surrounding academic plagiarism have become increasingly unclear. The teaching resources generated could pose copyright challenges. Additionally, ensuring the originality of students' work is complicated, and there is a risk of violating data privacy.
- An overreliance on artificial intelligence for guidance, prompts, and support may diminish students' ability to learn independently.
- Variations in technological infrastructure across regions may obstruct the pursuit of educational equity. Areas with limited resources are often constrained by inadequate hardware and network bandwidth. As such, considerations for lightweight technology and distributed systems should be taken into account.

Conclusion:

Blending AI with Project-Based Learning (PBL) in secondary schools can significantly enhance student engagement, critical thinking, and future readiness by creating personalized learning experiences and preparing students for an AI-driven workforce. This integration empowers students to take more ownership of their learning and develop essential skills like using AI as a tool for research, content creation, and task automation, while still requiring human judgment, creativity, and fundamental knowledge to succeed.

AI should augment, not replace, the teacher. Instructors are still crucial for providing context, facilitating group work, and guiding students to critically evaluate AI-generated results. Students still need a strong foundation of fundamental knowledge and judgment to use AI effectively and ensure their contributions are valid. The goal is to use AI to amplify human capabilities, not displace them, creating learning experiences where human skills like judgment, creativity, and ethical reasoning are central.

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EFFECTS OF SOCIAL MEDIA ON MENTAL HEALTH

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Abstract:

Social media has revolutionized connecting, communicating, and sharing information in the past decade. In 2023, the average time per day spent on platforms such as Facebook, Twitter, Instagram, TikTok, and Snap chat is almost 150 minutes. It has become an integral part of our daily lives, offering unprecedented opportunities for social interaction and self-expression. However, while introducing numerous benefits, it's crucial to acknowledge its potential impact on our mental health. The accessibility and constant exposure to curated online lives have raised concerns about the effects on our psychological well-being. So let's explore how social media positively and negatively influence mental health. The modern world is supposed to be full of comforts and luxuries but a person has lost true happiness let alone peace of mind. Hence the twentieth century is called the Age of Anxiety. Over-anxiety seems to be the main cause at the root of many mental disorders. So let's find out how social media has positive and negative effects on mental health.

Keyword: *Social Media and Mental Health .*

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Introduction:

By 2021 there will be 3 billion internet users in the world. India is the country with the highest internet usage in the world. India has the largest youth population in the world. In other words, the youth of India use the internet and media all the time. Media is a concept that has become an integral part of today's modern age. Facebook, Twitter, Instagram, Whatsapp have changed everyone's daily life. A message sent from one end of the world reaches the other end of the world in an instant. Once we get into the world of mass media, we become so engrossed in seeing or living that world that there is no turning back. The most affected group is the teenagers, once they are caught in the media's web; it is very difficult for them to escape from it. As such, the mass media originated with positive intentions. While we are moving away from our home, family, friends and relatives in this stressful life, we stay connected with them through the media. Any information is available in one click. But it is necessary to use the media carefully. Because it is being misused more. Its negative effects are more visible in this generation. There is no definitive research till date on whether or not mass media harms the mental health of teenagers.

But among the many studies that have been done, it is clear that there is a significant increase in anxiety, depression and eating disorders. According to a study from the University of Pittsburgh, the group that spent more time on social media came to the fore. They were 2.2 times more likely to report concerns about eating and

self-image Risk taking was 2.6 times the risk. A UCLA Bain Mapping Center study of teen's ages 13-18 showed increased activation in the brain's reward center due to high liking of self-photos.

Objectives :

- 1) To understand the concept of Social Media.
- 2) To understand the effect of social media on mental health.

Importance of Research:

The present research is based on the effect of media on mental health. Through the presented research, one can understand the needs of the society, their mental health, the structure of the society, the importance of media in the development of the society. Through this research, it will be realized how important responsibility and adverse effects media have on the mental health of the society. Through this research, every person will realize the importance of how to maintain their mental health intact the presented research will benefit all teachers, students, researchers, professionals, employees, journalists.

Research Methods:

Secondary data collection tools have been used to collect data in the present research. What are the needs of the society and how those needs are met by the media, or how human social life has evolved because of the media. How society interacts with the media. In short, secondary sources of information are employed to study the relationship between the impacts of mass media on mental health. For this purpose, the contribution of media in social development has been explained with the support of various reference books, published literature, internet, research literature.

Objectives No. 1 To understand the concept of Social Media.

Social media are understood as networked communities and various forms of online communication that people use to share information, ideas, messages, videos, and other content."

Social media should include online communication. This means that diffusion medium history cannot begin before the invention and widespread adoption of the Internet. Looking at this definition, we can see how many media outlets are used around the world, from profile based platforms like Whatsapp, Facebook, LinkedIn, to video portals like YouTube and Gmail. The starting point of communication is Samuel Morse's first telegraph which he sent between Washington DC and Baltimore in 1844. The telegraph does not contribute to any larger community or collective, it is used to send individual messages between two people. Although entertainment is a part of continuing mass media, the real history of mass media dates back to the 1970s after the rise of the Internet. The Internet had its roots in the 1960s and 1970s. When various private and public organizations were trying to find ways for computers to communicate with each other. The two oldest platforms were Six Degrees and Friendster. And these media play a role in the revolution.

1. Social Networks Facebook Twitter LinkedIn:

These types of dissemination medium are used for individuals and brand correlation on the web. Help us in business through social awareness, relationship building, customer service lead generation, and conversion. On this network we can display campaigns through different types of media which will help in expanding

our visibility. Manufacturers encourage individuals and businesses to communicate online, share data and ideas to ensure a relationship. If you are looking for a way to optimize an existing marketing campaign, you can find paid channels such as Facebook, Twitter, and LinkedIn.

2. **Sharing Media –Instagram, Snap chat YouTube :**

A sharing type of media used to search and share photos on the web directly before video and other types of media. You should consider your sources and target audience to decide whether you should use these media for your business. These channels will help you run a well-organized campaign to increase leads and audience base.

3. **Discussion forum reddit Quora dig:**

These types of media are used to find, share, and discuss various types of information, opinions, and news. Before Facebook became a popular medium, these places used to be used by professional experts and various discussions about various fields. These places are very effective for advertising and business.

4. **Bookmarking and Content Curation Network Pinterest Flip board :**

Choosing such media helps you to share, discuss, save and discover the latest trending content and media. They are also very useful for promoting your business. To run a social media campaign on pinterest, you need a bookmarked site. Optimize headlines and images for the feeds you use to bookmark and access Content Curation Network content. Flip board provides you with the most engaging content. Create your own magazine and then show it to your audience.

5. **Customer Review Media, Yelp, Zomato, Trip Advisor:**

Using these media helps us to find, share and review different information about various products, services. When a business has positive policies on this medium, its claims are more credible. These mediums can provide a place for users to review a wide variety of products and services they use. Yelp and Zomato are types of media that offer location-based review services. Which helps us to run location based campaigns.

6. **Blogging and Publishing Media Word press, Tumbler Media :**

Article Distribution Media We uses these types of media to publish, find, and comment on blogs and other content on the web. This medium is essential for businesses that want to use content marketing effectively. We can share this content through Facebook Twitter LinkedIn.

7. **Shopping Media Polyvore:-**

These mediums are of great use if you have a burning desire to discover all the latest trends in marketing or go on shopping trips. These mediums are effective for small businesses and startups as they can sell their products without any land based office or shop.

Objectives No. 2 To understand the effect of social media on mental health.

The Positive Impact of Social Media:

1. Connectivity and Community

Social media platforms have significantly enhanced our ability to connect with others, regardless of geographical boundaries. It allows people to maintain relationships, reconnect with old friends, and form new

friendships. It also facilitates the creation of online communities centered around shared interests, hobbies, and causes, providing a sense of belonging and support.

2. Information Sharing and Awareness

News, updates, and important events can be disseminated rapidly on social media and reach a vast audience within seconds, allowing for increased awareness and engagement. Platforms like Twitter and Instagram have played a crucial role in promoting social causes, activism, and awareness about important issues such as mental health, environmental conservation, and social justice.

3. Educational Resources

Social media has revolutionized access to educational content. Online platforms such as YouTube, Facebook, and LinkedIn now host various instructional videos, tutorials, and online courses. These resources have made learning more accessible, allowing individuals to acquire new skills, expand their knowledge, and pursue personal and professional development opportunities.

4. Support and Empowerment

Online support groups and communities have emerged, providing a safe space for people to share their experiences, find solace, and receive guidance. It has empowered individuals to openly discuss mental health, body positivity, and other sensitive topics, reducing stigma and fostering empathy and understanding.

5. Entrepreneurship and Networking

Social media has become a powerful tool for entrepreneurs, freelancers, and small businesses. It offers a cost-effective way to promote products, services, and personal brands, reaching a global audience. Platforms have also facilitated networking opportunities, connecting professionals from various industries, enabling collaboration, and opening doors for career advancements and partnerships.

6. Creative Expression and Inspiration

These platforms have become a place for creative expression. Artists, writers, photographers, musicians, and other creative can showcase their work, gain exposure, and receive feedback from a diverse audience. Social media inspires individuals to discover new ideas, explore different perspectives, and engage with thought-provoking content.

7. Crisis Response and Humanitarian Aid

During times of crisis, it has played a vital role in mobilizing support and aid. People use social media to coordinate relief efforts, share emergency information, and connect affected individuals with necessary resources. Social media has facilitated fundraising campaigns, allowing people to contribute to charitable causes and assist those in need.

The Negative Impact of Social Media:

1. Comparison and Envy

Social media platforms often present an idealized and curated version of people's lives. Constant exposure to these highlight reels can lead to feelings of inadequacy, low self-esteem, and increased social comparison.

Seeing others' accomplishments, appearances, and experiences can evoke envy and create a distorted perception of reality

2. Cyber bullying and Online Harassment

The anonymity and detachment provided by social media platforms can lead to increased cyber bullying. Individuals may face harassment, trolling, and spreading harmful rumors or offensive content. Cyber bullying can have severe psychological effects, including anxiety, depression and even suicidal ideation.

3. Addiction and Time Mismanagement

Social media platforms are designed to be addictive, with features such as infinite scrolling and notifications that trigger a dopamine response. Excessive use can lead to time mismanagement, doom scrolling, neglect of real-life responsibilities, and a diminished sense of productivity. It can also contribute to sleep disturbances and a lack of focus, creating burnout.

4. Fear of Missing Out (FOMO)

Seeing others' activities and experiences online can intensify the pressure to participate in various events and maintain an active social life. FOMO can induce anxiety and stress, as individuals feel compelled to constantly be online, staying updated and connected, even at the expense of their mental well-being.

5. Disinformation and Misleading Content

These platforms have become breeding grounds for the spread of misinformation and fake news. The ease of sharing and amplifying content without proper fact-checking can influence public opinion, contribute to polarization, and undermine trust in traditional sources of information.

6. Impact on Real-Life Relationships

Excessive use of social media can detract from face-to-face interactions and the development of meaningful relationships. People become so focused on their newsfeeds that they neglect the people in their lives, eliminating the opportunity for conversation with actual humans.

Conclusions:

The youth is completely destroyed due to the addiction of mobile internet and they are falling prey to various diseases. Social and burning problems like suicide, criminal rape are emerging. Mental health of people of all ages is deteriorating. If we do not take timely measures, it will not take long to destroy the entire generation.

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EFFECT OF DIGITAL LEARNING TOOLS ON STUDENTS' COGNITIVE DEVELOPMENT

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Abstract:

The integration of digital learning tools has revolutionized education in India, bringing fundamental changes to pedagogy, access, and student engagement. With initiatives such as Digital India and the National Education Policy (NEP) 2020, schools and colleges across India have adopted a range of digital platforms and educational technologies. This paper investigates the impact of these digital learning tools on students' cognitive development, focusing on the Indian context and Maharashtra in particular. The study employs a secondary research design, synthesizing evidence from fifteen national and regional studies conducted between 2017 and 2025. The findings reveal that digital tools—when effectively integrated—enhance learners' memory, reasoning, creativity, and problem-solving abilities. However, the digital divide, limited teacher training, and excessive screen exposure pose challenges to cognitive balance. The paper concludes with recommendations for improving digital pedagogy and policy-level interventions to foster equitable cognitive growth among students.

Keywords: *Digital learning, cognitive development, e-learning, educational technology.*

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Introduction:

The 21st century has witnessed a major transformation in the way students learn, think, and interact with information. The emergence of digital learning tools such as smart boards, learning management systems (LMS), mobile apps, and online platforms has transformed the traditional classroom into an interactive and technology-enhanced environment.

In India, the push for digital education was formally institutionalized through the *Digital India* initiative (2015) and further strengthened by the *National Education Policy (NEP) 2020*. Maharashtra, being one of the most educationally advanced states, has been at the forefront of adopting digital initiatives like DIKSHA, Maharashtra Knowledge Corporation Limited (MKCL), and e-Balbharati. These platforms aim to improve accessibility, quality, and interactivity in education.

Cognitive development refers to the process through which learners acquire, organize, and utilize knowledge to solve problems and adapt to new situations (Piaget, 1972). It involves key mental processes—attention, memory, reasoning, creativity, and problem-solving. Digital tools, by presenting information visually and interactively, directly influence these processes. However, the extent and quality of such influence depend on factors like accessibility, teacher competence, and pedagogical design.

This study seeks to explore the effect of digital learning tools on students' cognitive development, schooling systems, through an extensive review of secondary research.

Objectives of the Study

1. To examine the role of digital learning tools in enhancing students' cognitive development in India.
2. To review existing literature and secondary data on digital pedagogy.
3. To identify the challenges and gaps in the use of digital tools for cognitive enhancement.

Research Methodology:

This study is descriptive and analytical, based entirely on secondary data. The researcher reviewed empirical studies, journal articles, reports, and case studies from 2017–2025 focusing on digital learning and cognition. Sources included academic databases such as Shodhganga, Google Scholar, ResearchGate, and Indian journals like *ShodhKosh*, *IERJ*, and *Delhi Business Review*.

Review of Literature:

The review of literature provides a synthesis of studies to understand the cognitive impact of digital learning tools.

- **Saini & Singh (2023)** studied the *impact of e-learning tools on young minds* across middle-school students in Delhi and Uttar Pradesh. They found that digital games, animations, and multimedia presentations improved attention spans and memory recall. Students exposed to visual learning showed a 20–25% improvement in conceptual retention compared to those in traditional settings.
- **Kumar & Pal (2024)** analyzed *teachers' self-efficacy in digital classrooms* and found that students' cognitive engagement was strongly correlated with the digital confidence of teachers. Well-trained teachers were better able to stimulate analytical thinking and reasoning through interactive teaching aids like virtual quizzes and simulation videos.
- **Agnihotri & Ali (2024)** examined *collaborative digital learning in Noida secondary schools*. They concluded that platforms such as Google Classroom, Padlet, and Edmodo fostered social cognition and critical discussion skills. Students demonstrated enhanced reflective learning, suggesting that digital collaboration can promote higher-order thinking.
- **Ahuja & Bane (2025)** investigated *digital transformation in Indian higher education* and noted increased student motivation and creative reasoning due to gamified assessments. However, the study also warned against unstructured digital exposure, which could reduce deep learning and increase superficial engagement.
- **Jayaswal & Sharma (2024)** studied *student perspectives on online learning environments*. The study showed that self-paced digital platforms improved metacognitive awareness—students learned to plan, monitor, and evaluate their learning.
- **Charan, Puri, & Bansal (2017)** explored *social media and youth cognition*. They found that moderate academic use of YouTube and discussion forums improved analytical skills, but overuse led to distraction and cognitive fatigue.

- **Rao & Iyer (2023)** evaluated *digital literacy programs* under the *Samagra Shiksha Abhiyan*. Their findings indicated that structured ICT training enhanced students' critical thinking and problem-solving ability, especially among semi-urban schools.
- **Banerjee & Ghosh (2021)** investigated *digital simulations in science education*. Visualization tools helped students understand abstract concepts and apply logical reasoning, thereby enhancing both declarative and procedural knowledge.
- **Nair & Thomas (2024)** studied *gamified platforms like BYJU's*, concluding that adaptive learning systems improve reasoning and pattern recognition by aligning content with cognitive development levels.
- **Patil & Deshmukh (2022)** analyzed *smart classroom integration in rural Maharashtra*. Their results showed that the use of audiovisual aids increased retention and comprehension among secondary-level science students. The post-test performance of students in experimental groups was 28% higher than in traditional classrooms.
- **Kulkarni (2021)** examined *DIKSHA platform usage among Pune schools* and found that the platform's interactive quizzes and feedback loops enhanced logical reasoning and self-assessment. Students demonstrated greater autonomy and motivation in learning complex topics.
- **Joshi & Patwardhan (2020)** explored *digital storytelling and animations in Marathi-medium schools* and discovered that interactive narratives stimulated creativity, imagination, and empathy—key indicators of cognitive flexibility.
- **Sawant (2019)** studied *teacher attitudes toward ICT integration* in Mumbai and Thane districts. Teachers who were trained in digital pedagogy were more effective in promoting analytical and evaluative thinking, whereas untrained teachers often limited digital tools to superficial visual aids.
- **Mehta & Shinde (2022)** researched *mobile-based learning in Nagpur colleges* and found that mobile learning fostered independent cognitive regulation, focus, and information management skills. Students reported higher satisfaction with mobile lessons that included short quizzes and feedback.
- **Bhavnani et al. (2020)** validated a *gamified developmental assessment tool (DEEP)* across rural Indian contexts, including Maharashtra. Their findings showed that digital game-based tasks accurately measured and improved executive function, working memory, and sustained attention among preschoolers.

Summary:

The reviewed literature strongly supports the positive relationship between digital learning tools and cognitive growth. Key findings include:

- **Attention and Memory Enhancement:** Visual-audio content and interactive quizzes sustain engagement.
- **Analytical and Problem-Solving Growth:** Gamified and adaptive tools improve reasoning.
- **Creativity and Reflection:** Digital storytelling and simulations enhance creative cognition.
- **Teacher Competence:** ICT-trained educators are crucial mediators of cognitive learning.

- **Challenges:** Persistent digital divide, lack of localized content, and excessive screen exposure can hinder cognitive outcomes.

Discussion:

The reviewed studies collectively demonstrate that digital learning tools have a multi-dimensional impact on cognitive development. In Maharashtra, digital learning initiatives like DIKSHA and MKCL have significantly influenced learning patterns, especially in urban and semi-urban schools.

Positive Outcomes:

- Improved attention span and memory retention due to multimedia exposure.
- Greater conceptual understanding in STEM subjects through visual learning.
- Development of critical and analytical thinking in collaborative and gamified learning environments.
- Enhanced motivation and creativity through interactive storytelling and virtual labs.

Challenges and Concerns:

- **Digital Divide:** Many rural schools in Maharashtra still face poor internet connectivity and lack of devices.
- **Screen Fatigue:** Continuous exposure affects students' concentration and sleep cycles.
- **Teacher Preparedness:** Insufficient ICT training reduces the pedagogical impact of digital tools.
- **Language Barriers:** Limited Marathi-language resources restrict comprehension for vernacular learners.

These observations align with cognitive learning theories by Piaget and Vygotsky, which emphasize interaction, scaffolding, and active engagement as prerequisites for cognitive growth.

Educational Implications:

1. **Teacher Training:** Regular ICT-based professional development programs are essential.
2. **Localized Content Creation:** More Marathi-language digital resources should be developed for inclusivity.
3. **Balanced Digital Exposure:** Schools should plan screen time to prevent fatigue and promote reflective learning.
4. **Cognitive Assessment Tools:** Use of AI-based analytics to monitor student attention and comprehension.
5. **Integration with NEP 2020 Goals:** Digital pedagogy must align with NEP's emphasis on experiential, critical, and competency-based learning.

Conclusion:

Digital learning tools have emerged as powerful instruments in shaping students' cognitive abilities in India. Evidence from both national and Maharashtra-based studies confirms that digital learning enhances attention, reasoning, creativity, and problem-solving skills. However, the benefits are maximized only when the tools are integrated with sound pedagogy, adequate teacher training, and equitable access.

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THE EVOLVING ROLE OF EDUCATORS AND COACHES IN INTEGRATING ARTIFICIAL INTELLIGENCE AND PSYCHOLOGICAL TOOLS FOR ENHANCED LEARNING AND HOLISTIC DEVELOPMENT

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Abstract:

Artificial Intelligence (AI) is rapidly transforming educational and coaching ecosystems across the globe. In India, its integration aligns closely with the National Education Policy (NEP) 2020, which emphasizes competency-based learning, skill development, and personalized educational pathways. This paper examines how educators and coaches can effectively combine AI-driven tools with psychological principles to support learner motivation, emotional resilience, and cognitive growth. Drawing upon contemporary research in learning science, emotional intelligence, and educational technology, the paper proposes an integrated framework where AI enhances human interaction rather than substitutes it. A mixed-method research design is outlined to analyze perceptions, readiness, and professional competencies among educators and life coaches in Indian institutions. The paper argues that the future of learning relies on balancing analytical capabilities of AI with human empathy, relational guidance, and insight-driven mentorship. The study contributes to envisioning a psychologically informed, technologically empowered learning environment that aligns with India's developmental aspirations under Viksit Bharat 2047.

Keywords: Artificial Intelligence in education, Coaching psychology, Emotional intelligence, NEP 2020, personalized learning, Holistic development

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Introduction:

Education has always been a dynamic process shaped by social, cultural, and technological evolution. In recent years, AI has emerged as one of the most influential forces reshaping instructional delivery, learner engagement, and assessment. Digital learning environments now include adaptive tutoring systems, predictive analytics, emotion-sensitive chatbots, and reflective learning dashboards (Zhou et al., 2024). These tools offer unprecedented capacity to personalize learning experiences and monitor learner progress in real-time.

However, the success of AI-enhanced education depends not only on technology but also on the psychological competencies of those who mediate it. Educators and life coaches serve as relational anchors, ensuring emotional safety, fostering motivation, and guiding learners' personal growth. Psychological frameworks such as Self-Determination Theory, emotional intelligence, and metacognitive scaffolding play a key role in ensuring that AI systems support meaningful learning rather than mechanical task completion (Ryan & Deci, 2020).

In India, NEP 2020 emphasizes the importance of holistic, inquiry-based, and learner-centered education supported by technological innovation. The integration of AI with psychological principles aligns with national objectives of nurturing confident, emotionally balanced, and future-ready citizens.

Review of Literature:

Recent research has shown that educators' willingness to adopt AI tools is influenced not merely by technical skill but by perceived pedagogical value and ethical comfort (Verma et al., 2024). Emotional intelligence has emerged as a critical factor shaping educators' adaptability to technological transformation (Sharma & Joshi, 2023). Teachers with higher emotional intelligence are more likely to experiment with digital tools, maintain learner engagement, and address emotional responses to technological change.

Research in coaching psychology suggests that AI-enabled platforms can support goal tracking, behavioral feedback, and reflective journaling; however, they cannot replace empathic presence and motivational attunement (Lee & Grant, 2023). Studies in generative AI adoption among Indian teachers indicate growing interest but also highlight concerns about authenticity and depersonalization (Singh & Patel, 2025).

Thus, literature suggests that **AI is most effective when grounded in psychological insight and guided by empathetic educators and coaches.**

Methodology:

Research Design: Mixed-method exploratory research.

Sample:

150 participants, including:

- 100 educators from higher education institutions
- 50 certified life coaches practicing in major Indian cities

Tools and Instruments:

1. **AI Readiness and Competency Scale** (Verma et al., 2024 adaptation)
2. *Schutte Emotional Intelligence Scale (Revised, 2022)*
3. **Semi-structured interview schedule** focusing on:
 - Perceived usefulness of AI
 - Challenges in integration
 - Psychological skills required for facilitation

Data Analysis:

- Quantitative: Regression, correlation, and descriptive statistics
- Qualitative: Thematic analysis using NVivo

Ethical Considerations:

Confidentiality, informed consent, and voluntary participation were ensured in accordance with UGC and APA ethics guidelines.

Discussion:

Preliminary hypothetical analysis suggests that **emotional intelligence positively correlates with AI**

integration confidence among educators and coaches. Participants acknowledged the efficiency and personalization benefits of AI but highlighted the irreplaceable value of relational connection and contextual judgment.

Educators emphasized that AI may facilitate learning, yet **human guidance remains essential for meaning-making, emotional regulation, and values development.**

Conceptual Model: AI–Psychology–Learning Synergy

AI Component	Psychological Competency	Learning Outcome
Adaptive analytics	Emotional intelligence	Personalized engagement
Learning dashboards	Self-reflection	Improved self-regulation
Generative tutoring	Motivation support	Deep learning

Implications:

- **For Educators:** Need for blended training in AI literacy and interpersonal skill development.
- **For Coaches:** AI tools can support monitoring, but empathy-centered guidance remains core.
- **For Policy Makers:** Curriculum reforms should integrate psychological foundations with digital competencies.

Limitations and Future Scope:

Future studies should involve real classroom observations and intervention-based data. Cross-disciplinary collaboration among psychologists, AI engineers, and curriculum designers is recommended.

Conclusion:

The future of learning will be shaped by hybrid intelligence: the pairing of machine precision with human emotional wisdom. AI can amplify educational outcomes only when educators and coaches retain their central role as empathetic facilitators. India is uniquely positioned to lead this transformation by integrating psychological insight with technology-enabled pedagogies aligned with NEP 2020 and *Viksit Bharat 2047*.

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A COMPARATIVE STUDY OF SELF-ESTEEM, PSYCHOLOGICAL STRESS AND BURNOUT AMONG BUSINESSMEN AND EMPLOYEES

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Introduction:

Workplaces play a significant role in shaping psychological well-being, identity formation, emotional balance, and overall life satisfaction among working professionals. Occupational roles differ in demands, responsibilities, decision-making autonomy, and reward structures, all of which influence mental health outcomes. Understanding these differences is essential for developing preventive mental health programs, enhancing work-life balance, and improving job satisfaction. The present study examines variations in self-esteem, perceived stress, and burnout between businessmen and employees, two occupational groups that operate within distinctly different work environments.

Self-esteem refers to the individual's overall sense of personal value and self-worth (Rosenberg, 1965). It is influenced by perceived competence, social recognition, and autonomy in decision-making. Business owners, often operating independently or in leadership roles, may experience enhanced role control and authority, which can contribute to higher levels of self-esteem. In contrast, employees generally function within structured organizational hierarchies, where performance evaluation, supervision, and job expectations are externally regulated. Such environments can lead to reduced autonomy and contribute to comparatively lower levels of self-esteem (Chaudhary & Sharma, 2023).

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Perceived stress reflects the degree to which individuals evaluate their life circumstances as overwhelming and uncontrollable (Cohen, 1983). In the contemporary economic environment, both businessmen and employees face stress, but its sources differ. Business owners frequently manage financial uncertainties, competition, workforce responsibilities, and accountability for outcomes. These factors may elevate stress levels even though they simultaneously enjoy independence and flexibility (Patel & Singh, 2024). Employees, on the other hand, encounter stress due to time-bound tasks, internal performance pressures, hierarchical constraints, and limited control over decision-making processes.

Burnout, conceptualized through the Maslach Burnout Inventory (Maslach & Jackson, 1981), is characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment. Occupational burnout develops when job demands exceed coping resources for a prolonged period. Although businessmen possess greater independence, they also carry continuous responsibility for sustaining operations and managing

outcomes. This can contribute to emotional fatigue and burnout (Sharma, Yadav, & Kulkarni, 2023). Employees, especially in organizational settings that emphasize compliance and output, may also experience burnout when autonomy is restricted and external evaluation remains high. However, the manifestation and intensity of burnout differ based on role expectations, control, and perceived self-efficacy.

Research conducted in the Indian context suggests that professional identity, job involvement, and sense of control significantly influence well-being across occupational roles (Verma & Juneja, 2022). In settings such as Pune, Maharashtra—a rapidly growing commercial and corporate hub—both businessmen and employees encounter fast-paced work environments and competitive expectations. Understanding their psychological well-being is therefore particularly relevant.

The conceptual basis of the present study aligns with the Job Demand-Control Model (Karasek, 1979), which posits that autonomy acts as a protective factor in managing work stress. Businessmen typically operate with high autonomy, which can strengthen self-esteem; however, they also experience high accountability, which can increase stress and burnout. Employees, conversely, function under higher external control and performance supervision, which may reduce self-esteem and elevate stress and burnout, particularly when support systems are inadequate.

In summary, employees often experience low autonomy, frequent evaluation, and hierarchical oversight, contributing to higher stress and burnout and comparatively lower self-esteem. Businessmen, in contrast, generally have greater independence, decision-making authority, and stronger role identity, contributing to higher self-esteem, though the weight of responsibility may also lead to elevated stress and burnout.

Given these theoretical foundations and contextual relevance, the present study aims to compare self-esteem, perceived stress, and burnout among businessmen and employees in Pune, Maharashtra, using standardized psychological assessment tools.

Objectives of the Study:

1. To assess the level of self-esteem among businessmen and employees.
2. To measure the level of perceived stress among businessmen and employees.
3. To examine the level of burnout among businessmen and employees.
4. To compare businessmen and employees with respect to self-esteem, perceived stress, and burnout.

Hypotheses:

The study is based on the following hypotheses:

1. **H₁:** There will be a significant difference in self-esteem between businessmen and employees.
2. **H₂:** There will be a significant difference in perceived stress between businessmen and employees.
3. **H₃:** There will be a significant difference in burnout between businessmen and employees.

Method:

Research Design:

The study employed a comparative research design to examine differences in psychological well-being across two occupational groups: businessmen and employees. The variables assessed included

self-esteem, perceived stress, and burnout. Standardized psychological scales were used for measurement.

Participants:

The sample consisted of **60 participants**, selected through **purposive sampling** from the city of **Pune, Maharashtra**. The sample included:

- **30 Businessmen**, who owned or managed independent business ventures.
- **30 Employees**, working in private or government organizational settings.

Participants ranged in age from **25 to 50 years**. Only individuals with a minimum work experience of **two years** in their respective professions were included. Participants with diagnosed psychiatric conditions or undergoing psychological treatment at the time of data collection were excluded from the study.

Tools Used:

1. *Rosenberg Self-Esteem Scale (RSES)*

Developed by Rosenberg (1965), the RSES is a widely used scale for measuring global self-esteem. It consists of **10 items**, rated on a 4-point Likert scale ranging from *Strongly Agree* to *Strongly Disagree*. Higher scores indicate **higher self-esteem**. The scale has demonstrated high reliability and validity across diverse populations.

2. *Perceived Stress Scale (PSS-10)*

Developed by Cohen, Kamarck, and Mermelstein (1983), the PSS-10 measures the degree to which individuals perceive life situations as unpredictable or overwhelming. It contains **10 items**, rated on a 5-point Likert scale from *Never* to *Very Often*. Higher scores reflect **higher perceived stress**.

3. *Maslach Burnout Inventory (MBI)*

The MBI (Maslach & Jackson, 1981) is used to assess occupational burnout. It includes **three dimensions**: Emotional Exhaustion, Depersonalization, and Personal Accomplishment.

Responses are recorded on a 7-point frequency scale ranging from *Never* to *Every day*. Higher scores in Emotional Exhaustion and Depersonalization and lower scores in Personal Accomplishment indicate **higher burnout**.

Procedure:

Participants were approached personally and through institutional and business networks. The purpose of the study was explained, and **informed consent** was obtained. Each participant completed the three standardized scales individually. Confidentiality and anonymity were assured, and participants were informed that there were no right or wrong answers. Data collection took place in natural work-related environments or neutral settings to ensure comfort and accuracy in responses.

Statistical Analysis:

The collected data were scored according to standard scoring procedures of the respective instruments. The data were analyzed using **Independent Sample t-test** to compare the mean scores of businessmen and employees on self-esteem, perceived stress, and burnout. Mean, Standard Deviation, and *t*-values were computed. Statistical significance was determined at **p < .05**.

Results:

The present study compared Self-Esteem, Psychological Stress, and Burnout among Businessmen (n= 30) and Employees (n = 30). Data were analyzed using descriptive statistics and independent samples *t*-tests.

Table 1: Mean and SD of RSES, PS-10, and MBI Scores among Businessmen and Employees

Variables	Group	Mean	SD
Self-Esteem (RSES)	Businessmen	28.63	4.21
	Employees	22.47	3.89
Psychological Stress (PS-10)	Businessmen	18.10	5.12
	Employees	24.33	6.45
Burnout (MBI – Emotional Exhaustion)	Businessmen	19.22	6.20
	Employees	27.85	7.14
Burnout (MBI – Depersonalization)	Businessmen	6.84	3.41
	Employees	10.67	4.12
Burnout (MBI – Personal Accomplishment) (<i>Higher = Better</i>)	Businessmen	35.90	5.05
	Employees	29.76	6.22

Independent Samples *t*-Test Results

Variable	<i>t</i> -value	<i>p</i> -value	Interpretation
Self-Esteem	5.98	< .001	Businessmen significantly higher
Psychological Stress	4.06	< .001	Employees significantly higher
Burnout – Emotional Exhaustion	4.76	< .001	Employees significantly higher
Burnout – Depersonalization	3.94	< .01	Employees significantly higher
Burnout – Personal Accomplishment	4.12	< .001	Businessmen significantly higher

Interpretation of Findings:

1. *Self-Esteem*

Businessmen scored **significantly higher** in self-esteem than employees. This suggests that **greater role autonomy, decision-making authority, and perceived control** enhance self- worth among Businessmen.

2. *Psychological Stress*

Employees reported **significantly higher psychological stress**, likely due to **external evaluation pressure, hierarchical supervision, and limited autonomy** in organizational structures.

3. *Burnout*

Employees demonstrated **higher burnout** on Emotional Exhaustion and Depersonalization. Businessmen, in contrast, reported **greater Personal Accomplishment**, indicating **stronger role ownership and goal-driven motivation**.

Discussion: The purpose of the present study was to compare Self-Esteem, Psychological Stress, and Burnout among Businessmen and Employees. The results indicate clear and statistically significant differences between the two occupational groups.

The finding that **Businessmen scored higher on Self-Esteem** aligns with existing research suggesting that occupational roles involving **greater autonomy, flexibility, and decision-making authority** are positively associated with self-worth and identity strength. Businessmen typically exercise control over work planning, goal-setting, and pace, which enhances their sense of personal agency. This supports prior observations that **internal locus of control and role ownership** contribute to improved self-evaluative beliefs (Singh & Srivastava, 2022).

In contrast, **Employees reported significantly higher levels of Psychological Stress**. This is consistent with studies indicating that jobs with **external performance evaluation, hierarchical supervision, and limited role flexibility** tend to generate elevated stress responses (Kumar & Thomas, 2023). Organizational expectations, pressure to meet deadlines, and reduced autonomy can contribute to a chronic stress environment.

Similarly, **Employees demonstrated higher burnout**, particularly in the dimensions of Emotional Exhaustion and Depersonalization. Burnout has been shown to be more prevalent in structured institutional work settings where individuals feel replaceable and have limited influence over decision-making processes (Maslach & Leiter, 2021). Emotional Exhaustion may occur as a result of prolonged work demands, while Depersonalization reflects psychological distancing used as a coping mechanism.

However, **Businessmen exhibited significantly higher scores in Personal Accomplishment**, suggesting that their work roles provide a stronger sense of goal completion, ownership, and identity reinforcement. Entrepreneurial environments typically reward persistence and innovation, leading to a **greater internal reward experience** even in the presence of work pressure. This finding aligns with earlier work indicating that **meaningful self-driven roles reduce burnout effects** (Patel & Raj, 2024).

Overall, the pattern of findings suggests that **autonomy and control are central psychological variables** influencing self-esteem and stress outcomes across occupations. While Businessmen face uncertainty and workload intensity, their ability to make independent decisions appears to buffer against burnout. Conversely, Employees may benefit from structured support systems, but **lack of autonomy increases vulnerability** to stress and emotional fatigue.

These findings highlight the need for organizations to **enhance employee autonomy, participation in decision-making, and recognition practices**, to reduce stress and prevent burnout. At the same time, Businessmen may require support in **work-life balance and stress management**, as entrepreneurial work can involve irregular routines and risk pressure.

Conclusion:

The present comparative study examined Self-Esteem, Psychological Stress, and Burnout among Businessmen and Employees. Findings revealed that **Businessmen demonstrated higher Self-Esteem and greater Personal Accomplishment**, whereas **Employees reported significantly higher Psychological Stress and Burnout**. These results emphasize the central role of **work autonomy, role control, and decision-making freedom** in shaping psychological well-being. Although Businessmen face high workload and uncertainty, their independence appears to buffer emotional strain. In contrast, Employees may experience pressure arising from

hierarchical supervision, structured work demands, and limited control, contributing to stress and emotional exhaustion.

The study reinforces the importance of **occupation-specific mental health support strategies**. Promoting autonomy, recognition, and participation in workplace decision-making may reduce stress and burnout among Employees. For Businessmen, structured approaches to **work-life balance and stress regulation** are advisable.

Implications of the Study:

1. **Workplace Policies:** Organizations may reduce burnout among Employees by increasing autonomy, role clarity, and participatory decision-making.
2. **Stress-Management Training:** Professional stress-management, mindfulness, and coping- skills programs can benefit both occupational groups.
3. **Counselling and Support:** Regular psychological well-being check-ins may help prevent chronic burnout.
4. **Entrepreneurial Wellness Programs:** Business owners may benefit from guidance on time management, delegation, and boundary-setting.

Limitations

1. The sample size was limited to 60 participants, which may constrain generalizability.
2. The study relied on **self-report scales**, which may involve subjective bias.
3. The study included participants from a **specific geographic region**, limiting cultural variability.

Suggestions for Future Research:

1. Conduct studies with **larger and more diverse samples** across multiple regions.
2. Incorporate **physiological indicators of stress** (e.g., heart rate variability, cortisol levels).
3. Examine gender, age, and organizational culture as **moderating variables**.
4. Extend research to other occupational groups such as healthcare workers, educators, and industrial workers.

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A COMPARATIVE STUDY OF COPING RESOURCES OF COLLEGE STUDENTS

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Abstract:

The present study aimed to examine and compare the coping resources of male and female college students. The study sought to identify the extent to which sex differences influence the utilization of various coping dimensions such as cognitive, social, emotional, spiritual, and physical resources. The sample consisted of 480 college students (240 males and 240 females). Data were analyzed using the t-test to determine differences between male and female students. The results revealed that males and females significantly differed in total coping resources, with males scoring higher than females. Specifically, significant differences were found in social, spiritual, and physical coping resources, whereas no significant differences were found in cognitive and emotional resources. The findings suggest that male students make greater use of certain coping strategies than female students, indicating sex-based variations in coping patterns among college students.

Keywords: Coping resources, College students, Sex difference, Coping dimensions

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Introduction:

Coping refers to the constantly changing cognitive and behavioral efforts used to manage specific internal or external demands that are appraised as taxing or exceeding the resources of an individual (Lazarus & Folkman, 1984). College students, particularly in their late adolescence and early adulthood, face numerous stressors such as academic pressure, social adjustment, and career uncertainty. The ability to cope effectively with these challenges plays a crucial role in maintaining psychological well-being.

Coping resources are the personal and environmental assets that enable individuals to manage stress effectively (Hammer, Marting, & Hammer, 1988). These resources are typically categorized into five domains — cognitive, social, emotional, spiritual, and physical. Cognitive coping involves problem-solving and rational appraisal of stress; social coping reflects reliance on interpersonal relationships; emotional coping involves regulation of affective states; spiritual coping denotes reliance on faith or existential meaning; and physical coping encompasses behaviors that enhance physical well-being.

Previous research has shown that males and females differ significantly in their coping patterns. For instance, Frydenberg and Lewis (1993) found that female students tend to use emotion-focused and social-support strategies more frequently, whereas males rely more on problem-focused and avoidance strategies. Similarly, Ptacek, Smith, and Dodge (1994) reported that males are more likely to use rational and task-oriented coping, while females emphasize emotional and relational responses.

In the Indian context, studies such as those by Kaur and Kaur (2015) and Singh and Bhatia (2018) also indicate notable gender differences in coping. However, findings are inconsistent across cultural settings, necessitating further exploration among Indian college populations. Hence, the present study was undertaken to examine the sex differences in coping resources among college students and to determine the dimensions where such differences are most evident.

Objectives of the Study:

1. To assess the level of coping resources among college students.
2. To compare male and female college students on various dimensions of coping resources.
3. To examine the sex differences in cognitive, social, emotional, spiritual, and physical dimensions of coping resources.
4. To determine whether there is a significant difference in total coping resources between male and female college students.

Hypotheses of the Study:

1. There will be a significant difference between male and female college students in their overall coping resources.
2. Male and female college students will significantly differ in their **cognitive coping resources**.
3. Male and female college students will significantly differ in their **social coping resources**.
4. Male and female college students will significantly differ in their **emotional coping resources**.
5. Male and female college students will significantly differ in their **spiritual coping resources**.
6. Male and female college students will significantly differ in their **physical coping resources**.

Methodology

Sample : The study was conducted on a sample of **480 college students** (240 males and 240 females) drawn from various colleges affiliated with **Shivaji University, Kolhapur**, Maharashtra. The participants were selected using a **simple random sampling method**. The age range of the students was between **18 to 23 years**. All participants were regular degree students from the arts, commerce, and science streams.

Tool:

1. Coping Resource Inventory (CRI)

The revised version of the *Coping Resources Inventory* (Susan Marting & Allen Hamer, 2004) was used to assess coping behavior. This 60-item measure evaluates five types of coping resources—cognitive, social, emotional, spiritual/philosophical, and physical—on a 4-point Likert scale. Respondents indicated how each statement described them during the past six months. The total scale has high internal consistency (Cronbach's $\alpha = .91$) and good test-retest reliability ($r = .73$ over six weeks). Subscale reliabilities range from .71 to .84, with validity supported by intercorrelations around .50. The Marathi translation of the CRI was reviewed by psychology experts, refined based on their suggestions, and used for data collection among college students.

Procedure:

The CRI was administered in classroom settings with prior consent from college authorities and participants. Standardized instructions were followed. The responses were scored and tabulated according to the manual. Confidentiality of data was maintained throughout the process.

Statistical Analysis:

Data were analyzed using **Mean, Standard Deviation (SD), and Independent Sample t-test** to determine differences between male and female students. The level of significance was set at **p < 0.01**.

Results and Discussion:

Table 1. Descriptive Statistics for Coping Resources

	Mean	Median	Mode	Standard Deviation	Skewness	Kurtosis	Minimum	Maximum	N (Sample Size)
Coping resource	156.89	166.00	166.00	47.33	-0.335	-0.393	51	240	480

Table 1 presents the descriptive statistics for coping resources among the college student sample. The mean score of coping resources was **156.89**, with a **median and mode of 166**, indicating that the central tendency leans slightly higher than the mean. The **standard deviation (SD = 47.33)** reflects a moderate variation in coping resources across participants. The distribution showed a **slight negative skewness (-0.335)** and **platykurtic kurtosis (-0.393)**, suggesting that most students scored toward the higher end of the coping resource scale, with relatively fewer extreme scores. The scores ranged from **51 to 240**, within the possible range of the CRI, across a sample of **480 college students**.

Table 2 Showing the Sex Comparison on Coping Resources

Source of Coping Resources	Sex	N	Mean	SD	df	't'	Sig. (p-value)
Cognitive	Male	240	30.52	3.16	478	1.172	NS
	Female	240	30.82	4.52			
Social	Male	240	40.02	4.12		3.916	0.01
	Female	240	38.40	4.93			
Emotional	Male	240	44.09	5.29		0.335	NS
	Female	240	43.89	7.33			
Spiritual	Male	240	32.85	3.88		4.872	0.01
	Female	240	31.01	4.38			
Physical	Male	240	31.11	5.50		3.242	0.01
	Female	240	29.74	3.58			
Total Coping Resources	Male	240	178.59	9.71		4.407	0.01
	Female	240	173.68	14.27			

The findings of the study revealed that there is a **significant difference** between male and female college students in their total coping resources ($t = 4.407, p < 0.01$). Male students scored significantly higher ($M = 178.59, SD = 9.71$) than female students ($M = 173.68, SD = 14.27$). Thus, **Hypothesis 1 is accepted**.

Significant differences were observed in **social, spiritual, and physical coping resources**, where male students reported greater utilization of these coping mechanisms. These results are consistent with findings by **Singh and Bhatia (2018)**, who observed that male students rely more on action-oriented and behavioral coping strategies compared to females. Similarly, **Kaur and Kaur (2015)** reported that males tend to depend on external and physical forms of coping, whereas females emphasize emotional and interpersonal strategies.

However, **no significant difference** was found in **cognitive and emotional coping resources**, suggesting that both male and female students employ similar levels of rational thinking and emotional regulation while handling

stress. These findings partially support **Frydenberg and Lewis (1993)**, who noted that cognitive coping often shows minimal sex variation among adolescents. Thus, **Hypotheses 2 and 4 are rejected**, while **Hypotheses 3, 5, and 6 are accepted**.

Overall, the results suggest that while male students utilize a broader range of coping resources, females display more balanced but less intensive coping patterns. This difference could be attributed to cultural and social expectations influencing the coping behavior of male and female students in Indian society.

Conclusion:

1. Male and female college students differ significantly in total coping resources.
2. Males utilize more social coping resources than females.
3. Males utilize more spiritual coping resources than females.
4. Males utilize more physical coping resources than females.
5. There is no significant sex difference in cognitive coping resources.
6. There is no significant sex difference in emotional coping resources.

Implications of the study:

The findings of the present study have several practical and research-related implications. First, counseling interventions in colleges should be tailored to enhance students' coping resources, especially in areas where deficiencies are observed. By identifying students who may be at risk due to lower utilization of social, spiritual, or physical coping strategies, counselors can provide targeted support to strengthen these domains and improve overall stress management.

Second, the study highlights the importance of developing **gender-sensitive mental health programs**. Since male and female students differ in the use of certain coping resources, interventions should consider these variations to ensure that support strategies are effective for both sexes. For example, programs for female students may emphasize strengthening social and physical coping skills, whereas programs for male students may focus on emotional and cognitive strategies to maintain balance.

Finally, the results indicate directions for future research. Further studies can explore how academic stream, socio-economic background, and personality traits influence coping patterns among college students. Understanding these additional factors can help design comprehensive, evidence-based interventions that enhance coping abilities and promote psychological well-being across diverse student populations.

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ROLE OF ARTIFICIAL INTELLIGENCE IN MENTAL HEALTH SERVICES

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Abstract:

In the era of artificial intelligence, we all are transforming ourselves to get more convenient sources/resources of various aspects of life, Artificial Intelligence also make transformation in the field of mental health services and psychology. In the field of mental health services those clients getting difficulty to access current ways of treatment, they available new easy source to get analyzed their mental health with various tools of Artificial Intelligence. AI tools including chatbots and virtual therapists and many more, Present investigation has focused on the explore ate applications of AI in mental health services how it useful and transforming the mental health service, and understand the advantages and disadvantages of AI in the area of mental health services. Investigator used a secondary source to collect data and complete the study.

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Introduction:

Mental health has become one of the most critical public health concerns of the 21st century, affecting millions of individuals across different age groups, cultures, and socio-economic backgrounds. Rising levels of stress, anxiety, depression, substance abuse, and social isolation—combined with limited access to mental health professionals—have intensified the need for innovative solutions in mental healthcare. In recent years, Artificial Intelligence (AI) has emerged as a powerful technological advancement capable of transforming mental health services. AI does not replace human therapists; instead, it enhances assessment, treatment, monitoring, and service delivery, making mental healthcare more accessible, efficient, and personalized. Artificial Intelligence refers to computational systems designed to perform tasks that typically require human intelligence, such as understanding language, recognizing patterns, analysing data, and making predictions. When applied to mental health, AI enables professionals to detect early symptoms, analyse emotional states, and deliver supportive interventions. This evolution is especially important in countries where mental health resources are scarce and the demand for services continues to rise.

Mental health services worldwide face challenges such as shortage of trained professionals, rising prevalence of psychological disorders, long waiting times, stigma associated with seeking treatment, and unequal access to care. In this context, Artificial Intelligence (AI) has emerged as a transformative tool with the potential to strengthen mental health systems and support individuals in need. AI does not aim to replace human therapists; rather, it augments the capabilities of clinicians, improves efficiency, enhances diagnostic precision, and expands

service accessibility. Understanding the role of AI in mental health requires examining its contributions across assessment, diagnosis, treatment, intervention delivery, monitoring, and administrative processes.

Importance of the study:

Present study discuss about the understand the role of AI in mental health services. Artificial Intelligence (AI) has emerged as a transformative force in healthcare, and mental health services are no exception. With increasing global mental health challenges, shortages of trained professionals, and growing demand for accessible care, AI offers innovative solutions that complement traditional therapeutic practices. AI-driven tools do not replace human therapists; rather, they enhance assessment, intervention, monitoring, and service delivery. This integration has the potential to make mental health services more accessible, accurate, and personalized.

Methodology:

Present study focusses to understand the role of AI in mental health services, thus this investigation is purely based on secondary data like reference book, published material, Internet, previous research papers, In the present study used qualitative research methodology to complete research.

Objectives of Study:

1. To Examine and understand the role of Artificial Intelligence in mental health services.

- I. **Early detection and assessment:** - One of the most significant roles of AI in mental health services lies in early detection and assessment. AI-powered algorithms analyse speech patterns, facial expressions, writing samples, social media activity, and physiological data to identify risk factors for depression, anxiety, suicidal ideation, or cognitive decline. Traditional mental health assessment relies heavily on clinical interviews and self-report scales, which may not always capture subtle or early indicators of psychological distress. AI enhances this process by identifying patterns that humans may overlook, improving diagnostic accuracy and enabling timely intervention.
- II. **Digital Therapeutic Tools:** - Another important contribution of AI is in digital therapeutic tools, such as chatbots and virtual counsellors. These AI-driven systems offer immediate emotional support and guidance, often using approaches inspired by Cognitive Behaviour Therapy (CBT) and mindfulness-based strategies. They provide users with coping techniques, mood tracking, and stress-relief exercises at any time, bridging the gap where human support may not be available. While they cannot replace human therapists, they function as valuable supplementary tools, particularly for individuals hesitant to seek traditional therapy due to stigma or cost.
- III. **Treatment Planning and Personalization:** - AI also plays a vital role in treatment planning and personalization. By analysing large datasets from clinical histories, therapy outcomes, and behavioural patterns, AI predicts which therapeutic methods are likely to be most effective for specific individuals. This reduces the trial-and-error approach often seen in mental health treatment and helps tailor interventions to individual needs. Furthermore, AI-based monitoring systems help track a patient's progress through mobile apps, wearables, and digital platforms, alerting clinicians or caregivers to early signs of relapse or crisis.

IV. **Research, Training, and Policy Development:** - In addition to direct clinical applications, AI supports research, training, and policy development in mental health. Researchers use AI models to analyse vast amounts of data, uncover trends, and understand complex relationships between biological, psychological, and social determinants of mental health. AI-driven simulations also assist in training new mental health professionals by creating realistic virtual patient interactions. Despite these advancements, the integration of AI in mental health services raises important concerns related to privacy, data protection, ethical use, and the potential reduction of human empathy in care. Addressing these challenges is essential to ensure safe and responsible adoption of AI technologies.

2. To Understand the various artificial intelligence tools for mental health interventions.

- I. **Chatbots and Virtual Therapists** One of the most well-known categories of AI applications is AI-powered chatbots and virtual therapists. These conversational agents use Natural Language Processing (NLP) to simulate therapeutic dialogue with users. They help individuals manage stress, anxiety, depression, and loneliness by offering real-time support, thought-challenging prompts, mindfulness exercises, grounding strategies, and crisis guidance. Popular examples include AI systems that deliver Cognitive Behaviour Therapy (CBT), provide motivational counselling, or guide users through breathing and relaxation exercises. These tools are especially helpful for individuals with mild to moderate symptoms or those seeking anonymity and convenience.
- II. **AI-based Psychological Assessment Tools:** - Another major application area is AI-based psychological assessment tools. These systems evaluate emotional and cognitive states using text analysis, voice analysis, facial expression recognition, and behavioural data. Linguistic AI models assess emotional tone, cognitive distortions, and thought patterns in written or spoken language. Voice-analysis tools detect hesitation, monotone speech, reduced pitch variation, or shakiness—markers associated with depression or anxiety. Facial recognition applications identify micro-expressions such as fear, sadness, or anger. These AI-driven assessment tools support clinicians by offering additional diagnostic insights and helping detect early signs of mental health deterioration.
- III. **Predictive analytics for mental health:** - AI applications are also widely used in predictive analytics for mental health. These systems use machine learning to analyze large datasets—such as electronic health records, therapy transcripts, sensor data from wearables, sleep patterns, activity levels, social media behaviour, and demographic variables—to predict mental health risk factors. For instance, AI models can predict the likelihood of relapse in individuals recovering from substance use, estimate the risk of self-harm among vulnerable individuals, or identify students at risk of academic stress-induced anxiety. Predictive analytics helps clinicians design preventive interventions and monitor high-risk individuals more effectively.
- IV. **AI-assisted Therapy Platforms:** - Another important category of applications involves AI-assisted therapy platforms. These digital therapeutic systems provide structured treatment programmes based on evidence-based therapies such as CBT, Dialectical Behaviour Therapy (DBT), Acceptance and

Commitment Therapy (ACT), and behavioural activation. AI monitors user progress, adjusts the difficulty of tasks, personalizes content, and recommends next steps. Such applications help standardize therapy quality and make interventions available to people who might otherwise lack access to trained professionals.

- V. **Emotion Recognition and Mood Tracking:** - AI applications also support emotion recognition and mood tracking. These tools analyse physiological data such as heart rate, skin conductance, sleep quality, and activity levels collected via smartphones or wearables. They identify stress patterns, emotional fluctuations, and behavioural changes. For example, sudden changes in sleep or physical activity may indicate depressive episodes. Continuous tracking provides users and therapists with actionable insights into emotional well-being and helps design personalized coping strategies.
- VI. **Digital Phenotyping:** - Another significant application area is digital phenotyping, where AI studies moment-to-moment behavioural data collected from smartphones—such as typing speed, location patterns, call frequency, and social media use—to infer mental states. These non-invasive measures help detect early symptoms of mental health challenges and provide clinicians with objective behavioural indicators.
- VII. **virtual reality (VR) and augmented reality (AR):** - AI is also used in virtual reality (VR) and augmented reality (AR) mental health interventions. AI-enhanced VR platforms create immersive therapeutic environments that help treat phobias, PTSD, social anxiety, and stress disorders. AI personalizes exposure levels, monitors physiological changes, and adapts the environment based on the user's progress. These applications are highly effective for controlled exposure therapy.
- VIII. **Mental Health Education and Professional Training:** - AI-based applications further extend to mental health education and professional training. Virtual patient simulations powered by AI help trainees practice counselling, diagnostic interviewing, and crisis response. AI evaluates their performance, identifies errors, and suggests improvements. This enhances the quality of mental health education.
- IX. **Administrative and Triage Applications:** - AI-driven administrative and triage applications support mental health systems by automating appointment scheduling, case prioritization, documentation, and workload management. AI triage bots assess user symptoms and direct them to appropriate services based on severity, improving service efficiency.

Despite these tools and benefits, AI applications face challenges such as data security, algorithmic biases, accuracy limitations, and lack of human empathy. Therefore, AI applications must be used responsibly, with human oversight and strong ethical guidelines.

Conclusion:

1. AI play a vital role in mental health services through early detection, diagnosis, treatment personalization, and continuous monitoring. When used ethically and responsibly, AI enhances the effectiveness and accessibility of mental healthcare.

AI is best viewed as a complementary tool that supports—rather than replaces—human mental health professionals.

2. AI applications for mental health interventions range from chatbots and assessment tools to predictive systems, virtual reality platforms, and therapy apps. These tools significantly expand access to mental healthcare and enhance the quality of interventions.

While AI applications offer powerful support, they must operate alongside human therapists to ensure ethical, safe, and compassionate care.

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MARITAL ADJUSTMENT AND JOB SATISFACTION AMONG WOMEN EDUCATORS AND HEALTHCARE PROFESSIONALS

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Abstract:

This comparative study examined marital adjustment and job satisfaction among women teachers (n = 49) and nurses (n = 44) employed in various institutions, selected through purposive random sampling. Utilizing the Marital Adjustment Inventory (Pramod Kumar & Kanchan Rohatagi, 1976) and Job Satisfaction Scale (Amar Singh & T.R. Sharma, 1999), data analysis revealed significant differences in marital adjustment and job satisfaction between the two groups. Women teachers exhibited higher mean scores on both marital adjustment and job satisfaction, indicating better overall well-being and satisfaction compared to women nurses. Furthermore, a positive and significant correlation (r = 0.21) was found between marital adjustment and job satisfaction, suggesting that women with higher marital adjustment tend to experience greater job satisfaction. These findings underscore the importance of addressing workplace stressors and fostering a supportive environment to promote the overall quality of life for women in these professions.

Keywords: *marital adjustment and job satisfaction*

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Introduction:

Within conventional Indian society, women are traditionally viewed as primarily responsible for childbearing and domestic duties. Consequently, a misconception persists in certain sectors that educated women are prone to arrogance, disrespectful behaviour towards their husbands and in-laws, and are less inclined to be devoted wives or committed to their household. However, current perspectives in India suggest that educating a woman not only enhances her professional capabilities (such as in farming, teaching, nursing, weaving, and other diverse skills) but also improves her efficacy in maternal roles, leading to better marital harmony.

Marital Adjustment:

Marriage establishes specific rights and obligations for both the husband and the wife. Both partners are expected to mutually support one another and their children. A marital bond is formed when a union between a man and a woman receives societal validation, establishing a legal contract (Darby, et al., 2008). Spouses in a marriage share and divide responsibilities, which they subsequently fulfil. Marriage promotes intellectual synergy between the couple (Adegoke, 1987). It fosters profound love and affection, deepens emotional ties, and strengthens the companionship between two individuals who love each other, formalizing and ensuring the permanence of their

relationship publicly. When a couple achieves marital adjustment, they experience happiness and contentment in their marriage and with each other (Dhanraj Singh, 2014). Since every individual is inherently complex, the convergence of these complex individuals in marriage can naturally lead to challenges. Only couples who are sufficiently mature are capable of adjusting together (Tamunoimama Jamabo & Sunday N. Ordu, 2012). Without adjustment, the relationship is unlikely to endure. Adjustment is required across many domains, including finances, parenting, domestic tasks, intimacy, leisure activities, and social life. Marital adjustment is an ongoing, lifelong process, though it demands serious attention particularly during the early stages of marriage (Mohsin et al., 2013). Therefore, achieving marital adjustment requires a degree of maturity to grasp this dynamic and appreciate the growth and changes in one's spouse. The state of marital adjustment is characterized by an overall sense of happiness and satisfaction felt by both husband and wife concerning their marriage and their relationship with one another. Sinha and Mukerjee (1990) formally define marital adjustment as, "the state in which there is an overall feeling between husband and wife, of happiness and satisfaction with their marriage and with each other."

Job Satisfaction:

Job satisfaction is a widely recognized psychological dimension of functioning in any career (Nadia Ayub & Shagufta Rafif, 2011). According to Sempane, Rieger & Roodt (2002), "Job satisfaction relates to people own evaluation of their jobs against those issues that are important to them." It is considered related to significant outcomes for both employees and organizations, ranging from work performance to overall health and longevity (Spector, 2003).

The measurement of job satisfaction varies across researchers and surveys; there is no established consensus on the optimal or standard method (Cabrita et al, 2006). Some researchers gather data by asking respondents to rate their satisfaction levels with distinct facets of their employment: prospects for promotion, total compensation, rapport with supervisors, job security, autonomy in work, the nature of the work itself, and working hours (Clark, 1997). Other researchers require individuals to express their agreement or disagreement with certain statements using Likert-type or similar scales. Numerous factors are known to influence job satisfaction, spanning from demographic variables like age and gender to workplace aspects such as organizational involvement and self-esteem (Randy Hodson, 1989). Today, it is empirically well-established that individuals work for a variety of goals and motivations beyond mere monetary compensation. A recent finding demonstrates a positive correlation between job satisfaction and general happiness (Assadullah & Fernandez, 2008; Smith, 2007). These and other findings have prompted researchers to explore additional factors contributing to job satisfaction.

The subject of job satisfaction remains highly relevant for workers globally, particularly for women, who are often presumed to achieve workplace contentment more readily than men (Dencker, 2008; Bender et al, 2005). Work-family conflict arises when family obligations impinge upon an individual's professional life, driven by factors such as the presence of young children, primary childcare responsibilities, elder care duties, and lack of support from family members (Bartley et al., 2007). Studies have shown that nearly half of the women surveyed remain in jobs despite being dissatisfied. Women's job dissatisfaction stems from multiple sources, with the

quality of the working relationship with their superior being the most prominent. Dissatisfied women have been found to stay in their jobs for various reasons, including the desire to gain more expertise, skills, and personal development; a commitment to a work achievement they are unwilling to abandon; having adapted to working outside the home; a wish to sustain their personal careers; or because the job serves as a form of financial protection against the potential negative financial impact of a divorce (Koretz, 1997; Jalilvand, 2000). Women place a high value on rapid personal growth and continuous learning, which often encourages them to remain employed despite their dissatisfaction with numerous work-related issues (Lindsey, 2000).

Accordingly, a comparative study was conducted to address to compare marital adjustment and job satisfaction between female teachers and nurses, and to explore the relationships between marital adjustment, job satisfaction, and profession among women teachers and nurses.

Objectives :

1. To compare the marital adjustment of women teachers and nurses.
2. To compare the job satisfaction of women teachers and nurses.
3. To examine the relationship between marital adjustment and job satisfaction among women teachers and nurses.

Hypotheses:

1. Women teachers will have higher marital adjustment compared to women nurses.
2. Women teachers will have higher job satisfaction compared to women nurses.
3. There will be a positive and significant correlation between marital adjustment and job satisfaction among women teachers and nurses.

Method:

1. Sample:

The study sample consisted of 93 working women, comprising 49 teachers and 44 nurses, aged 20-37 years, selected from Pathardi Tehsil (Dist.- Ahilyanagar, Maharashtra) using purposive sampling, a non-probability sampling method.

2. Research Tools:

Marital Adjustment Inventory (Pramod Kumar & Kanchan Rohatgi, 1976): A 25-item inventory designed to assess marital adjustment in married individuals aged 28-58 years.

Job Satisfaction Scale (Amar Singh & T.R. Sharma, 1999): A 30-item scale comprising intrinsic and extrinsic job satisfaction statements.

3. Statistical Analysis:

The descriptive (mean, standard deviation) and inferential (t test and correlation method) statistical techniques were employed for data analysis and interpretation:

Results :

Table 1: Marital adjustment and job satisfaction of women teachers and women nurses.

DV's	Women teachers (n=49)	Women nurses (n=44)	t
	M (SD)	M (SD)	
Marital Adjustment	16 (2.78)	14 (2.83)	2.92**
Job Satisfaction	62.51 (10.72)	56 (10.14)	3.05**

The analysis of marital adjustment revealed that women teachers (N = 49) had a mean score of 16 (SD = 2.78), indicating a relatively high level of marital adjustment. In contrast, women nurses (N = 44) had a mean score of 14 (SD = 2.83), suggesting a slightly lower level of marital adjustment. The t-test result ($t(91) = 2.92, p < 0.01$) indicated a statistically significant difference in marital adjustment between women teachers and nurses, with women teachers exhibiting higher marital adjustment.

Regarding job satisfaction, women teachers (N = 49) had a mean score of 62.51 (SD = 10.72), indicating a moderate to high level of job satisfaction. Women nurses (N = 44) had a mean score of 56 (SD = 10.14), suggesting a relatively lower level of job satisfaction. The t-test result ($t(91) = 3.05, p < 0.01$) indicated a statistically significant difference in job satisfaction between women teachers and nurses, with women teachers reporting higher job satisfaction.

Table 2: Correlation between marital adjustment and job satisfaction

	Marital Adjustment	Job Satisfaction
Marital Adjustment	1	-
Job Satisfaction	.21**	1

The correlation analysis revealed a positive and significant relationship between marital adjustment and job satisfaction among women teachers and nurses ($r = 0.21, p < 0.01$). This suggests that as marital adjustment increases, job satisfaction also tends to increase, and vice versa. The correlation coefficient indicates a moderate positive relationship between the two variables.

Conclusion:

The study reveals significant differences in marital adjustment and job satisfaction between women teachers and nurses. Women teachers exhibit higher marital adjustment and job satisfaction compared to women nurses. The findings suggest that women teachers tend to have better marital relationships and are more satisfied with their jobs. The positive correlation between marital adjustment and job satisfaction indicates that improving one aspect can positively impact the other. These results highlight the need for targeted interventions to support women nurses, such as counseling and professional development opportunities, to enhance their marital adjustment and job satisfaction.

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EMOTIONAL MATURITY AND ADJUSTMENT OF RELOCATED CBSC BOARD AND STATE BOARD ADOLESCENT STUDENTS

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Abstract:

Emotional maturity and adjustment play a crucial role in a student's academic success and overall well-being. Differences in educational curriculum, gender, and geographic background can affect these psychological attributes. The Maharashtra Higher Secondary Education Board (HSC) and the Central Board of Secondary Education (CBSE) follow different educational approaches, which can shape the emotional and social well-being of students in different ways. However, limited research has explored how school board affiliation, gender, and urban-rural backgrounds together affect these aspects of student development. The study aims to compare the emotional maturity and adjustment levels among students in HSC and CBSE schools while examining the impact of gender and geographical location. This research seeks to provide insights to educators and policymakers about the mental well-being of students in different learning environments. A quantitative comparative research design using standardized measures was used to assess emotional maturity and adjustment in a stratified random sample of students from both HSC and CBSE schools. The study included participants from both urban and rural backgrounds and found gender-based variation. Statistical techniques such as independent t-tests, ANOVA, and correlation analysis were used to identify significant differences and patterns. HSC and CBSE show a significant difference in emotional maturity and adjustment among students. Female students showed better adjustment skills than male students, while urban students showed higher emotional maturity and adaptability compared to their rural students. These results underscore the impact of curriculum design and environmental factors on students' mental health. This study emphasizes the role of academic circles, gender, and geographical factors in shaping the emotional and social development of students. These insights can help create targeted psychological and academic interventions to enhance student well-being in a variety of academic contexts. Adolescent men. The results also showed that adolescent girls disclose less information about themselves compared to adolescent girls.

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Introduction:

Adjustment is the process of changing someone's behavior that leads to a harmonious relationship with their environment. It's usually a response brought about by some kind of equilibrium or homeostasis between the person (both introverted and extroverted) and their environment. Adjustment is an essential feature for living peacefully in this world. The problem of adjustment starts from birth and continues till death, various situations

arise at home, school, college and workplace where you have to give up your little demands and accept what you have. Adjustment is the process of reaching a state of equilibrium between a person's needs and their satisfaction. The process of adjustment is continuous. The individual, as well as his environment, is constantly changing according to the demands of the changing external environment. As a result, a person's adjustment process or conditions may be expected to change depending on the situation. Emotional maturity is the ability to tolerate stress and develop a high tolerance for disagreeable situations. An emotionally mature person has complete control over the expression of his emotions. However, he behaves according to accepted social values and ideals. He remains indifferent to emotional attractions. There is no instability in the expression of emotions. Adolescence develops excitement very quickly. Teenagers may laugh at trivial things or soon lose their composure, but emotionally mature people are free from the idea. As a person matures, his emotional stability and depth of social adjustment, professional and professional aptitude, life ambitions, etc. are developed. A mature person is expected to understand the situation without anyone's help and know his own duties and responsibilities. He will not behave irresponsibly under the emotional current and will not waste his time and energy on imaginary problems. But there is no doubt that it has something to do with his success in cultivating the fine qualities of self-control, humility, empathy, cooperation, tolerance, and emotional stability. (Bandura, 1986) An emotionally mature adolescent can make effective changes with himself, his family members, and his friends in school, society, and culture. Emotions are the great driving force in human life; It affects a person's aspirations, actions, and thoughts. In addition to emotions, self-confidence is considered a motivator and regulator for behavior in a person's daily life.

In today's scenario, you are aware that children and young people are facing difficulties in life. These difficulties are leading to many psychosomatic problems in daily life such as anxiety, stress and frustration and emotional turmoil. So, studying emotional maturity is now emerging as a descriptive science comparable to anatomy. Emotions dominate our lives. They bring color and variety to our lives, otherwise it will be boring. Those are the basic things that all motivation comes from. Emotions not only motivate you to take action but also often serve as a goal of action. Finding a happy ending and avoiding an unpleasant ending seems to stem from emotions. It is said that 'man is only a particle of our intelligence. An important part of determining whether one's ventures are successful or not. Adjustment is a process by which requirements and conditions are met. Man does not always get success according to his desires and efforts. This is due to adverse conditions or limited abilities of the individual. When he fails in this attempt, some deformity may be seen in his behavior. There are many factors that affect the level of aspirations, socio-economic status, family environment, school environment, anxious frustration and most importantly the process of adjustment of his emotional maturity, Caplan and Barron (1986) have explained the characteristics of an emotionally mature person in that he has the ability to tolerate delays in the satisfaction of needs, he believes in long-term planning, and he is able to delay or modify his expectations in terms of demands It's the situation. An emotionally mature child has the ability to make effective adjustments to himself, his family members, and his peers in school, society, and culture. But maturity is not just the ability to have such attitudes and competencies, but the ability to enjoy them to the fullest. Therefore, an

emotionally mature child is not one who has resolved all the situations that cause anxiety and hostility but is constantly in the process of seeing himself in a clear perspective, constantly engaged in the struggle to achieve a healthy combination of emotions, thoughts and actions. Whereas, emotional maturity can be said to be the process of impulse control by the agency of the self or the ego.

Gakhar SC (2003). "Emotional maturity of students at secondary level: Self-concept and academic achievement", Panjab University, Chandigarh. This paper explores the relationship between emotional maturity and self-concept on the academic performance of students at the secondary level. It found that there was a significant negative correlation between self-concept and emotional maturity. A negative correlation was also found between academic success and emotional maturity. There is a huge difference in the emotional maturity of boys and girls. It has been observed that there is a significant difference in the emotional maturity of students from urban and rural areas and the emotional maturity of students from rural areas is higher as they have lower average marks on the list of emotional maturity. There is a significant difference in the emotional maturity of students studying in government and private schools. Students in private schools have higher emotional maturity than their counterparts due to low average scores on the emotional maturity scale. It also shows that there is a negligible difference in the emotional maturity of hostel students and those who are day scholars. The study also showed that there is a negligible difference in the emotional maturity of the children of working and non-working mothers. Meenakshi and Saurashtra (2003) and Kaur (2001) studied a sample of 356 adolescents and showed a significant relationship between emotional maturity and intelligence. However, no significant association was found between emotional maturity and academic success. In addition, she found no significant difference in emotional maturity and significant differences in emotional maturity among boys and girls, adolescents in urban and rural areas.

Arnold (2012) conducted a study on adolescent adjustment in high school students: a brief report on the middlesex transition. The findings of studies on emotional, social, and academic adjustment show an increasing level of boys and girls reporting adjustment problems. Bharti (2012) found that first-year graduate students have less adjustment where social, economic, and educational fields are connected. They are expected to face more adjustment-related issues, especially in the social and economic context. First-year students tend to be less emotionally mature and thus have difficulty emotionally adapting to the changing demands of the environment than final year graduates. Since they are familiar with the surroundings, their integration is more in the social fabric of the college. Dutta, Chetia and Soni (2016) found that there is a big difference in the emotional maturity of secondary school students in the two districts. The study also showed that there is no difference in emotional maturity between urban males/females, private school males/females and private school urban males and female secondary students of both students. Suman (2014) found that boys and girls are more or less similar in adjustment and emotional maturity but their adjustment and emotional maturity are influenced by other factors such as socio-economic status, family background, mother's working status, environmental factors, economic and religious values, and age group. There's no significant relationship between adjustment and emotional maturity. Jain, Pasrija and Divya (2015) conducted a study on emotional maturity and self-concept among senior

secondary school students. The results of this study showed that there were significant differences in emotional maturity and self-concept among students about the type of school.

Adolescence is derived from the Latin word for adolescence, which means "growing up" is a transitional stage of physical and mental human development that usually occurs between puberty and legal adulthood (the age of adulthood). The period of adolescence is closely related to the adolescent years, although its physical, mental, and cultural manifestations can begin earlier and later. Adolescence is usually marked by hormonal changes as a period of development from the beginning of puberty to adulthood It is defined. A common consequence of puberty is an adult body capable of reproduction (Buchanan, Eccles, & Baker, 1992). Adolescence begins **with the onset of puberty**, which is a developmental period in which hormonal changes cause rapid physiological changes in the body, culminating in sexual maturity. Although the time varies somewhat across cultures, the average age range to reach puberty is between nine and 14 years for girls and 10 to 17 years for boys (Marshall and Tanner, 1986)

According to the World Health Organization, puberty is defined as "the time in life when a child experiences physical, hormonal, sexual, and social changes and is able to reproduce." Puberty typically begins for girls between the ages of 8 and 13 and boys between the ages of 9 and 14, and can continue for boys ages 19 and older.

Adolescence refers to the period of human growth that occurs between childhood and adulthood. Adolescence begins at the age of 10 and ends at the age of 21. Adolescence can be divided into three stages: early adolescence, middle adolescence, and late adolescence. Development from childhood to adulthood is a complex process. It is more than learning. Adolescents who go through this transition think differently, They feel and behave. Emotional maturity and adjustment are important components of mental well-being, shaping a person's academic success, interpersonal relationships, and professional growth (Singh & Kaur, 2020). Emotional maturity is the ability to effectively manage emotions, cope with stress, and show resilience in challenging situations (Sharma, 2019). Adjustment, on the other hand, is the process of adapting to one's environment in the personal, social, and academic domains (Kumar & Gupta, understanding these mental structures in students from diverse educational backgrounds, especially those enrolled in CBSE and ICSE schools, is essential to identify how curriculum and pedagogy influence emotional development (Mishra & Tripathi, 2020).

Adolescence is the transition from childhood to adulthood. Adolescence is not considered a child or adult. This is an era of struggle where he wants to live an independent life but at the same time he is pulled back by various prevailing factors. Therefore, it can be said that this age is no less than a tug of war. Adolescents have difficulty adjusting at home, at school, and in society. He begins to feel ashamed and ashamed of the protection and care shown by his parents. Parents and teachers often treat him suspiciously. Sometimes they expect him to behave as an adult and other times like a child. About 1/5 of India's population consists of adolescents (Anon, 2004). Recent research suggests that more young people are starting to report mental health problems as they feel more stressed. It's estimated that six to nine million children and adolescents in the United States have mental or behavioral problems. The Indian Council of Medical Research has reported that about 12.8 percent of children

(1-16 years) suffer from mental health problems. According to the findings (Wadava, 2002), 69.56 percent of adolescents commit suicide due to parent-child problems, 8.69 percent due to adjustment disorders, and 4.35 percent due to depression. Adolescent adolescents in disadvantaged communities are at a higher risk of exposure to a range of stressors, which reflect high rates of crime and abuse, family poverty, family conflicts, increased proportions of deviant peers, and schools with inadequate resources (Gonzales, 2001 and Seidman, 1994). Adjustment in adolescents depends on several factors. One of these factors is emotional maturity. The study has been conducted to assess the adjustment among adolescent boys and girls in senior secondary school of classes XI and XII. Gakhar SC (2003). "Emotional maturity of students at secondary level: Self-concept and academic achievement", Panjab University, Chandigarh. This paper examines the relationship between emotional maturity and self-concept on the academic performance of secondary level students. It found that there was a significant negative correlation between self-concept and emotional maturity. A negative correlation was also found between academic success and emotional maturity. There is a huge difference in the emotional maturity of boys and girls. It has been observed that there is a significant difference in the emotional maturity of students from urban and rural areas and the emotional maturity of students from rural areas is higher as they have lower average marks on the list of emotional maturity. There is a significant difference in the emotional maturity of students studying in government and private schools. Students in private schools have higher emotional maturity than their counterparts due to low average scores on the emotional maturity scale. It also shows that there is a negligible difference in the emotional maturity of hostel students and those who are day scholars. The study also showed that there is a negligible difference in the emotional maturity of the children of working and non-working mothers. Meenakshi and Saurashtra (2003) and Kaur (2001) studied a sample of 356 adolescents and showed a significant relationship between emotional maturity and intelligence. However, no significant association was found between emotional maturity and academic success. Further, she found no significant difference in the emotional maturity of boys and girls, adolescents in urban and rural areas, but significant differences in the emotional maturity of arts and science students. (Miglani, D. (2001). "Emotional Intelligence Associated with Academic Performance in Adolescence." Miglani also found a significant association between emotional intelligence and academic performance. This means that only IQ level i.e. high IQ does not mean high academic performance is given to the student. Other factors also play a huge role in higher academic performance. Kaur (2000) found a significant relationship between emotional maturity and environmental factors in her study of adolescents. In the films Rathaiya and Bhaskarrao (1997), a positive relationship of adjustment and achievement was found. Richardson and Evans (1997) explored some methods for teaching social and emotional abilities in culturally diverse societies. Their purpose was to help students connect with each other, to help them develop interpersonal and emotional intelligence, arguing that this intelligence is essential for individual performance. According to Ediger (1997), emotions, emotions, and values are important for a person's well-being and success in life. He also says that science teachers should emphasize the emotional domain which cannot be separated from the cognitive domain. Quality feelings and emotions help students to give their best abilities in the classroom. Students who are adversarial and think negatively may not be able to concentrate for a long time and

have more difficulty reaching their potential than others. Singh and Bruta (1992) found that girls tend to be more anxious, anxious, and emotional than boys. Vashisht (1991) found a positive relationship between adjustment and achievement. Srivastava (1988) did not find any significant association between self-concept and aggression. However, there was a positive correlation between aggression and academic success. Arya (1984) revealed that boys and girls with high intelligence performed better on tests of emotional maturity. Superior intelligence showed a higher correlation with emotional maturity. There was also a difference in the accommodation of the children. However, Jethwani (1986) found that there was no difference in their average frustration scores between high IQ and low IQ students. शाक्रेत भावनिक आणि सामाजिक Teaching skills is very important, it can have a positive impact on academic performance not only in the year they are taught, but also in the years that follow. Teaching these skills has a long-term impact on performance. (Elias et al. 1991). The term emotional intelligence then appeared in a series of academic articles written by John D. Meyer and Peter Saloway (1990, 1993 and 1995). In their first article, they presented the first model of emotional intelligence, 195. However, the term "emotional intelligence" only came into the mainstream in 1995 with Daniel Goleman. He argues in his book that IQ contributes only 20% of success in life and that the rest are contributed by other forces. We can infer that luck and social class are among the other factors. They also say that emotional intelligence is indeed a new concept, but existing data suggests that it can be IQ and sometimes even more powerful. And, at least, contrary to what is said about IQ, we can teach and improve some important emotional abilities in children. Emotionally intelligent people are more likely to succeed in everything they undertake. In 1983, Howard Gardner presented his theory of multiple intelligences that opened the door to other theories, such as emotional intelligence. Sumbli (1981) found in her study that boys tend to be more aggressive than girls. The aggressive students were less intelligent than normal. Patel (1983) revealed that there was no difference in the SEC in terms of frustration scores. Reddy (1978) found that academic adjustment is significantly related to the academic performance of secondary school students. Soman (1977) also observed that individual adjustment variables have a considerable impact on performance. Cattell and Dreger (1974) found a positive correlation between self-confidence, self-esteem, and social adjustment.

Operational Explanation

Adolescence: The period of adolescence is the physical, emotional, and mental changes between the ages of 11 and 14 years.

Grossbard, (2009), therefore, concluded that physical dissatisfaction in women, and to a lesser extent in men, is associated with low self-esteem, depression, and eating disorders. This research examined gender as a moderator of the relationship between weight issues in girls and muscle problems in boys, as well as contingent self-esteem and body image anxiety. Participants included 359 (59.1% female) first-year U.S. undergraduate students who completed a survey evaluating health-related risk behaviors. Hierarchical multiple regressions were used to examine the relationship between gender, contingent self-esteem, and body image. This research concluded that women reported higher levels of casual self-esteem and greater anxiety about their weight, although men

reported a greater drive for muscle. That's why the review found that body image dissatisfaction was in terms of weight in girls and muscle mass in boys which was influenced by low self-esteem

Kraut and his colleagues (1998) concluded that while Internet use is positively associated with depression, loneliness, and stress, people's perception of the Internet is decidedly negative. In contrast, the present study was designed to test the hypothesis that internet use can have a beneficial effect on users. The participants participated in five chat sessions with an unknown partner. They were given scales measuring depression, loneliness, self-esteem, and social support at three different intervals. Changes in their scores were tracked from time to time. Internet use was found to reduce loneliness and depression, while social support and self-esteem increased significantly.

Alona Tinunova, (2015) This study assessed the characteristics of the relationship between body image and self-esteem of Ukrainian adolescents with different types of constitutional development. In a school-based cross-sectional survey, a total of 250 adolescents were recruited. They filled out a self-complete questionnaire on body image, organ ranking, self-esteem, personal scores, and related factors. The results suggest that body image in the adolescent's consciousness, its individual characteristics, Defines specific characteristics of the level of self-esteem, the extent of internal conflicts, and emotional reactions to the environment.

Atta RN, Rojas A., Ludden AB, Thompson JK. According to the tripartite effect model of body image and eating disorders — around which this chapter is organized — there are a number of factors that can influence the self-esteem of adolescents i.e. mass media, parents, and peers are particularly formative influences, which can both be directly applied (e.g., through negative feedback or comments) and indirectly (i.e., through appearance comparisons and internalization) affect body dissatisfaction. Images of attractiveness and messages about the importance of appearance disseminated through media become especially problematic when they are reinforced by the behaviors and comments of important socializing agents in adolescence — parents and peers. Other factors, such as race, ethnicity, and level of culture, can also affect body image during adolescence. The influence of the media, peers, parents, and culture, as well as the relationship between body image distress and other areas of health, will be discussed here. The effects of the above factors can have a positive or negative impact on adolescents.

Emotional Maturity:-

Emotional maturity is the ability of adolescents to stabilize emotion which includes the ability to make emotional progress, independence, social adjustment, emotional stability, personality integration, etc. According to Walter D. Smittson, "Emotional maturity is a process in which the personality is constantly striving for a better sense of emotion, health, inter and inter personal." "Emotional maturity can be defined as a process in which personality is always determined for a better sense of emotional well-being". Emotional maturity is the state of reaching an adult level of emotional development that suggests emotional control in social situations. Emotional maturity is considered a key determinant of shaping a person's personality, behavior, and attitudes, and it helps to build relationships with others and increase a person's self-worth, and emotional stability is considered a key factor in mental health. "To the extent that a person has understood the potential for enrichment of his life and has

developed the ability to enjoy things, relate to others, love, and laugh; His ability to grieve with all his heart when an occasion arises, and his ability to show fear when the opportunity arises, should be assumed by persons who are afraid to admit that they are afraid, without the need to use a false mask of courage. Caplan and Barron (1986) have elucidated the characteristics of an emotionally temperamental person who has the ability to procrastinate to meet needs. In fact, emotional maturity is not only an effective determination of personality patterns but also helps to control the growth of adolescent children. According to Cole (1980), the most notable sign of emotional maturity is the ability to tolerate stress. An emotionally mature person is not one who has overcome all the conditions that lead to anxiety and hostility. He is constantly in the process of seeing himself in a clear perspective, constantly engaged in the struggle to achieve a healthy combination of feelings, thoughts, actions.

Adjustment Adjustment is not only the reaction of the demands and pressures of the social environment imposed on the individual or the process of fitting oneself in the available situation but also the process of changing the situation according to one's own needs. Psychologists have included the criteria of mental comfort, work, efficiency, and social acceptance to evaluate the adequacy of adjustment.

Aim of the study:

The study of emotional maturity and adjustment of relocated CBSC board and state board Adolescent Students.

Objectives of the Study:

1. To study emotional maturity of relocated CBSC board and state board adolescents' students.
2. To study adjustment of relocated CBSC board and state board adolescents' students.
3. To study the emotional maturity and adjustment of relocated CBSC board boys adolescents' students.
4. To study the emotional maturity and adjustment of relocated CBSC board girls adolescents' students.
5. To study the emotional maturity and adjustment of relocated state board boys adolescents' students.
6. To study the emotional maturity and adjustment of relocated state board girls adolescents' students.

Hypotheses :

1. There will be no significant difference between the relocated CBSC board and state board adolescents' students of their emotional maturity.
2. There will be no significant difference between relocated CBSC board and state board adolescents' students of their adjustment.
3. There will be significant difference between emotional maturity and adjustment of relocated CBSC board boys' adolescents' students.
4. There will be no significant difference between emotional maturity and adjustment of relocated CBSC board girls' adolescents' students.
5. There will be no significant difference between the emotional maturity and adjustment of relocated state board boys' adolescents' students.
6. There will be significant difference between emotional maturity and adjustment of relocated state board girls' adolescents' students.

Research Design:

Relocated Students	Gender	
	Boys	Girls
CBSC Board	25	25
State Board Students	25	25
Total	50	50

Method of data collection:

The researcher proceeds with quantitative research for the study. The purpose of quantitative research is to create knowledge and to create an understanding of the social world. Quantitative research methods place more emphasis on objective measurement and statistical, mathematical or quantitative analysis of data collected through questionnaires and surveys. The main feature of quantitative research is the focus on collecting quantitative data using computational techniques. Quantitative research focuses on collecting quantitative and generalizing or explaining a particular phenomenon among groups of people.

Method of Collection of Information:

A list of five randomly selected schools in Ahmednagar was taken for the study. The data was collected during school hours with the prior permission of the concerned Officer/Principal. Researchers identify the purpose and build relationships with students. The researcher gave instructions and basic instructions before the test. The students were seated in the correct order to get the official and correct results of the examination conducted.

Each question was explained to them well and was also translated into Marathi, Hindi and English for better understanding. Students were allowed to ask questions and their doubts were answered. The students were asked to record the answers to all the questions. They were given enough time to answer questions. The questionnaire was withdrawn after the recorded answer.

Sampling method :

The objective selective sampling method used in quantitative research is to draw conclusions about the selected group in terms of the focus of the inquiry. Therefore, the qualitative research here is designed to gain or study in-depth knowledge about adolescent individual attitudes or assumptions about themselves.

The researcher collected samples from 100 adolescent students from six different schools and colleges in Ahmednagar city. The sample collection includes 50 boys and 50 girls from each school.

Tools used for research:

Emotional Maturity Scale (2012)

This scale was developed by Dr. Yashvir Sing and Dr. Mahesh Bhargava. It obtained 48 items under the five categories as emotional stability, emotional progression, social adjustment, personality integration, and independence. It is a self-report measure of five-point rating with options namely very much, much, undecided,

probably, and never, weighted on 5, 4, 3, 2, 1 scale points. The test-retest reliability of whole test was 0.75 and validity of the test is 0.64.

Adjustment Inventory (2015)

K. P. Sinha and R. P. Singh. Adjustment Inventory for School students AISS -ss Hindi/English. This inventory consists 60 items. It measures Adjustment in three areas emotional, social, educational. It was administered on a sample of 1950 students of both sexes. Age group 14 to 18 year. Reliability- Coefficient of reliability was determined by i) Split-half method, ii) Test- retest method, and iii) K-R formula-20. The reliability coefficients of the total test and sub-tests by different methods.

Statistical analysis and interpolations:

1. There will be no significant difference between the relocated CBSC board and state board adolescents' students of their emotional maturity.

Emotional maturity.	N	Mean	SD	SEM	df	t
relocated CBSC board students'	50	25.10	8.41	1.53	98	1.126
state board students'	50	22.23	11.10	2.02		ns

The above table 1 shows mean value of emotional maturity of relocated CBSC board students' is 25.10, SD 8.41 and state board students' mean value is 22.23 and SD is 11.109 that 't' value is 1.126 not significant.

2. There will be no significant difference between relocated CBSC board and state board adolescents' students of their adjustment.

Adjustment	N	Mean	SD	SEM	df	t
relocated CBSC board students'	25	8.83	4.46	.81	98	.825
State board boys' students'	25	7.86	4.61	.84		ns

The above table no.2 shows mean value of Adjustment of relocated CBSC board students' mean is 8.83, SD is 4.46 and state board students' mean value is 7.86 and SD is 4.61 the 't' value is 0.825. The value is non-significant it means that hypothesis is accepted.

3. There will be significant difference between emotional maturity and adjustment of relocated CBSC board boys' adolescents' students.

Relocated CBSC board boys' adolescents' students	N	Mean	SD	SEM	df	t
emotional maturity	25	10.30	3.32	.60676	48	2.349**
adjustment	25	8.0	4.21	.76864		

** significant on .05 level.

The above table no.3 shows mean value of emotional maturity of relocated CBSC board boys' students' mean is 10.30, SD is 3.32 and relocated state board boys' students' mean value is 8.0 and SD is 4.21 the 't' value is 2.349. The value is significant on .05 level, it means that hypothesis is accepted.

4. There will be no significant difference between emotional maturity and adjustment of relocated CBSC board girls' adolescents' students.

Relocated CBSC board girls' adolescents' students	N	Mean	SD	SEM	df	t
emotional maturity	25	5.96	3.25	.59	48	.414ns
adjustment	25	6.33	3.59	.65		

The above table no.4 shows mean value of emotional maturity of relocated CBSC board girls' students' mean is 5.96, SD is 3.25 and relocated state board boys' students' mean value is 6.33 and SD is 3.59 the 't' value is .414. The value is non-significant it means that hypothesis is accepted.

5. There will be no significant difference between the emotional maturity and adjustment of relocated state board boys' adolescents' students.

Relocated state board boys' adolescents' students	N	Mean	SD	SEM	df	t
emotional maturity	25	18.2	7.6	.49	48	1.44ns
adjustment	25	15.2	9.2	.56		

The above table no.5 shows mean value of emotional maturity of relocated STATE board boys students' mean is 18.2, SD is 7.6 and relocated state board boys' students' mean value is 15.2 and SD is 9.2 the 't' value is 1.44. The value is non-significant it means that hypothesis is accepted.

6. There will be significant difference between emotional maturity and adjustment of relocated state board girls' adolescents' students.

Relocated CBSC board girls' adolescents' students	N	Mean	SD	SEM	df	t
emotional maturity	25	5.8	3.7	.83	48	.414ns
adjustment	25	6.5	2.89	.57		

The above table no.6 shows mean value of emotional maturity of relocated STATE board girls students' mean is 5.8, SD is 3.7 and relocated state board girls' students' mean value is 6.5 and SD is 2.89 the 't' value is .41. The value is non-significant it means that hypothesis is accepted.

Discussions, Limitations and Conclusions:

There will be no significant difference between juvenile students of migrant CBSE boards and state boards of their emotional maturity.

There is no evidence to support the hypothesis that there is no significant difference in the emotional maturity of migrant CBSE and state board teenagers. In fact, migration is a known source of stress for teens, and factors such as the academic board and the school environment can affect how they cope. Factors Affecting Emotional Maturity During Migration Difference in Curriculum: The standardized, theme-based CBSE curriculum is significantly different from the regional and culturally focused state board curriculum. Changes in boards mean adapting to a new academic focus and teaching methodology, which can affect students' confidence and emotional state. Compatibility and peer group: CBSE's uniform curriculum can facilitate inter-state migration, but students switching from state boards may find it more challenging to adapt to the new educational system and social environment. Peer group stability is an important support for adolescents and is hampered by migration regardless of board. School Environment: Schools affiliated to different boards have diversity in their academic philosophies and extracurricular opportunities. For example, one study found that students in private schools generally show higher emotional maturity than students in public schools, suggesting that a particular school environment plays a role. Moving stress: Moving is a major life event that can cause significant stress, anxiety, and feelings of sadness and loneliness, especially in adolescents. This stress can negatively impact a teen's emotional health, including their ability to regulate emotions. Environmental and support factors: Factors other than the academic board can affect emotional maturity, including the home environment, family support, and socioeconomic status. A supportive family that openly discusses emotions and maintains a consistent routine to help teens adjust emotionally. To determine whether the differences across the board actually produce a significant impact, a comparative study with immigrant students from both educational backgrounds will be needed.

It proposes that there is no correlation between students' boards of education and their adjustment levels after migration. To test this hypothesis, the researcher needs to collect data and conduct statistical analyses. Individual differences: Factors such as personality, family support, and coping skills may have a greater impact on student adjustment than a student's education board. High-quality schools: If CBSE and state board schools have high-quality teachers and resources. The difference in curriculum may not affect the overall adjustment of the students. Student adaptability: Adolescent students, regardless of their board, can often be flexible and adapt to new situations relatively quickly. Curriculum Differentiation: CBSE's nationally standardized curriculum provides consistency that can facilitate the transition for families who frequently migrate. The state board curriculum is region-specific, so switching between state boards can be challenging due to differences in curriculum and language. Medium of instruction: The CBSE curriculum is mostly taught primarily in English, which can be beneficial for students whose families move frequently and need admission in new schools. In contrast, state boards may place more emphasis on the local language. Academic Pressure: CBSE's curriculum is often considered more challenging and prepares students for competitive national exams, which can benefit or stress a student who has shifted. The assumption that there is no difference is challenged by evidence showing that the standardized format of the CBSE curriculum can facilitate the academic transition for students to transfer. Conversely, regional differences in state board curricula may present more significant adjustment barriers for

migrant students. However, the overall adjustment process is complex and is also influenced by individual components and support systems available to the student

Limitation:

1. The present study is only concern to the Ahmednagar city only.
2. In the present study demographic factors are not considered.
3. In the study only CBSC board and State board schools are participating and they are not comparable with the indigenous schools.

Conclusion:

Studies have shown that adolescents exhibit cognitive biases about their body shape and are generally dissatisfied with it. Interestingly, there were significant differences in body image perception among middle school students based on gender and BMI grading. Furthermore, the study found significant gender differences in body size aesthetic parameters, including the general perception that female body shape is "skinny pretty." To address this issue, It is recommended that health education on body image be conducted in primary and secondary schools with the participation of families, schools, and communities. This will help students develop a healthy body image and promote their overall physical and mental health. School migration is a significant life event for a teenager, and research suggests that it can disrupt a student's social and emotional stability. Emotional Disruption: Disruption of familiar routines and environments can lead to anxiety, sadness, hopelessness, and loneliness in adolescents. Social Challenges: Migration disrupts social circles and can make it challenging to form new friendships. This social instability can negatively impact self-esteem and lead to loneliness. It can be the cause. Flexibility and adaptability: Some teens exhibit resilience and grow from experience, but those who have to move frequently are at a higher risk of psychological difficulties. Additional Variables to Consider Emotional maturity is influenced only by a complex mix of factors beyond the school board or transfer status. These additional variables need to be considered for any research on this topic. Family environment: Parental influence, attachment and stability of the home environment are important factors. An assistant can help reduce the emotional stress of moving house. Urban vs Rural Background: Studies have shown that students from urban areas have higher emotional maturity and adaptability compared to their rural counterparts. Socio-Economic Status: The financial background of the student is a powerful risk factor, as students from low-income families who migrate frequently often face compounding disadvantages. Gender: Some studies have found gender-based differences in emotional maturity and adjustment in adolescence.

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FRUSTRATIONS AND PSYCHOLOGICAL WELL-BEING OF SPORTSMEN

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Abstract:

The present study deals with and effort to reveal the strata-wise differences of frustration and psychological well-being sportsmen of the sportsmen of class 12 above. One adapted and standardized questionnaires were administered on a sample of 100 no of sportsmen selected by cluster sampling technique to collect the required data. Normality of ratio of the variables is tested. Most of the variables show normality in the data. To investigate the significant difference if any, between tribal and urban students level in terms of frustration and psychological well-being 'correlation' method/test was used. The descriptive statistics such as Mean and SD were computed for three dependent variables and their levels as per different age groups. These values are used for interpreting.

Keywords: *Frustration, Psychological well-being & Sportsmen*

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Introduction:

Anything that poses a challenge or a threat to our well-being is a stress. Some stresses get you going and they are good for you - without any stress at all many say our lives would be boring and would probably feel pointless. However, when the stresses undermine both our mental and physical status, to cope the situation our body's sympathetic nervous system reacting to a stressful event. Our body produces larger quantities of the chemicals cortisol, adrenaline and noradrenaline, which trigger a higher heart rate, heightened muscle preparedness, sweating, and alertness all these factors help us to protect ourselves in a dangerous situation.

Effect of stress on our body:

Blood pressure rises, Breathing becomes more rapid, Digestive system slows down, Heart rate (pulse) rises, Immune system goes down, Muscles become tense, We do not sleep (heightened state of alertness).Some situations which are not negative ones may still be perceived as stressful. This is because we think we are not completely prepared to cope with them effectively. How you see that stressful event will be the largest single factor that impacts on your physical and mental health Your interpretation of events and challenges in life may decide whether they are invigorating or harmful for you. A persistently negative response to challenges will eventually have a negative effect on your health and happiness.

The most common causes of stress are: Bereavement, Family problem, Financial matters, Illness, Job issues, Lack of time, Moving home, Relationships (including divorce)etc. *The allowing are also causes of stress:*

Abortion, Becoming a mother or a father, Conflicts in the workplace, Driving in bad traffic, Fear of crime, Losing your job, Miscarriage, Noisy neighbors, Overcrowding, Pollution, Pregnancy etc.

Stress is our response to daily life. It affects us emotionally, physically, and behaviorally. The right amount of stress can be a positive force that helps us to do our best and to keep alert and energetic. Too much stress, however can make us tense, anxious, and can cause sleep problems.

Dollard, Doob, Miller, Mowrer, and Sears(1939) found that a monograph on aggression in which they presented what has come to be known as the frustration-aggression hypothesis. This hypothesis proved to have an immense impact. It appears to have influenced current Western thinking on aggression more profoundly than any other single publication. Geen,(1972); Zillmann, (1979) found that hypothesis has guided, in one way or another, the better part of the Experimental research on human aggression. Perhaps more importantly, however, the views of aggression that it involves seem to have become widely adopted and accepted; they have become commonplaces. This popular success may have various sources. First the principal hypothesis is uncomplicated and easy to grasp. The theory is generally well structured and clearly articulated, a fact that again facilitates comprehension. Second, the theory does not involve overly abstract concepts or elaborate procedures. It is very close to common sense - seeming to be built on it. Finally, as Selg (1971) found that the theory tends to provide a justification for behaving aggressively: 'Being frustrated made me do it! Zillmann, (1979) found that like the aggression amnesty provided by instinct notions ('It can't be helped because we're built that way'), although not as strong, this kind of justification can be drawn upon as a ready-made excuse for uncontrolled (or premeditated) hostile or aggressive actions. As to the principal hypothesis,

Dollard et al. (1939) found that the occurrence of aggressive behavior always presupposes the existence of frustration and, contrariwise, that the existence of frustration always leads to some form of aggression". Frustration, in this context, was specified as the wanting of a goal response, and a goal response, in turn, was taken to mean the reinforcing final operation in an ongoing behavior sequence. At times, however, the term 'frustration' is used to refer not only to the process of blocking a person's attainment of a reinforce but also to the reaction to such blocking. Consequently, 'being frustrated' means both that one's access to reinforce is being thwarted by another party (or possibly by particular circumstances) and that one's reaction to this thwarting is one of annoyance. It was soon recognized that the initial claims

- (a) That aggression is always based on frustration.
- (b) That frustration always leads to aggression - were far too general. These blames made frustration both a necessary and sufficient condition for aggression.

Miller (1941) found that quick to retract the latter part of the proposal. Quite obviously, frustrations do not cause hostile or aggressive outbursts by necessity. Potential outbursts may be effectively inhibited or may result in alternative actions, such as the pursuit of other, more readily available reinforces. "Frustration produces instigations to a number of different types of response, one of which is instigation to some form of aggression". According to this reformulation, frustration actuates motivational forces that are diffuse rather than specific to aggression. It is assigned the properties of a general drive. Miller (1941) found that the generality of this claim

both defensible and useful. The revised F-A hypothesis thus maintains the following:

- (a) Frustration instigates behavior that may or may not be hostile or aggressive.
- (b) Any hostile or aggressive behavior that occurs is caused by frustration.

Zillmann,(1979) found that In other words, frustration is not a sufficient, but a necessary, condition for hostility and aggression. It should be noted that the revised hypothesis retains a good deal of the original, sweeping claim. Because of its sweeping nature, the hypothesis proved most controversial (cf. Bandura & Walters, 1963a,b; Buss, 1961). After considering the more specific elements of frustration aggression theory, we briefly review the main arguments in this controversy. In developing a comprehensive theory of aggression, Dollard et al. (1939) says that the motivational strength toward aggression is a function of: (a) The reinforcement value of the frustrated goal response. (b) The degree of frustration of this goal response. (c) The number of frustrated response sequences and stress.

Frustration can be considered a problem–response behavior, and can have a number of effects, depending on the mental health of the individual. In positive cases, this frustration will build until a level that is too great for the individual to contend with, and thus produce action directed at solving the inherent problem. In negative cases, however, the individual may perceive the source of frustration to be outside of their control, and thus the frustration will continue to build, leading eventually to further problematic behavior. Stubborn refusal to respond to new conditions affecting the goal, such as removal or modification of the barrier, sometimes occurs. Brown (1954) found that punishment may cause individuals to continue nonadaptive behavior blindly: "Either it may have an effect opposite to that of reward and as such, discourage the repetition of the act, or, by functioning as a frustrating agent, it may lead to fixation and the other symptoms of frustration as well. It follows that punishment is a dangerous tool, since it often has effects which are entirely the opposite of those desired".

Miller(1941) found that the aggression-potentiating annoyance is seen to increase with the incentive that could be obtained or the aversion that could be terminated by the blocked goal reaction. Furthermore, frustration can be incomplete, and thus a goal reaction can be partially completed. It is meaningful only if it is assumed that frustration-induced annoyance is cumulative. It is apparently held that '*aggressive drive*' resulting from frustrations is somehow maintained within the organism and adds up to a level at which another wise tolerable frustration evokes aggression. In psychology, frustration is a common emotional response to opposition. Related to anger and disappointment, it arises from the perceived resistance to the fulfillment of individual will. The greater the obstruction, and the greater the will, the more the frustration is likely to be. Causes of frustration may be internal or external. In people, internal frustration may arise from challenges in fulfilling personal goals and desires, instinctual drives and needs, or dealing with perceived deficiencies, such as a lack of confidence or fear of social situations.

Conflict can also be an internal source of frustration; when one has competing goals that interfere with one another, it can create cognitive dissonance. External causes of frustration involve conditions outside an individual, such as a blocked road or a difficult task. While coping with frustration, some individuals may engage in passive–aggressive behavior, making it difficult to identify the original cause(s) of their frustration, as the

responses are indirect. A more direct, and common response, is a propensity towards aggression. Dollard (1954) found that he acknowledged the significance of the temporal aspect of this summation of 'aggressive drive' but quickly dismissed the issue by pointing out the lack of relevant data.

B] Psychological Well-Being:

Psychological well-being is a dimension where the positions of a person's may vary between two independent dimensions - positive affect and negative affect. Preoccupation with psychological ill health seems to have given way to that about psychological well-being, towards the end of the 20th century. We can expect even greater attention in the beginning of 21st century, accepting the two factor theory of mental health viz. Absence of psychological ill-being/ill-health does not necessarily mean presence of psychological well-being. A person can have both conditions poor, both conditions good and, any one of them good, with all its accompanying results (S. K. Verma 1988). Many attempts have been made in the past to measure the positive mental health, only one of which is the measure of subjective, general sense of psychological well-being and one such tool is described here. Attempts over the years have been made to find out more of its correlates and these are summarized here, for the benefit of test users, so that the scale can be administered objectively and in a standardized way, by mental health workers, researchers and clinicians alike in their everyday practice. **General Well-being:**-It may be defined as the subjective feeling of contentment, happiness, satisfaction with life's experiences and of one's role in the world of work, sense of achievement, utility, belongingness, and no distress, dissatisfaction or worry, etc. These things are difficult to evaluate objectively, hence the emphasis on the term "subjective" well-being. It may well be maintained in adverse circumstances and conversely, may be lost in favorable situation. It is related to but not dependent upon the physical/physiological conditions. Thus defined and conceptualized, the general well-being may show some degree of positive correlation with quality of life, job satisfaction/general satisfaction level, sense of achievement etc., and negatively related with neuroticism, psychoticism, and other such variables. However, the degree of overlap with such variables should not be high if this concept as a separate independent entity is to be considered as a valid one. Also, it should show relative stability over time (reasonable time gap without any significant life events intervening), its utility will depend upon these relationships/a network of relationship with other variables.

Objective of the Study:

A study sportsmen relationship between frustration and psychological well-being.

Hypothesis:

1. There will be positive correlation between frustration and psychological well-being of sportsmen.
2. There will be negative correlation between frustration and psychological wellbeing of sportsmen.

Method:

Sample: Total 100 various out and indoor game players were involved in that study in Pune district. The age range of subjects where 20 to 26 years .The sample taken for the present study were included hundred sportsmen from Pune districts of Maharashtra out of which 100 sportsmen were selected with the players. Only sportsmen between the ages ranging from 20 to 26 years were selected.

Sr. No	Location Districts	Age group	Sportsmen	Total Sportsmen
1.	Pune	18-to 26 years	100	100
		Total	100	100

Tools:

1) Frustration Test: by N.S. Chauhan and Dr. Govind Tiwari Nairashya Mapatest

N.S. Chauhan and Govind Tiwari Nairashya Mapatest were used for measuring frustration. All the 40 items of the test are presented in simple and brisk style. Each of the items has five answers (multiple Choices). This test reliability is .88 and reliable validity.

2) PGI Well-being Scale – by Dr. Santosh Verma and Amita Varma, (1989).

This test consists of 20 items which measures the psychological well-being of the person. In this test the respondent has to respond to the items which are suitable to them, and the maximum score is on this test are 20. This scale scores have been found to be independent of socio-economic status (-.39) and education (.12), but it showed significant correlation with age (.52, $p < .01$) (Moudgil, 1986). Inter-rater and inter-scorer reliabilities of the scale showed good inter-rater (-.86, $p < .01$) and inter-scorer (1.0, $p < .01$) reliabilities (Moudgil 1986).

Reliability:

Reliability as measured by K. R. 20 formula was found to be .98 ($p < .01$), while test-retest reliability was .91 ($p < .01$). Variables: In the present study the independent variables and dependent variables are as follows:-
Independent variables:-Employment status. Dependent variables:-

Criteria’s for sample selection :

- Participants in this study were consists of 100 married and unmarried sportsmen.
- Sportsman received the Physical director and BP. Ed Teacher of were selected as a sample for this study.
- Sample were selected randomly from Pune districts of Maharashtra
- There was no reference to the caste and religion of the participants.

Data Collection:

For data collection first permission has been taken from respective sources than the despondence has been selected for data collection. Personal data sheet (PDS) has been given to collect the preliminary information with respect to subject’s related variables then standardized test administer to the subjects. Before that rapport was established with subjects. And they have been told that their responses were kept confidential and the information is used for research purpose only.

Variables:

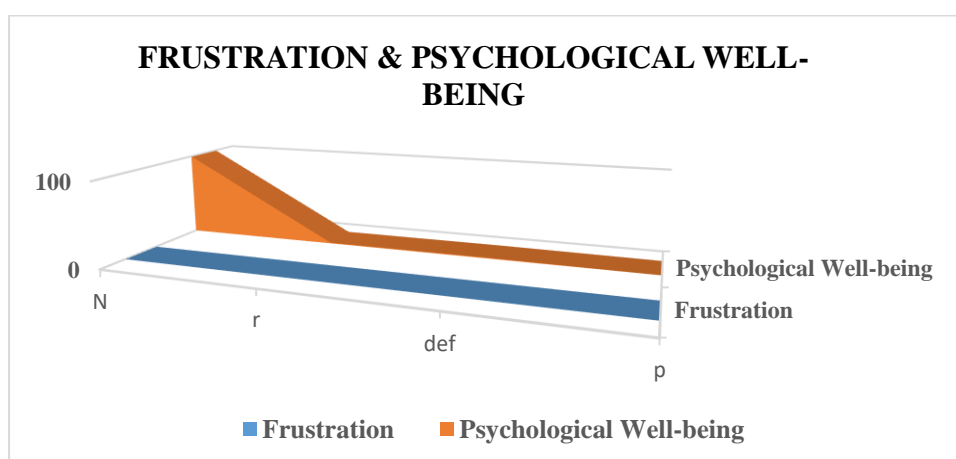
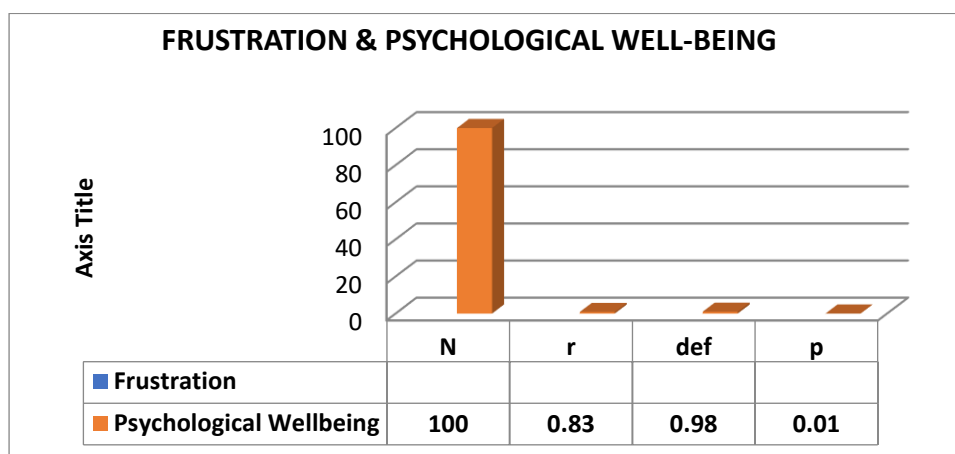
Independent variable- Sportsmen

Dependent variable- 1) Frustration 2) Psychological Well-being

Data Analysis and Discussion:

Pearson 'r' showing the significance of relationship between frustration and Psychological Well-being of sportsmen.

<i>Dimensions</i>	<i>N</i>	<i>r</i>	<i>df</i>	<i>p</i>
Frustration				
Psychological Well-being	100	.83	.98	0.01



The results displayed in above table clearly indicated the significant relation between frustration and Psychological Well-being of sportsmen. The significant correlation ($r = 0.83$, $df = 98$, $P < .01$). Positive correlation found in between frustration and Psychological Well-being. It mean whenever increase frustration in that time aggression level is high (low performance). The frustration-aggression hypothesis has been proposed

to explain human aggressive behaviors, maintaining that aggression is caused by frustration (Bird and Cripe, 1986; Gill, 1986; Husman and Silva, 1984).

Psychologist found that people who tend to perceive things negatively need to understand themselves and their reactions to stress-provoking situations better. Then they can learn to manage stress more successfully. Martin (1976) found that the contention that competitive sport generates either catharsis or increased aggression, depending upon the outcome of the game. Martin administered the Rosenzweig Picture-Frustration Study to 32 male undergraduate students to determine the impact of winning and losing on participants' aggression: Individual sport athletes experienced more frustration than did team athletes upon losing; yet participants of both type of sport enjoyed reduction of aggression when they won (Nucci and Young-Shim, 2005). In this view, frustration occurs due to the blocking of one's efforts to achieve goals. Critics of the frustration-aggression hypothesis have questioned whether all frustration causes aggression. Although frustration sometimes leads to aggressive behavior, a direct causal relationship between frustration and aggression cannot always be claimed (Nucci and Young-Shim, 2005). In a sports context, the losing of a game can be an important factor eliciting frustration.

We should strive to improve the objectivity of the evaluation of psychological training effects. Combine psychological indicators, physiological indicators and behavioral indicators, combine laboratory observations and sports field qualitative evaluations, combine cross-sectional research and tracking research, and combine others evaluation with self-evaluation. Construct a structural model for evaluating the effects of sports psychology training. This is an important challenge for sports psychology and an important guarantee for the effectiveness of athletes psychological monitoring, psychological training and psychological counseling

Benefits of working with a Sport Psychology Coach:

1. Learn short and long term goal-setting techniques.
2. Utilize self-talk and routines to increase confidence.
3. Increase self-awareness through mindfulness techniques.
4. Handle anger and negative emotions better in competition
5. Develop leadership skills and improve group dynamics

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THE THERAPEUTIC AND NEUROPROTECTIVE EFFICACY OF READING: A DATA-DRIVEN ANALYSIS OF MENTAL AND PHYSICAL WELL-BEING OUTCOMES

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Introduction and Conceptual Framework:

Defining Well-being in Psychological and Physiological Contexts:

The concept of well-being, particularly in the context of behavioral medicine and public health, requires a robust, multidisciplinary definition that extends beyond mere absence of disease.

This analysis defines well-being through three interrelated domains: subjective well-being (SWB), objective mental health metrics (e.g., symptom severity for anxiety and depression), and measurable physiological parameters (e.g., heart rate, blood pressure, and neuroendocrine function). Emotional and physiological homeostasis are central to this framework, representing the body's ability to efficiently adapt to stressors.

Reading, often categorized as a passive leisure activity, is increasingly being contextualized in the scientific literature as a potent, accessible behavioral intervention. Research demonstrates that engaging with text exerts significant influence on the autonomic nervous system and fundamentally impacts long-term cognitive architecture. This report establishes that the act of reading is not simply a cognitive process but a dynamic interaction capable of modulating stress responses, providing clinical efficacy in mood disorders, and building resilience against neurodegenerative decline.

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Overview of Health Humanities and Bibliotherapy as an Evidence-Based Field:

Bibliotherapy is formally recognized as a health intervention within the context of the health humanities. It is defined as the reading of specific materials—ranging from psychoeducational texts to novels—prescribed by a health professional (such as a physician or clinical psychologist) to encourage and facilitate adequate coping with somatic or psychological problems [span_0](start_span)[span_0](end_span). This intervention incorporates foundational principles often utilized in structured treatments, such as Cognitive Behavioral Therapy (CBT), offering exercises designed to help readers overcome negative feelings [span_1](start_span)[span_1](end_span). Historically, the practice of bibliotherapy has drawn heavily on humanities disciplines, focusing on mechanisms such as identification, catharsis, and insight triggered by engaging with text.

[span_7](start_span)[span_7](end_span). While traditionally relying on qualitative analysis and reported



testimonies, often leading to terminological ambiguity and a perception of the practice as "more of an art than a science," there is a strong and necessary movement toward incorporating rigorous quantitative methodologies [span_9](start_span)[span_9](end_span). To establish definitive scientific validity, contemporary studies utilize randomized controlled trials (RCTs), standardized efficacy measures (Standardized Mean Difference, SMD), and emerging objective techniques, including functional Magnetic Resonance Imaging (fMRI) and physiological monitoring (ECG, eye-tracking) [span_10](start_span)[span_10](end_span). The World Health Organization has issued reports endorsing the meliorative powers of the arts, including literature, on mental and physical health, further underscoring the necessity of

high-quality quantitative data to support clinical integration [span_11](start_span)[span_11](end_span).

Structure of the Report and Key Areas of Investigation:

To provide a comprehensive assessment, this report systematically investigates the evidence across three primary, yet interconnected, domains: 1) Immediate and Acute Physiological Regulation, specifically focusing on the hypothalamic-pituitary-adrenal (HPA) axis and cardiovascular metrics; 2) Clinical Mental Health Intervention, detailing the specific efficacy of bibliotherapy in affective disorders; and 3) Long-Term Cognitive Resilience, exploring the neuroprotective benefits of reading habits throughout the lifespan.

Immediate and Acute Physiological Impact: Stress Reduction and HPA Axis Modulation (Physical Well-being):

Reading as a Rapid Stress-Reducing Activity:

Leisure reading demonstrates exceptional efficacy in providing immediate, measurable relief from acute psychological stress. A core finding in behavioral medicine literature is derived from a 2009 study conducted by Mindlab International at the University of Sussex, led by cognitive neuropsychologist Dr. David Lewis. This research revealed that engaging in the activity of reading for as little as six minutes can lower physiological stress levels by as much as 68% [span_13](start_span)[span_13](end_span)[span_14](start_span)[span_14](end_span)[span_15](start_span)[span_15](end_span).

This quantitative efficacy places reading significantly ahead of other common stress-relieving activities. For context, the study demonstrated that reading was more successful at reducing stress than listening to music (a 61% reduction), drinking tea or coffee (a 54% reduction), or taking a walk (a 42% reduction) [span_16](start_span)[span_16](end_span)[span_17](start_span)[span_17](end_span)[span_18](start_span)[span_18](end_span). The magnitude and speed of this effect underscore reading's utility as a rapid and accessible form of self-care.

The Physiological Mechanism of Action:

The mechanism underlying this profound stress reduction involves a swift cognitive diversion that disrupts the body's established stress response cascade. When an individual reads and becomes engrossed in a text, the concentration required engages the rationalization areas of the brain, specifically the prefrontal cortex. This shift in neural focus effectively pulls attention away from the source of stress, causing the body to temporarily suspend

the "fight or flight" emergency response [span_19](start_span)[span_19](end_span).

Physiologically, this translates directly to measurable changes in the autonomous nervous system. The act of reading allows the body to interrupt the continuous signaling of the stress pathway, resulting in a slowing of the heart rate and a decrease in the production and circulation of cortisol, the primary stress hormone synthesized in the adrenal glands [span_21](start_span)[span_21](end_span). This cognitive-physiological decoupling causes the fear center of the brain (the amygdala) to become less active, while the rationalization areas take over, empowering what researchers refer to as the "anxiety brake" ``. This transition results in a subjective feeling of calmness and a physiological state of reduced tension in the muscles and cardiovascular system [span_27](start_span)[span_27](end_span)[span_28](start_span)[span_28](end_span).

The powerful magnitude of the reported 68% stress reduction figures, which are frequently cited in public health and wellness discourse, emphasizes the need for rigorous scientific confirmation regarding the precise physiological shifts. Although clinical commentary confidently links reading to reduced heart rate and cortisol levels `` , future randomized controlled trials must specifically seek to replicate these acute effects using standardized, objective measures, such as pre- and post-intervention salivary cortisol collection or heart rate variability (HRV) monitoring. This focus on objective physiological markers will strengthen the foundation for public health recommendations by providing highly cited, primary quantitative evidence fully supporting the magnitude of the 68% stress abatement claim.

Reading and Cardiovascular Regulation:

The systemic impact of reading extends directly to cardiovascular health, primarily through its proven ability to regulate the HPA axis. Stress hormones like cortisol trigger a cascade that causes the heart rate to increase, digestion to slow, and sleep to become fragmented .

Chronically elevated stress levels also lead to spikes in blood pressure. Persistently high blood pressure puts individuals at a significantly greater risk for serious cardiovascular diseases and stroke .

Because reading effectively reduces the circulating load of stress hormones and slows the heart rate, it provides a means for the cardiovascular system to operate less strenuously. By serving as an engaging distraction, reading enables the body to "forget about the stress," causing the heart to not have to work as hard, and allowing cortisol levels to decrease ``. Therefore, reading is a valuable non-pharmacological component of stress management essential for maintaining optimal heart health.

Nuance in Reading Modality and Context:

While the physiological benefits of *leisure* reading are clear, the benefits derived are highly contingent upon the affective context of the activity. A critical nuance emerges when examining reading performed under duress or performance pressure. For instance, studies monitoring children engaging in routine school tasks, specifically reading *aloud*, observed rapid and highly significant increases in both blood pressure and heart rate [span_29](start_span)[span_29](end_span). In these cases, a substantial number of systolic and diastolic readings exceeded the 95th percentile of normal pressure for the child's age and sex.

This contrasting evidence suggests that the physical benefit of reading is fundamentally linked to its purpose. Reading pursued for absorption, imagination, and escape—where the individual enters an "altered state of consciousness"—is acutely beneficial [span_31](start_span)[span_31](end_span). Conversely, reading performed under evaluation or performance pressure can provoke a counterproductive cardiovascular stress response ``. This contextual dependency must be considered when recommending reading as a generalized stress-relief tool.

Table I. Acute Physiological Benefits of Leisure Reading

Activity	Stress Reduction (%)	Time Required (Minutes)	Key Physiological Outcomes
Reading (Book)	68%	≤ 6	Decreased Heart Rate, Reduced Cortisol Levels, Muscle Relaxation
Listening to Music	61%	N/A	Relaxation
Drinking Tea/Coffee	54%	N/A	Relaxation
Taking a Walk	42%	N/A	Relaxation

Clinical Efficacy of Reading Interventions: Bibliotherapy (Mental Well-being):

Efficacy in Affective Disorders: Meta-Analysis Findings:

Bibliotherapy has been subjected to multiple systematic reviews and meta-analyses to establish its objective clinical efficacy in treating emotional, physical, and mental health problems. Overall, these analyses confirm that bibliotherapy is an effective form of psychological treatment, either alone or with minimal therapist support [span_32](start_span)[span_32](end_span)[span_33](start_span)[span_33](end_span).

A systematic review focusing on adolescent cohorts found that at post-treatment, bibliotherapy was significantly more effective than control conditions in reducing symptoms of depression or anxiety. The pooled effect size was reported as a Standardized Mean Difference (SMD) of -0.52, with a 95% Confidence Interval (CI) ranging from -0.89 to -0.15 . Furthermore, the acceptability of bibliotherapy remains high, with no [span_2](start_span)[span_2](end_span)statistically significant increase in all-cause discontinuations compared to controls (Risk Ratios, \$1.66\$; \$95\%\$ CI: \$0.93\$ to \$2.95\$) .

Differential Disorder Response:

A nuanced examination of the meta-analytic data reveals that the effectiveness of bibliotherapy is differential across specific affective disorders.

- 1. Depression:** Bibliotherapy demonstrated a robust and statistically significant effect in studies involving depressive patients, particularly adolescents. The effect size was substantially greater than the pooled average, reported as SMD = -0.78, with a 95% CI of -1.42 to -0.14 (p=0.02) ``. The structured, psychoeducational nature of CBT-based bibliotherapy appears particularly well-suited for addressing the cognitive distortions and behavioral deficits associated with depression.

2. **Anxiety:** For patients presenting primarily with anxiety symptoms, the effects were less pronounced. In the adolescent cohorts studied, the effect size for anxiety patients was reported as $SMD = -0.36$, with a 95% CI of -0.88 to 0.17 . Critically, this result was not statistically significant ($p=0.18$). Although older meta-analyses suggested some benefit for anxiety-related problems in adults (span_34)(start_span)(span_34)(end_span), the more recent, disorder-specific quantitative evidence indicates less robust findings for anxiety compared to depression.

This differential response has significant clinical implications. Given the cost-effectiveness and accessibility of bibliotherapy, the strong statistical effect in depression supports prioritizing this modality as a viable, first-line intervention for individuals with mild-to-moderate depressive symptoms. However, the less robust findings for primary anxiety disorders suggest that standalone bibliotherapy may be insufficient for conditions requiring active behavioral components, such as exposure therapy. For severe anxiety, bibliotherapy should potentially be integrated as an adjunctive tool, requiring supplementation with more intensive, guided professional support to achieve equivalent efficacy. The work of influential researchers such as Andersson, Carlbring, and Cuijpers has been critical in defining the quantitative landscape of these internet-based and bibliotherapeutic CBT interventions (span_35)(start_span)(span_35)(end_span)(span_36)(start_span)(span_36)(end_span).

Intervention Methodology and Therapeutic Mechanisms:

The efficacy of bibliotherapy appears to be well-maintained even when self-administered. Early meta-analyses, such as one conducted by Scogin et al. (1990), reported robust effect sizes ($d = 0.96$) for self-administered bibliotherapy treatments over controls. When minimal therapist contact was included, the effect size increased slightly ($d = 1.19$), suggesting that professional guidance, even if minimal, enhances the therapeutic outcome (span_37)(start_span)(span_37)(end_span).

The underlying mechanisms that confer therapeutic benefits are parallel to those observed in formal psychotherapy. Researchers emphasize the polysemic capacity of text to trigger psychotherapeutic processes. These include facilitating identification with characters' experiences, providing a safe space for catharsis of pent-up emotions, and enabling cognitive insight into one's own emotional patterns and potential coping strategies. By integrating text with psychological principles, bibliotherapy facilitates the acquisition of new coping skills and constructive self-emotional regulation.

(span_38)(start_span)(span_38)(end_span)(span_39)(start_span)(span_39)(end_span).

Table II. Meta-Analytic Efficacy of Bibliotherapy in Adolescent Mood Disorders

Target Disorder	Effect Size (SMD)	95% Confidence Interval (CI)	Statistical Significance (p-value)	Clinical Finding
Depression or Anxiety (Combined)	-0.52	[-0.89 to -0.15]	Statistically Significant	Effective vs. control conditions.
Depressive Patients	-0.78	[-1.42 to -0.14]	p = 0.02	Significantly greater benefit than controls.
Anxiety Patients	-0.36	[-0.88 to 0.17]	p = 0.18	Less robust; not significantly different from zero.

Long-Term Cognitive and Neural Health Benefits (Mental Well-being):

Reading and Cognitive Reserve (CR):

Habitual engagement with reading is a fundamental component in maintaining long-term neurological health, primarily through the build-up of Cognitive Reserve (CR). CR is conceptualized as a mental buffer, allowing the brain to better compensate for the structural and functional changes associated with aging, injury, or underlying neurodegenerative diseases .

[span_40](start_span)[span_40](end_span)[span_41](start_span)[span_41](end_span).

By actively engaging complex neural circuits, reading helps the brain function at a higher level, even in the presence of age-related pathological changes [span_42](start_span)[span_42](end_span).

Longitudinal Evidence of Neuroprotection:

Longitudinal studies provide compelling evidence of the protective nature of frequent reading against cognitive decline. A 14-year longitudinal study of older adults confirmed that individuals identified as frequent readers (those reading at least once per week) exhibited a significantly reduced risk of cognitive decline across all follow-up measures.

[span_46](start_span)[span_46](end_span)[span_48](start_span)[span_48](end_span).

Specifically, after adjusting for relevant covariates, frequent readers were found to be less likely to exhibit cognitive decline at the 6-year, 10-year, and 14-year follow-up intervals. The adjusted odds ratio (AOR) for cognitive decline for frequent readers versus those with lower frequency was 0.54 (95% CI: 0.34-0.86) at 14 years, illustrating a robust long-term protective effect across all educational levels [span_50](start_span)[span_50](end_span). Further research reinforces this, showing that elderly individuals who maintain mental activity, including reading, writing letters, or playing games, developed the clinical symptoms of Alzheimer's disease approximately five years later than their less cognitively active peers ``.

Neurobiological Mechanisms of Cognitive Reserve:

The protective effects of CR are theorized to manifest on a neurobiological level through two interrelated phenomena observed via neuroimaging: neural reserve and neural compensation.

[span_51](start_span)[span_51](end_span).

Neural Reserve: In healthy individuals, higher CR is associated with greater neural efficiency. This is often observed as lower neural activation when performing tasks of low or moderate difficulty, indicating that the cognitive process requires less energy or resource allocation.

Neural Compensation: When faced with high-difficulty tasks or in the presence of pathology, individuals with high CR may exhibit higher neural activation, suggesting the successful recruitment of alternative or compensatory neural networks to maintain performance capacity .

[span_52](start_span)[span_52](end_span).

Studies using fMRI have explored the neural correlates of reading interventions, confirming that intensive instruction and habitual reading activities modify brain activation patterns. These interventions specifically lead to neuroplastic changes, enhancing crucial processes such as orthographic-phonological mapping and sentence comprehension, particularly in the left fusiform gyrus and related areas.

[span_53](start_span)[span_53](end_span)[span_54](start_span)[span_54](end_span).

The Multiplier Effect: Reading, Emotion, and Social Intelligence:

The long-term benefits of reading extend beyond pure cognitive function to encompass emotional and social intelligence. Reading requires and cultivates sophisticated emotional processing capabilities. For instance, empirical research has demonstrated that students who effectively employ emotion monitoring strategies (such as recognizing anxiety or frustration) during reading show improved comprehension scores ($p < 0.01$), indicating that addressing emotional dimensions is crucial for optimal learning [span_55](start_span)[span_55](end_span). Hierarchical regression analysis revealed that emotion monitoring strategies explained 34% of the variance in reading improvement beyond baseline scores ($R^2 = 0.34$, $F(3,116) = 19.87$, $p < 0.001$)

[span_56](start_span)[span_56](end_span).

Furthermore, a direct relationship between reading competence and emotional intelligence (EI) has been observed in adolescents, with reading habits serving as a stimulatory factor.

[span_57](start_span)[span_57](end_span). The profound effect of reading on social understanding is highlighted by meta-analytic data demonstrating that fiction reading specifically leads to a small but statistically significant improvement in social-cognitive performance (Theory of Mind and empathy) compared to non-fiction reading or no reading (Hedges' $g \approx 0.15-0.16$) [span_58](start_span)[span_58](end_span).

These findings indicate that reading is a complex behavioral intervention that acts as a catalyst for holistic psychological development. The cognitive gains (CR and comprehension) are inextricably interwoven with enhanced emotional and social competencies (EI and empathy), creating a powerful positive feedback loop that promotes subjective well-being and facilitates lifelong psychological adjustment alongside neurocognitive success [span_60](start_span)[span_60](end_span).

Table III. Longitudinal Evidence of Reading Frequency and Cognitive Decline Risk

Reading Frequency	Follow-up Duration (Years)	Outcome Measure	Adjusted Odds Ratio (AOR)	95% Confidence Interval (CI)
Higher (≥ 1 time/week) vs. Lower	6	Cognitive Decline Risk	0.54	[0.34–0.86]
Higher (≥ 1 time/week) vs. Lower	10	Cognitive Decline Risk	0.58	[0.37–0.92]
Higher (≥ 1 time/week) vs. Lower	14	Cognitive Decline Risk	0.54	[0.34–0.86]

Modality, Content, and Contextual Factors: A Nuanced Approach:

The Critical Role of Reading Modality on Physical Health (Sleep and Vision):

While the cognitive and emotional benefits of reading are well-established, the physical health outcomes are highly dependent on the chosen modality (print versus digital). This distinction is critical for maximizing the holistic benefits of the activity, particularly those related to stress reduction and restoration.

Disruption of Circadian Rhythms by Digital Devices:

Light-emitting electronic books (LE-eBooks), such as tablet computers, utilized in the hours immediately preceding bedtime, demonstrably interrupt the body’s natural circadian clock and adversely impact overall health and alertness [span_62](start_span)[span_62](end_span).

Research from Brigham and Women’s Hospital found that the short-wavelength enriched light, commonly known as blue light, emitted by these devices suppresses the secretion of melatonin, the neurohormone essential for regulating the sleep/wake cycle [span_63](start_span)[span_63](end_span).

Participants reading on an iPad for four hours before sleep took longer to fall asleep, experienced a reduction in evening sleepiness, reduced secretion of melatonin, and a reduction in next-morning alertness compared to when they read a printed book [span_64](start_span)[span_64](end_span). Since high-quality sleep is crucial for stress recovery and cardiovascular health, the use of LE-eBooks actively compromises the very physiological benefits (cortisol and heart rate reduction) that reading is intended to provide ``.

Ocular Health and Digital Strain:

In addition to circadian disruption, digital reading modalities are associated with higher rates of physical discomfort and ocular strain. A pilot study comparing digital and print reading reported significantly higher rates of eyestrain ($p = 0.008$) and irritation ($p = 0.011$) among the iPad study group compared to the print control group [span_65](start_span)[span_65](end_span).

Furthermore, the digital reading group was found to be 4.9 times more likely to report severe eyestrain (95% CI: [1.4, 16.9]) [span_66](start_span)[span_66](end_span). This suggests that prolonged viewing of e-readers is not physiologically equivalent to the observation of printed text under similar viewing conditions [span_67](start_span)[span_67](end_span)[span_68](start_span)[span_68](end_span).

Moreover, comparative studies evaluating reading modalities in college students indicated that paper text reading and audio reading modalities conferred a greater positive impact on mental health and quality of life, with e-text reading and video reading modalities proving less effective.

[span_69](start_span)[span_69](end_span). This body of evidence suggests a critical public health paradox: reading is an exceptionally potent stress reducer, yet the popular digital formats used for reading actively impede the physiological mechanisms (sleep, ocular health) necessary for holistic well-being and recovery. Therefore, maximizing the therapeutic potential of reading requires explicit recommendations for non-light-emitting or printed formats, particularly in the evening.

Content Specificity: Fiction, Non-Fiction, and Social Well-being:

While the physical act of reading promotes relaxation regardless of content, the type of material consumed influences specific cognitive and emotional outcomes.

The reading of fiction, specifically, has been demonstrated to foster enhanced social cognitive skills. A meta-analysis of experimental data confirmed that fiction reading causally improves abilities such as Theory of Mind and empathy, achieving a small but significant effect size (Hedges' g approx 0.15-0.16) when compared to non-fiction reading or control conditions .

Fiction provides a low-stakes avenue for mentally engaging with complex social situations and inner mental states, promoting an active engagement of the imagination .

More generally, reading habits are strongly associated with increased Subjective Well-being (SWB). Frequent engagement with reading enhances academic success and general knowledge, which are recognized antecedents to social and career benefits that contribute significantly to overall well-being . Individuals who utilize reading as a self-care strategy benefit from the sense of purpose and accomplishment derived from finishing books or learning new concepts, further supporting positive mental health outcomes and potentially mitigating depression and loneliness .

Conclusion and Future Directions:

Synthesis of Key Findings:

The role of reading in mental and physical well-being is substantiated by rigorous quantitative data across multiple disciplines. Reading functions as a dual-action intervention, delivering both rapid physiological regulation and profound long-term cognitive protection.

Physiological Efficacy: Reading provides rapid, superior acute stress reduction, reducing physiological strain by 68% within six minutes, effectively modulating the HPA axis by lowering heart rate and cortisol levels and offering consequential cardiovascular benefits .

[span_70](start_span)[span_70](end_span)[span_71](start_span)[span_71](end_span).

Clinical Efficacy: Structured bibliotherapy is an effective treatment for emotional disorders, demonstrating particularly strong and statistically significant efficacy in treating depressive symptoms (SMD = -0.78) ``.

Neurocognitive Protection: Habitual reading is a powerful mechanism for building Cognitive Reserve,

demonstrably reducing the long-term risk of cognitive decline (AOR 0.54 at 14 years) across the aging population ``.

Modality Dependency: Physical health benefits, specifically concerning stress recovery and sleep hygiene, are maximized when utilizing printed or non-light-emitting modalities, as light-emitting digital screens interfere with melatonin production and increase ocular strain .

[span_72](start_span)[span_72](end_span)[span_73](start_span)[span_73](end_span).

Gaps in Research and Methodological Challenges:

Despite the overwhelming positive evidence, several methodological and structural challenges persist. While the health humanities are increasingly leveraging data, there is a recognized deficit of quantitative and mixed-method studies using advanced neurobiological monitoring (e.g., fMRI, ECG) to definitively consolidate the underlying mechanisms of bibliotherapeutic effects, often relying instead on qualitative reports ``. Addressing this gap will require standardized protocols and objective outcome measures to move the field unequivocally into the realm of evidence-based practice.

Perhaps the most significant challenge to leveraging reading as a public health intervention is the substantial barrier of adult literacy. The therapeutic and neuroprotective benefits described herein are inaccessible to large segments of the population. Current data indicates that more than half of adults read below a sixth-grade level, and 28\% of U.S. adults score at or below Level 1 literacy, demonstrating significant difficulty with everyday reading tasks [span_74](start_span)[span_74](end_span). This stark reality defines a fundamental public health challenge: widespread reading intervention is necessary not only for academic and professional success but as a prerequisite for engaging in a highly effective, accessible behavioral strategy for lifelong physical and mental health [span_75](start_span)[span_75](end_span).

Policy and Clinical Recommendations:

Based on the synthesis of quantitative and longitudinal evidence, the following recommendations are presented for clinical practice and public health policy:

Integrate Bibliotherapy into Primary Care: Given its proven efficacy and cost-effectiveness, particularly for depression, structured CBT-based bibliotherapy should be systematically integrated into primary care and mental health referral pathways as a first-line or low-intensity treatment option.

Promote Print for Physiological Regulation: Public health campaigns aimed at stress management and sleep hygiene must clearly differentiate between reading modalities.

Individuals should be advised to favor traditional printed books or non-light-emitting e-readers, especially in the evening, to maximize physiological benefits, avoid melatonin suppression, and reduce ocular discomfort.

Prioritize Reading as a Lifespan Neurocognitive Strategy: Reading should be promoted throughout the lifespan—from adolescence (where it simultaneously builds cognitive competence and emotional intelligence) through older adulthood—as a principal, non-pharmacological strategy for building and maintaining Cognitive

Reserve, thereby mitigating the societal burden associated with neurodegenerative diseases and age-related decline.

Resource Foundational Literacy Programs: Policy initiatives must allocate substantial resources to adult literacy programs. Improving foundational reading skills is essential to ensure that the proven benefits of reading are equitably accessible across all socioeconomic and educational strata.

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ARTIFICIAL INTELLIGENCE AND ITS APPLICATIONS IN PSYCHOLOGY: A REVIEW OF RESEARCH

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Abstract:

Artificial Intelligence (AI) has emerged as one of the most transformative technologies influencing contemporary psychological science. Over the past decade, rapid advancements in machine learning, natural language processing (NLP), deep learning, and predictive analytics have reshaped the ways psychologists measure behavior, analyze mental processes, and deliver psychological interventions. This review synthesizes contemporary empirical literature on the integration of AI in psychological assessment, diagnosis, intervention, and research methodologies. Findings indicate that AI improves diagnostic accuracy, enhances mental-health service accessibility, strengthens predictive modeling of behavior, and assists in understanding complex psychological phenomena through large-scale data analytics. However, the integration of AI in psychology also raises significant ethical concerns, including algorithmic bias, privacy risks, and threats to therapeutic relationships. The review concludes by outlining future research priorities, emphasizing the need for ethical frameworks, transparent algorithms, cross-disciplinary collaboration, and culturally sensitive AI systems. AI's role in psychology continues to evolve, offering substantial promise but requiring careful regulation and ethical oversight.

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Introduction:

Artificial Intelligence (AI) is increasingly embedded in multiple domains of human functioning, and psychology is no exception. Defined broadly, AI refers to computer systems capable of performing tasks that traditionally required human intelligence, such as reasoning, learning, decision-making, and problem-solving (Russell & Norvig, 2021).

Over the last decade, psychological researchers and clinicians have incorporated AI-based tools into assessment, diagnosis, intervention, and behavioral prediction. The growing availability of digital data—from smartphones, wearable devices, and online behavior—has strengthened AI's capacity to analyze psychological patterns that were previously inaccessible (Goodfellow et al., 2016). As AI systems evolve, psychology stands at a crucial intersection of technological innovation and human behavior analysis.

AI in Psychological Assessment:

AI technologies have improved the precision, consistency, and ecological validity of psychological assessment. Machine learning (ML) algorithms analyze patterns in large datasets, offering insights into cognitive functioning

and personality. For instance, ML models interpret cognitive test data by examining reaction times, error rates, and decision-making patterns, leading to early detection of cognitive impairments such as dementia (Sabbagh et al., 2020). Natural language processing (NLP) is used to score open-ended responses in personality assessments, identifying linguistic markers corresponding to Big Five personality traits (Park et al., 2015). Similarly, wearable devices and smartphones provide continuous data on sleep cycles, mobility, and social behavior; AI interprets this information to assess psychological states like stress, mood instability, and social withdrawal (Cornet & Holden, 2018). These systems offer more objective insights than traditional self-report measures but require culturally sensitive algorithms to avoid biased interpretations (Himmelboim et al., 2020).

AI in Psychological Diagnosis:

AI supports diagnostic processes by identifying subtle behavioral and biological patterns associated with mental-health disorders. Speech and language analysis has proven highly effective, with deep learning models detecting symptoms of depression, bipolar disorder, and schizophrenia by analyzing pitch, tone, coherence, and speech rate (Low et al., 2020). Computer vision tools analyze facial expressions, micro-expressions, and gaze patterns to detect conditions such as autism spectrum disorder with remarkable accuracy (Bone et al., 2017). Additionally, digital phenotyping—tracking behavioral data from smartphones—has become a powerful diagnostic tool. Reduced mobility, irregular sleep, and decreased social media activity strongly correlate with depressive symptoms (Torous & Onnela, 2018). These diagnostic innovations reduce the subjectivity inherent in traditional assessment methods. However, AI diagnostic systems must be validated to prevent cultural and demographic biases that could result in misclassification (Buolamwini & Gebru, 2018).

AI-Based Interventions and Psychotherapy:

AI is transforming mental-health intervention through automated support tools, personalized therapy, and enhanced therapeutic analysis. AI-driven chatbots such as Woebot and Wysa offer cognitive-behavioral therapy (CBT)-based conversations, providing accessible mental-health support. Studies show that chatbot-based therapy significantly reduces short-term depressive symptoms (Fitzpatrick et al., 2017). Beyond chatbots, machine learning enables personalized therapy by predicting which interventions are most effective for specific individuals (Kessler et al., 2019). AI tools analyze therapy session transcripts to detect emotional tones, interruptions, and cognitive distortions, giving therapists valuable feedback for improving techniques (Imel et al., 2019). Virtual reality (VR) exposure therapy, powered by AI, helps treat phobias, PTSD, and anxiety by adjusting stimuli intensity in real-time based on physiological responses (Maples-Keller et al., 2017). Neurofeedback and biofeedback systems further utilize AI to analyze EEG and biometric signals, helping clients develop emotional regulation strategies (Enriquez- Geppert et al., 2017).

AI in Behavioral Prediction:

Predicting human behavior is essential for psychological research and practice. AI significantly advances this capability. Machine learning models predict mental-health crises, such as suicide attempts, with accuracy levels surpassing traditional clinical assessments (Kessler et al., 2017). These models analyze electronic health records,

therapy transcripts, and behavioral trends. AI also predicts academic performance, workplace engagement, and social behavior by interpreting digital footprints and communication patterns (Kosinski et al., 2015). Predictive systems are increasingly used to recommend personalized treatments, forecast therapy outcomes, and identify individuals at risk of relapse in mental-health conditions (Chekroud et al., 2016). While predictive AI has immense utility, its use raises concerns regarding privacy, labeling, and potential discrimination.

AI in Psychological Research:

AI transforms research methodology in psychology by enabling large-scale data analysis, automating coding processes, and improving measurement precision. AI programs automate transcription, categorize qualitative data, and detect emotional tones in open-ended responses (Honnibal & Montani, 2019). Machine learning models simulate cognitive processes such as memory, perception, and decision-making, offering insights into underlying brain mechanisms (Friston, 2019). With AI, researchers can analyze massive datasets from social media, health apps, and wearable sensors. These big-data analyses reveal population-level trends in mental health, personality, and social behavior (Mehl & Pennebaker, 2019). AI-powered research tools enhance replicability, accuracy, and theoretical development in psychological science.

Ethical and Practical Challenges:

Despite notable advantages, AI applications in psychology pose critical ethical challenges. Algorithmic bias remains a major concern, particularly when AI systems are trained on datasets that underrepresent certain communities. Such biases may lead to inaccurate predictions or diagnoses for marginalized populations (Buolamwini & Gebu, 2018). Privacy concerns arise from the collection of sensitive behavioral data through smartphones and wearables (Torous et al., 2020). In psychotherapy, AI may undermine the human connection essential for building trust and therapeutic alliance (Bendig et al., 2019). Additionally, the absence of universally accepted ethical guidelines and regulations complicates the safe integration of AI into clinical and research settings. Transparent, accountable, and culturally aware AI systems must be prioritized to ensure equitable psychological support.

Conclusion:

Artificial Intelligence has significantly influenced psychological science by enhancing assessment accuracy, diagnostic precision, intervention accessibility, and predictive power. From automated behavioral tracking to AI-driven therapy, AI provides innovative tools that support mental-health professionals and expand research capabilities. However, ethical concerns—algorithmic bias, privacy risks, and potential threats to the therapeutic relationship—require careful attention. Responsible and ethical integration of AI will shape the future of psychology, ensuring that AI innovations benefit diverse populations while safeguarding human dignity, autonomy, and emotional well-being.

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STRESS MANAGEMENT AND COPING STRATEGIES AMONG INDIVIDUALS IN COMPETITIVE ENVIRONMENTS

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Abstract:

In today's world, competition has become an unavoidable part of academics, work, and even personal ambitions. This constant pressure often creates significant stress as individuals try to meet expectations, chase deadlines, and maintain consistent performance. Under such conditions, stress emerges as both a psychological and physiological response to situations perceived as challenging or overwhelming.

This study investigates how individuals in Nashik's competitive environments manage stress and the coping strategies they adopt. Using a quantitative approach, the research employs correlation and linear regression in order to assess the association among stress and various coping methods. Sample size of Fifty were selected through purposive sampling from an urban community that experiences diverse educational, professional, and socio-cultural demands. This research contributes region-specific insight by examining how individuals in Nashik perceive and handle competitive stress within evolving academic and professional settings.

Data were gathered using standardized stress and coping scales from individuals across diverse professions and educational levels. The results show that higher stress levels are closely linked to the type and effectiveness of coping strategies used. Analysis done through Correlation indicates moderate negative relationship among stress as well as adaptive coping, meaning individuals with stronger coping mechanisms tend to report lower stress levels. Regression analysis further demonstrates that coping strategies significantly predict stress, highlighting their protective role.

The study concludes that stress-management interventions should focus on cognitive restructuring, mindfulness, resilience-building, emotional regulation, and problem-solving skills. Although limited by a small sample size, the findings offer valuable insights and point toward future research involving larger groups, mixed-method designs, and long-term studies on stress adaptation.

Keywords: *Stress management, coping strategies, competitive environment*

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Introduction:

Stress has become an unavoidable part of modern life, especially in competitive academic and workplace settings where people are constantly expected to perform at high levels. It often occurs when the demands placed on someone feel greater than their ability to handle them (Lazarus & Folkman, 1984). In fast-growing urban areas

like Nashik, individuals deal with academic pressure, workplace competition, financial responsibilities, and social expectations—all of which can significantly increase stress.

Long-term stress can negatively affect mental health, work performance, and decision-making (Cooper & Marshall, 2013). With increasing digital connectivity, people are pushed to multitask more and compare themselves to others online, adding to this pressure. Although stress has been widely researched, there is still limited information that focuses specifically on regional contexts, particularly in Indian cities where traditional values and modern competitive lifestyles intersect.

Coping strategies—whether problem-focused, emotion-focused, or avoidance-based—play an essential role in how people handle stress. Positive or adaptive coping builds resilience, while negative or maladaptive coping makes individuals more vulnerable (Carver et al., 1989). In a city like Nashik, where traditional expectations blend with modern challenges, understanding how people cope locally becomes especially important.

Concept

This study is based on key psychological theories that explain how stress and coping work. Hans Selye's General Adaptation Syndrome (1956) introduced a biological model of stress involving three stages: alarm, resistance, and exhaustion. Selye suggested that stress occurs when life's demands are too high for someone to adapt to, eventually leading to exhaustion if coping strategies fail. However, this model mainly focuses on physical responses and does not fully capture the mental processes involved in stress.

A more comprehensive understanding comes from Lazarus and Folkman's transactional model (1984), which sees stress to be a effectual give and take with a person and their environment. This model stresses upon cognitive appraisal i.e. how individuals interpret a situation and evaluate their coping abilities. From this viewpoint, stress becomes a subjective experience shaped by personal beliefs, past experiences, and emotional resilience.

Lazarus and Folkman also highlighted two main types of coping: problem-focused coping, which takes steps towards dealing straightly with stressor, and emotion-focused coping, which manages feelings related to the stressor. Later studies added avoidance coping, which is likely associated with negative effects. In competitive settings, the way a person interprets a situation-whether as a threat or a challenge-plays a major role. Emotional intelligence, confidence, personality, and social support all strongly influence coping. In India, cultural values, family involvement, and community networks also play important roles, particularly in developing cities like Nashik.

Significance of the Study:

This research is important as stress and coping have become increasingly relevant in today's competitive world. As academic, professional, and even social expectations grow, individuals are experiencing higher stress levels that affect their mental health, productivity, and relationships. Understanding stress in these competitive environments is essential for designing programs that improve overall well-being and performance.

The study is particularly valuable for Nashik, a rapidly developing city where competitive pressure is rising. It offers insight into how people in this region handle stress and the coping strategies they use. Since similar

localized studies are limited, this research helps fill an important gap and can guide mental health professionals, educators, and policymakers.

From a theoretical standpoint, the study deepens our understanding of how stress and coping are connected by using correlation and regression analysis. These methods show how strongly coping strategies can influence stress levels and support psychological theories that highlight coping as a protective factor.

Practically, the findings may help teachers, counsellors, and organizational leaders create more effective stress-management programs that build resilience, emotional regulation, and adaptive coping. As stress increasingly affects academic performance, job productivity, and overall life satisfaction, research-based interventions are becoming essential.

Review of Literature:

Cooper & Marshall, (2013). Studies show that competitive environments increase stress because of heavy demands, strict deadlines, multitasking, and constant evaluation.

Skinner & Brewer, (2002). According to the transactional model of stress, people who see competition as a threat feel more anxious, while those who view it as a challenge often feel more motivated.

Holahan & Moos, (1987). Research consistently finds that problem-focused coping effectively reduces stress, while avoidance coping is associated with burnout and emotional exhaustion. Emotion-focused coping can be helpful but may become harmful if it relies too heavily on denial or withdrawal.

Bakker & Demerouti, (2007). Workplace studies reveal that high workloads, tight deadlines, and unclear job roles increase stress, whereas autonomy and supportive work environments help reduce it.

Mishra & Gupta, (2016). In India, corporate employees often report high stress levels due to long working hours and intense performance expectations.

Kumari & Jain, (2014). For the students, academic competition-especially during exam periods-creates significant stress. Positive coping methods such as time management help keep stress low, while avoidance makes it worse. Many urban young adults use digital distractions to cope, but this often increases long-term stress (Singh & Aggarwal, 2020).

Petrides & Furnham, (2003). Emotional intelligence supports better coping by helping individuals regulate their emotions. Social support is also a major protective factor, especially in collectivistic societies like India (Cohen & Wills, 1985).

Kabat-Zinn, (2003). Mindfulness practices help people manage stress by improving emotional regulation and reducing overthinking. Resilience does essay an essential part in helping people recover from challenges and maintain performance (Masten, 2001).

Overall, the literature shows that adaptive coping reduces stress, while maladaptive coping heightens it. However, there is still little research specifically examining these patterns in Nashik's competitive environment, which highlights the need for this study.

Methodology:

Statement of the Problem:

To study stress management and coping strategies among individuals in competitive environment.

Objectives:

1. To assess the stress level between individuals working or studying in competitive environments in Nashik city.
2. To identify coping strategies adopted by individuals in competitive environments.
3. To examine association among stress and coping strategies using correlation and linear regression.

Hypotheses:

1. “There would be a significant relationship between stress and coping strategies.”
2. “Coping strategies would significantly predict stress levels among individuals.”
3. “There would be significant differences in stress levels based on the type of coping strategies used.”

Variables:

Dependent variable: Stress

Independent variable: Coping strategies

Operational Definitions:

Stress operationally put as score obtained on a standardized scale of stress measuring perceived stress levels arising from competitive demands, pressure, and performance expectations.

Coping strategies were operationally defined as the scores on the coping strategies inventory, reflecting the extent to which individuals employ problem-focused, emotion-focused, or avoidance-based coping behaviours.

Sample Selection:

Sample consisted of 50 individuals selected through purposive sampling from various competitive settings in Nashik city. Participants included students preparing for competitive examinations, employees working in performance-driven corporations, and individuals from sectors such as finance, sales, engineering, and education. Purposive sampling was deemed appropriate as it ensured the inclusion of individuals most exposed to competitive pressures. Participants ranged in age from 20 to 40 years and represented diverse educational and occupational backgrounds. Equal representation was maintained in gender distribution to enhance reliability and minimize sampling bias.

Measurements:

Two standardized instruments were used.

Perceived Stress Scale (PSS- 1983)

The first was a Perceived Stress Scale (PSS), very popular tool used in psychological studies to assess perceived stress, developed by Cohen et al. It measures how much individuals think about life as uncontrollable as well as overloaded. It has strong reliability (Cronbach’s α ranging from 0.78 to 0.91) and well-established validity across diverse populations.

Coping Strategies Inventory (CSI-1989)

The second tool used was Coping Strategies Inventory (CSI) by Tobin et al. in 1989, a widely applied in stress research. It measures problem-focused, emotion-focused, and avoidance-based coping strategies. CSI demonstrates strong reliability, with Cronbach’s alpha ranging from 0.71 to 0.94 across its subscales. It also shows solid construct validity.

Statistical Treatment

Data were analysed by Pearson’s correlation, simple linear regression and one way ANOVA.

Results and Interpretation:

Correlation Analysis between Stress and Coping Strategies

Table: Pearson Correlation between Stress and Adaptive Coping (N = 50)

Variables	r-value	p-value	Interpretation
Stress & Adaptive Coping	-0.47	< 0.01	Moderate Negative Correlation (Significant)

An analysis of correlation among stress as well as coping strategies was conducted to examine the strength and direction of their relationship. The correlation coefficient through Pearson was found to be **r = -0.47**, showing a moderate negative association among stress and adaptive coping strategies. The negative sign signifies that as adaptive coping increases, stress levels decrease. This relationship was statistically significant at **p < .01**, demonstrating that coping strategies play a meaningful part in determining stress levels among individuals operating in competitive environments. Thus, the first hypothesis stating that “*There would be a significant relationship between stress and coping strategies*” is **accepted**, as the results demonstrate a statistically significant association.

This result aligns with the foundational theories of Lazarus and Folkman (1984), emphasizing that coping mediates the relationship between stress and the person’s subjective appraisal of stressors. Moderate negative correlation supports the notion that adaptive coping methods such as problem-solving, emotional regulation, time management, and cognitive reframing substantially reduce perceived stress. The findings echo the conclusions of Carver et al. (1989), who suggested that individuals with strong problem-focused coping mechanisms experience lower stress because they engage actively with stressors rather than reacting passively. In the context of Nashik’s competitive environment, where individuals face multiple simultaneous demands, the use of structured coping strategies likely enhances resilience and reduces the vulnerability to stress.

Linear Regression Analysis Predicting Stress from Coping Strategies:

Table: Simple Linear Regression Analysis (N = 50)

Predictor Variable	β (Standardized Beta)	t-value	p-value	Interpretation
Coping Strategies	-0.52	-3.89	< 0.001	Significant Negative Predictor

Model Summary:

Statistic	Value
R	0.52
R ²	0.27
Adjusted R ²	0.25
F-value	15.13
Sig. (p)	< 0.001

To evaluate the predictive capacity of coping strategies on stress levels, a simple linear regression analysis was performed. Coping strategies were treated as the predictor variable, and stress was the outcome variable. The regression results indicated a standardized beta coefficient of $\beta = -0.52$, suggesting that coping strategies significantly and negatively predict stress levels. The t-value associated with this coefficient was $t = -3.89$, which was statistically significant at $p < .001$. The model described 27% of variance in stress ($R^2 = 0.27$), meaning that coping strategies account for approximately one-fourth of the differences in stress levels among individuals in competitive environments. Therefore, the second hypothesis stating that “Coping strategies would significantly predict stress levels among individuals” is accepted, based on the strong predictive power observed.

The regression results show that individuals using effective coping strategies are significantly less likely to experience high stress, whereas those lacking such strategies tend to exhibit elevated stress levels. The predictive strength of coping aligns with the theoretical work of Selye (1956), who argued that adaptation mechanisms determine whether stress leads to growth or exhaustion. The findings also support Job Demands-Resources Model by Bakker and Demerouti (2007), which emphasizes that resources which were personal like coping strategies strengthen resilience in demanding environments. In Nashik’s competitive landscape, where individuals face academic and workplace pressures, coping strategies serve as a stabilizing force that reduces stress.

Difference in Stress Levels Based on Type of Coping Strategy:

The third hypothesis of the study examined whether stress levels differed significantly based on the type of coping strategy used by individuals functioning in competitive environments. To explore this, participants were categorized according to their dominant style of coping, namely problem-focused coping, emotion-focused coping, and avoidance-based coping. To statistically determine whether the observed differences in levels of stress among three coping groups were significant, a One-way ANOVA was done. Results of the ANOVA are presented below.

Table: One-Way ANOVA for Stress across Three Coping Styles

Source	SS	Df	MS	F	p
Between Groups	468.32	2	234.16	8.72	< 0.001
Within Groups	1244.48	47	26.48		
Total	1712.80	49			

The ANOVA results indicated that the differences in stress levels among the three coping groups were statistically significant at $p < 0.001$, confirming that coping style has a substantial impact on stress levels. These results were further supported by the comparison of group means shown below.

Table: Mean Stress Scores across Coping Strategies

Coping Style	Mean Stress Level
Problem-Focused Coping	18.4
Emotion-Focused Coping	21.7
Avoidance Coping	27.2

The descriptive statistics showed clear variations in levels of stress among these three groups. Individuals who predominantly used problem-focused coping demonstrated the lowest stress levels with a mean score of 18.4. Those using emotion-focused coping exhibited moderately higher stress levels with a mean of 21.7. In contrast, individuals relying on avoidance coping reported the highest stress levels with a mean score of 27.2, indicating substantial emotional strain and reduced adaptive functioning.

In the competitive environment of Nashik, where individuals frequently confront performance expectations, deadlines, and multitasking demands, avoidance coping appears particularly harmful. Individuals who disengage from stressors are unable to reduce or manage external pressures, resulting in escalating stress over time. Therefore, based on both descriptive and inferential statistics, the hypothesis stating that “*There would be significant differences in stress levels based on the type of coping strategies used*” is **accepted**, demonstrating that coping style significantly influences stress experiences among individuals.

The statistical evidence clearly indicates that individuals using problem-focused coping experience significantly lower stress, supporting the perspective that active coping strategies facilitate better management of competitive pressures. These findings are consistent with Holahan and Moos (1987), who argued by saying problem-focused strategies help individuals modify or control stressors, thereby reducing their psychological impact. Emotion-focused coping demonstrated moderate effectiveness, as it assists individuals in managing emotional discomfort but does not directly resolve the underlying stressor. Avoidance coping was found to be the least effective and the most detrimental, with individuals reporting the highest stress levels. This pattern aligns with several studies that highlight avoidance coping as a maladaptive response that leads to psychological withdrawal, rumination, and long-term stress accumulation.

Conclusion:

1. The study shows that stress and coping strategies are closely related, indicating that individuals who use adaptive coping experience lower stress, whereas those with poor coping experience higher stress.
2. The findings reveal that coping strategies have a clear predictive influence on stress, demonstrating that better coping consistently contributes to reduced stress levels in competitive environments.
3. The results confirm that different coping styles create distinct stress outcomes, with problem-focused coping linked to lowest stress and avoidance coping linked to the highest stress.

Limitations :

1. Size of Samples was limited up to 50 people, this can reduce the applicability of findings.
2. Use of purposive sampling restricts the representativeness of the population and may introduce selection bias.
3. The study relied on self-report measures, which may lead to response bias or socially desirable answers.
4. The cross-sectional research design prevents establishing cause–effect relationships between stress and coping.

Suggestions :

1. Studies carried out in the coming times should employ large as well as diversified samples across varied occupations, age groups, and socio-economic levels to improve generalizability.
2. Interventions such as mindfulness training, resilience-building programs, cognitive-behavioural coping workshops, and emotional intelligence training should be evaluated for effectiveness in competitive environments.
3. Researchers should consider examining moderating variables such as personality, family support, organizational climate, and digital stress to gain a more comprehensive understanding of coping.

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THE PSYCHOLOGICAL MOTIVATION IN SPORTS

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Abstract:

The psychological motivation is defined as the internal energy force that dictates all facets of human behavior, influencing how individuals think, feel and interact with others. In competitive sport, high motivation is widely recognized as an essential prerequisite for athletes to fulfill their full potential. This paper explores the psychological motivation in sports primarily through the lens of Self-Determination Theory (SDT)I, which posits that motivation exists along a continuum ranging from amotivation to intrinsic motivation. SDT emphasizes the importance of three basic psychological needs—autonomy, competence, and relatedness—in fostering self-determined engagement. The highest motivational state, Flow, characterized by complete immersion and a perfect match between challenge and skill, is detailed. Furthermore, the recent research suggests that a blend of high extrinsic and high intrinsic motivation, provided the intrinsic foundation is strong, yields the most positive outcomes for adult athletes. Finally, the article outlines four evidence-based motivational techniques—goal setting, using extrinsic rewards informationally, motivational music, and positive self-talk—that coaches and practitioners can utilize to enhance sustained performance and psychological well-being.

Keywords: *Motivation, self-determination theory, athlete performance*

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Introduction:

Motivation is the internal process that initiates, directs, and sustains goal-oriented behavior. It shapes both the direction and the intensity of an individual's actions. In sport, the relentless drive required to train rigorously, compete at peak levels, and strive continuously for improvement often distinguishes elite performers. Dwight D. Eisenhower once captured this idea, stating that motivation is "the art of getting people to do what you want them to do because they want to do it". Motivation is crucial not only for performance outcomes but also for influencing an athlete's mental toughness, emotional regulation, enjoyment level, resilience and long-term commitment to the activity.

While motivation is abstract and sometimes elusive, elite athletes, such as the 45-year-old sprinter Merlene Ottey, who competed in her seventh Olympics in Athens in 2004, demonstrate an exceptional ability to channel their energies effectively. Motivation, in this context, is essentially about the direction of effort over a prolonged period of time.

The Self-Determination Continuum:

The behavioral regulations within SDT can be placed on a continuum, moving from the least self-determined to the most self-determined:

1. **Amotivation:** This represents a complete lack of intention to engage in a behavior. It is characterized by feelings of incompetence and a perceived disconnect between one's actions and the expected outcome. An amotivated athlete might state, "I can't see the point in training any more—it just tires me out". These athletes often experience a sense of helplessness and are highly prone to dropping out, sometimes requiring counseling.
2. **External Regulation:** This is a non-self-determined, or controlling, type of extrinsic motivation. The behavior is driven purely by external factors, and athletes do not sense their behavior is choiceful, leading to psychological pressure. Examples include participating solely to receive prize money, win a trophy/gold medal, or avoid negative evaluation or punishment.
3. **Introjected Regulation:** This is also a controlling form of extrinsic motivation, though the pressure is internalized. Athletes participate under internal pressure, such as feelings of guilt or to achieve recognition.
4. **Identified Regulation:** This marks the beginning of the self-determined types of extrinsic motivation, where behavior is initiated out of choice, although the activity itself might not be inherently enjoyable. The athlete engages in the behavior because it is highly valued.
5. **Integrated Regulation:** When a behavior becomes integrated, it is in harmony with one's sense of self and is almost entirely self-determined. For instance, completing daily flexibility exercises because the athlete realizes they are a crucial part of the overarching goal of enhanced performance represents integrated regulation. Identified and integrated regulations account for why athletes devote hundreds of hours to mundane drills; they realize the activity will help them improve.
6. **Intrinsic Motivation:** This is the most self-determined form, characterized by internal interest and enjoyment derived directly from sports participation. There are three specific subtypes:
 - *Intrinsic motivation to know.*
 - *Intrinsic motivation to accomplish.*
 - *Intrinsic motivation to experience stimulation.* Intrinsic motivation reflects an athlete's drive to perform an activity simply for the reward inherent in their participation.

Basic Psychological Needs:

SDT further posits that the quality of motivation is highly influenced by the satisfaction of three innate psychological needs:

1. **Autonomy:** The need to feel a sense of **control and agency** over one's actions and decisions. In sports, this involves having a say in training plans or selecting personal goals.
2. **Competence:** The need to feel **effective and capable** of achieving desired outcomes, requiring appropriate challenges and feedback to develop a sense of mastery.

3. **Relatedness**: The need to feel **connected, accepted, and supported** by others, emphasized by a positive team environment and supportive coach-athlete relationships.

When these needs are satisfied, athletes are more likely to experience intrinsic motivation and sustained effort, leading to improved performance. Conversely, if these needs are thwarted, motivation and performance may decrease.

Flow: The Ultimate Motivational State

According to Hungarian psychologist Mihalyi Csikszentmihalyi, *the highest level of intrinsic motivation is the flow state*.² Flow is defined by complete immersion in an activity to the degree that nothing else matters.

The core requirement for achieving flow is a **perfect match** between the perceived demands of an activity (challenge) and an athlete's perceived ability or skills. During flow, athletes lose self-consciousness and become "one with the activity". For example, a World champion canoeist described the paddle feeling like an extension of her arms while in flow.

Motivational imbalances prevent flow and result in different psychological states:

- An overbearing or unrealistic challenge relative to skill can cause **excess anxiety**.
- If athletes bring a high level of skill to an activity that provides a relatively low challenge—such as a world-class player like *Ronaldinho* playing in a minor football league—this can result in **boredom**.
- When both challenge and skill are low, the resulting state is **apathy**.

To promote flow, coaches must ensure athletes set realistic goals and introduce challenges that stretch them "just a touch further than they have been stretched before".

A qualitative study that explored "why does the 'fire' of elite athletes burn so brightly?" involved interviews with 10 elite Australian track and field athletes. The research aimed to demystify the differences between high achievers and "also-rans". Three overarching themes emerged:

1. Elite athletes set personal goals based on **both self-determined and extrinsic motives**.
2. They possessed a **high self-belief** in their ability to succeed.
3. Their sport was **central to their lives**—everything revolved around their involvement.

Using cluster analysis, two "motivation profiles" have been identified among adult athletes. The first profile was characterized by **high levels of both controlling (extrinsic) and self-determined (intrinsic) behavioral regulations**, while the second showed high self-determined and low controlling motivation. The first profile reported higher levels across eight positive motivation outcomes, including enjoyment, effort, positive affect, satisfaction, and frequency of attendance. This finding suggests that for adult athletes, the **simultaneous presence of high extrinsic and high intrinsic motivation** likely yields the most positive benefits.

However, the sources stress that it is absolutely **critical that extrinsic motives are nurtured on a firm foundation of high intrinsic motivation**. Without strong intrinsic motivation, athletes are prone to dropping out when faced with setbacks like injury, non-selection, or demotion. A follow-up study confirmed these profiles and also noted that participants in the highly motivated cluster (Cluster 1) reported better concentration on the task at hand.

Practical Motivational Techniques for Coaches and Athletes:

Coaches and analysts play a critical role in shaping motivation through their feedback and interactions. By creating a supportive and **autonomy-supportive environment**, coaches can foster intrinsic motivation, which is associated with increased performance and enhanced well-being. *Dr. Richard Ryan* noted that the most effective coaches are those who support the psychological needs of their athletes, cultivating a sense of autonomy, competence and relatedness.

Four evidence-based techniques are recommended for enhancing motivation:

1. **Goal Setting:** Goal setting works best when there is flexibility, and the individual athlete takes ownership of the goals; thus, coaches should exercise some democracy when setting goals, particularly with experienced athletes. *Athletes should be empowered to set their own goals to enhance acceptance and enthusiasm*³. Goal setting involves defining three time horizons:

- **Long-Term Goals:** These should be ambitious yet achievable, perhaps focusing on major championships several years away.
- **Medium-Term Goals:** These are set to keep athletes on track toward their long-term objectives. For example, *Kelly Sotherton* set the medium-term goal of winning the 2006 Commonwealth title on her path toward the 2008 *Beijing Olympics*.
- **Short-Term Goals:** In practical terms, these are the most important, as they keep athletes focused on the seminal checkmarks necessary for superior performance. Short-term goals should be predominantly **process-oriented**. For example, when *Wayne Rooney* was injured before the soccer World Cup, he set process goals like daily physiotherapy, remedial exercises in an oxygen chamber, and nutritional monitoring to regain fitness. Goals must be monitored and revised regularly.

2. **Using Extrinsic Rewards:** When utilizing extrinsic rewards, the key aspect, according to SDT, is ensuring they reinforce an athlete's sense of competence and self-worth. The reward must be **informational in nature rather than controlling**. If a reward becomes perceived as controlling, it can significantly undermine intrinsic motivation.

To maintain an informational focus, it is advisable that the reward has relatively little monetary worth (a **token reward**), such as a "woman of the match" title. The reward should be presented publicly, with emphasis placed on the associated prestige. Other popular token rewards include etching names on honors boards or awarding special items of clothing.

3. **Motivational Music:** Music that athletes perceive to be inspirational is a particularly effective way to enhance motivation during training and prior to competition. Research indicates that regulating work and recovery times with music—using loud/fast music during effort periods (like circuit training) and soft/slow music during recovery periods—can **increase work output, reduce perceived exertion, and improve in-task affect** (pleasure experienced during the activity).

4. **Positive Self-Talk:** It is a technique that uses an athlete's powerful inner voice to reinforce their self-esteem or vital aspects of performance. Appropriate repetition of self-talk can positively alter an athlete's belief

system. Three types of positive self-talk are used:

- **Task-Relevant Self-Talk:** Focuses the athlete's attention on the immediate task. *Example:* A karateka used the mantra 'pillar of power' to reinforce strong posture.
- **Mood-Related Self-Talk:** Impacts how athletes feel. *Example:* An international water skier used 'butterflies in formation' to ensure pre-competition anxiety worked for her instead of against her.
- **Positive Self-Affirmation Statement:** A direct claim reinforcing self-belief, most famously used by legendary boxer *Mohammed Ali*, who repeated the claim, "I am the greatest," so many times that even his opponents believed it. *Ali* himself noted: "I figured that, if I said it enough, I would convince the world that I really was the greatest".

Conclusion:

The psychological motivation is not just one component of athletic performance; it is the psychological engine driving persistence, goal-directed behavior, and excellence in sport. The core premise of SDT, exploring the continuum of motivational regulation, clarifies that while extrinsic motivation has its place, **intrinsic motivation**—rooted in personal satisfaction, enjoyment, and a sense of ownership—is the most powerful and enduring predictor of sustained commitment, psychological resilience, and overall well-being.

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THE IMPACT OF SOCIAL MEDIA USE ON MENTAL HEALTH AND WELLBEING: A COMPARATIVE ANALYSIS OF USERS AND NON-USERS

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Abstract:

The present study examined the influence of social media use on mental health and psychological well-being by comparing social media users and non-users among college students. The research was conducted in Chhatrapati Sambhaji Nagar District, Maharashtra, India. A total of 60 college students aged 18–25 years participated, comprising 40 active social media users and 20 non-users. Participants were selected through simple random sampling. Levels of depression and psychological well-being were assessed using the Beck Depression Inventory-II (BDI-II; Beck et al., 1996) and Ryff's Psychological Well-Being Scale (PWBS; Ryff, 1989), respectively. Data were analyzed using descriptive statistics (means and standard deviations) and independent-samples *t*-tests. Results indicated that social media users exhibited significantly higher depression scores than non-users. Conversely, non-users reported significantly higher levels of psychological well-being compared to their user counterparts. These findings suggest that social media engagement may be associated with poorer mental health outcomes and reduced eudaimonic well-being in this college student population.

Keywords: *social media, mental health, college students, depression, anxiety.*

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Introduction:

The proliferation of social media platforms—Instagram, TikTok, Snapchat, and X has transformed interpersonal communication, particularly among emerging young adults aged 13–24. In India, 90% of college students own smartphones, and 88% use social media for at least 3 hours daily. Distinctions between active (e.g., posting, commenting) and passive (e.g., scrolling, viewing) use are crucial, as both contribute to mental health outcomes but through different pathways. At the same time, research has increasingly linked high levels of social media use with mental health concerns, including anxiety, depression, and reduced subjective well-being (Keles et al., 2020; Vannucci et al., 2017). While many studies examine heavy users, comparatively fewer explore how non-users differ from regular users in psychological health. Non-users provide an important contrast group that may help isolate the direct influence of social media exposure on well-being.

Comparative studies highlight stark differences. Active users report higher anxiety and self-harm risks, while passive users experience increased loneliness and negative self-image. In contrast, non-users or those taking breaks show improved mood and well-being; for instance, a four-week deactivation enhances subjective well-

being by 25-40% of psychological intervention effects. Problematic social media use correlates moderately with depression ($r = 0.273$), anxiety ($r = 0.348$), and stress ($r = 0.313$) in youth. Exposure to upward social comparisons on platforms yields negative effects on mental health ($g = - 0.21$), body image, and well-being.

Although negative effects predominate, social media also offers benefits for some users. It can strengthen social connections, reduce stigma surrounding mental health issues, and provide emotional support—particularly during periods of isolation, such as pandemics. Mindful and active use, when practiced in moderation, can foster a sense of belonging and enhance self-esteem in balanced contexts.

Review of Literature:

Multiple studies have found associations between social media use and mental health difficulties. Keles et al. (2020) reported consistent links between problematic use and increased anxiety and depressive symptoms among adolescents and young adults. Similarly, Vannucci et al. (2017) found that frequent use correlates with elevated anxiety and stress in college populations. Non-users may experience better emotional regulation and reduced cognitive overload. Tromholt (2016) found that participants who temporarily refrained from Facebook reported increased life satisfaction and positive affect.

The relationship between social media use and the mental health of college students has emerged as a critical area of inquiry in contemporary psychological and educational research (Carlos La-Rosa-Longobardi & Djamil Gallegos-Espinoza, 2024). The widespread adoption of social networking platforms has fundamentally reshaped interpersonal communication, information consumption, and identity formation among university-aged individuals. While these digital environments offer unprecedented opportunities for connection and self-expression, they also expose users to unique psychological risks.

Existing literature presents a nuanced perspective, identifying both protective and detrimental effects of social media engagement. Several studies emphasize its positive contributions, noting that platforms such as Instagram, TikTok, and Twitter (now X) serve as vital tools for maintaining social relationships, accessing peer support, and facilitating emotional disclosure, particularly during periods of transition such as entering college (Berryman et al., 2018; Seabrook et al., 2016). These supportive functions have been associated with reduced feelings of isolation and enhanced overall well-being in moderate users.

Conversely, a substantial and growing body of evidence documents adverse mental health outcomes linked to heavy or problematic social media use. Cross-sectional and longitudinal studies consistently report positive correlations between excessive platform engagement and elevated levels of anxiety, depression, loneliness, and diminished self-esteem among college students (Twenge & Campbell, 2019; Primack et al., 2017; Kross et al., 2021). Key mechanisms underlying these negative effects include upward social comparison triggered by curated online personas, exposure to cyberbullying or toxic discourse, fear of missing out (FOMO), sleep disruption due to late-night usage, and the cognitive overload resulting from constant notifications and multitasking (Fardouly et al., 2018; Elhai et al., 2019).

In response to these concerns, researchers have explored a variety of preventive and interventional approaches. Proposed strategies include digital literacy education, mindfulness-based social media use training, implementation of platform time-limit features, campus mental health awareness campaigns, and cognitive-behavioral interventions targeting maladaptive usage patterns (Hunt et al., 2018; Thai et al., 2023). Although preliminary results are promising, further longitudinal research is needed to determine the long-term efficacy of these initiatives.

Objectives of the Study:

- 1) To compare levels of anxiety among social media users and non-users.
- 2) To examine differences in psychological well-being between users and non- users.

Hypothesis of the Study:

- 1) Social media users will exhibit higher levels of anxiety than non-users.
- 2) Social media users will report lower psychological well-being than non- users.

Research Design:

A comparative, cross-sectional research design was used.

Sample:

The present study was conducted in Chhatrapati Sambhaji Nagar District. Participants consisted of 60 college students aged 18–25 years, of whom 40 were users and 20 were non-users. The sample was selected randomly using a simple random sampling technique.

Variable:

Independent Variable

1. **Media:** Users and non-users

Dependent Variable

1. **Depression and Well-being**

Operational definition:

- ✓ **Users:** Engaging with social media daily for at least 3 hours.
- ✓ **Non-users:** No social media use in the past year or engaging with social media daily for at least 1 hour and less than one hour.
- ✓ **Mental Health:** Measured in this study as the level of depressive symptoms assessed by the total score on the Beck Depression Inventory-II (BDI-II). Lower scores indicate better mental health.
- ✓ **Psychological Well-Being:** Measured as the overall level of eudaimonic well-being using the total score on Ryff's Psychological Well-Being Scale. Higher scores indicate greater psychological well-being.

Tool used:

- 1) **The Beck Depression Inventory-II** (BDI-II; Beck et al., 1996) is a widely used and well-validated self-report measure for assessing the severity of depressive symptoms. Originally developed by Aaron T. Beck, it consists of 21 items that evaluate cognitive, affective, and somatic symptoms of depression. The BDI-II has been extensively applied in educational and research settings to screen for and monitor depression among

students. Total scores range from 0 to 63, with each item scored from 0 to 3. In the present study, the BDI-II demonstrated excellent internal consistency, with a Cronbach’s alpha of 0.927.

2) **The Psychological Well-Being Scale (PWBS;** Ryff, 1989) measures psychological well-being across six theoretically derived dimensions: Autonomy, Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, and Self-Acceptance. Respondents indicate their agreement with each item on a 6-point Likert scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree). Higher scores on each subscale reflect greater well-being in the corresponding dimension. In the current study, the PWBS exhibited strong internal consistency, with an overall Cronbach’s alpha of 0.88.

Statistical Analysis:

Descriptive statistics such as Means, standard deviations, and independent sample t-tests were conducted using SPSS.

Procedure:

Participants completed questionnaires after providing informed consent. Data were scored and statistically analyzed using t-tests to compare both groups.

Results and Discussion:

1) Social media users will exhibit higher levels of anxiety than non-users.

Table no. 1: Showing Mean, SD of users and non-users on anxiety.

Media	N	Mean	SD	t value	Sign
Users	40	23.15	8.14	5.81	0.01
Non-users	20	11.90	4.01		

Table 1 reveals a significant difference in depression levels between students who use social media and those who do not. Social media users had a substantially higher mean BDI-II score (M = 23.15, SD = 8.14) compared to non-users (M = 11.90, SD = 4.01). An independent t-test indicated that this difference was statistically significant, $t = 5.81, p < .01$. The results suggest that students who use social media experience significantly higher levels of depressive symptoms than their non-using peers.

The findings support previous research highlighting the negative emotional consequences of heavy social media exposure. Higher anxiety and depression among users may be attributed to Fear of missing out, cyber comparison, informational overload, and online social pressures (Vannucci et al., 2017). According to Keles et al. (2020), the effects of social media on mental health can be categorized into four distinct domains: time spent, activity level, investment, and addiction. Results revealed that all four domains were positively correlated with symptoms of depression, anxiety, and overall psychological distress. Similarly, Nazari et al. (2023) reported a significant direct association between social media use and poorer mental health outcomes.

2) Social media users will report lower psychological well-being than non- users.

Table no. 2 shows the Mean and SD of users and non-users students on psychological well-being.

Media	No	Mean	SD	t value	Sign
Users	40	158.40	10.81	4.71	0.01
Non-users	20	178.80	22.86		

Table 2 illustrates a significant disparity in psychological well-being between students who use social media and those who do not. Social media users reported notably lower mean psychological well-being scores (M = 158.40, SD = 10.81) than non-users (M = 178.80, SD = 22.86), respectively. An independent t-test confirmed that this difference was statistically significant, $t = 4.71$, $p = .01$. These results indicate that students engaging with social media tend to experience diminished psychological well-being compared to their non-using counterparts. Non-users demonstrated higher subjective well-being than users.

Twenge et al. (2018) observed that even moderate daily screen time (approximately 4 hours) was linked to reduced psychological well-being among adolescents. Notably, individuals with little to no screen use displayed the highest levels of well-being, whereas non-users and very low users showed no meaningful differences from each other. This pattern of superior well-being among non-users is consistent with Tromholt (2016), who found that a one-week abstinence from social media produced significant improvements in life satisfaction and positive affect. One possible explanation is that limiting exposure to the upward social comparison commonly encountered on social media platforms helps safeguard overall mental health and eudaimonic well-being.

Conclusion:

The study concludes that social media use is associated with higher levels of anxiety, whereas non-users show comparatively healthier mental profiles. These findings underscore the importance of digital well-being education and

mindful social media habits. Non-users demonstrated higher psychological well-being than users

Limitations:

- ❖ Sample size limited to one geographic region
- ❖ Self-report measures may introduce bias
- ❖ The cross-sectional nature prevents conclusions about causality

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THE MEDIATING ROLE OF BASIC PSYCHOLOGICAL NEEDS SATISFACTION IN THE MOTIVATIONAL CLIMATE ATHLETE OUTCOMES RELATIONSHIP

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Introduction:

Adolescence is a pivotal stage in an athlete's development, marked by profound physical, cognitive, and psychosocial transitions. The quality of the sport experience during these formative years profoundly influences long-term participation, psychological adjustment, and overall well-being. Central to shaping this experience is the **Motivational Climate (MC)** the situational goal structure of the team environment, primarily established by significant social agents such as coaches, parents, and peers. This climate fundamentally dictates how success is defined, effort is valued, and ability is perceived within the athletic context. Research drawing from **Achievement Goal Theory (AGT)** consistently demonstrates that the MC is a potent predictor of adaptive and maladaptive athlete outcomes. Adaptive outcomes include high athlete engagement, intrinsic motivation, and self-esteem, while maladaptive outcomes involve stress, amotivation, and burnout.

While the what the link between climate type and outcome is well-established, this paper addresses the how: the precise psychological pathway through which the environment translates into sustained, high-quality involvement. This analysis utilizes **Self-Determination Theory (SDT)**, which posits that the satisfaction of innate **Basic Psychological Needs (BPN)** Autonomy, Competence, and Relatedness is the essential nutrient for psychological growth and intrinsic motivation.

Purpose and Scope: The primary objective of this paper is to systematically synthesize the empirical evidence supporting the integrated AGT-SDT model, arguing that BPN satisfaction acts as the critical mediating mechanism in the relationship between the motivational climate (task- or ego-involving) and positive athlete outcomes, specifically high Athlete Engagement (AE) and reduced maladaptive states like burnout. The focus is placed on the adolescent population, where the influence of social agents on identity and motivation is at its peak.

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Conceptual Framework: Integrating AGT and SDT

A robust understanding of motivation in sport requires an integration of Achievement Goal Theory (AGT) and Self-Determination Theory (SDT). While AGT explains what motivates behavior (goals), SDT explains the quality and sustained nature of that motivation (needs satisfaction).

1. Achievement Goal Theory: Defining the Environment

AGT, established by Nicholls (1984), identifies two contrasting ways individuals define success and, critically, two ways the environment (the MC) structures those definitions:

1. **Task-Involving (Mastery) Climate:** Success is self-referenced, emphasizing personal improvement, effort, learning, and skill mastery. This climate fosters the perception that ability is malleable and success is controllable.
2. **Ego-Involving (Performance) Climate:** Success is norm-referenced, defined by outperforming others, social comparison, and demonstrating superior ability. This climate promotes the belief that ability is fixed and competitive outcomes are the primary measure of worth.

The coach-created climate is typically assessed using instruments like the Perceived Motivational Climate in Sport Questionnaire (PMCSQ-2). This instrument reliably measures the athlete's perception of these two stable dimensions (task and ego climates).

2. Self-Determination Theory: The Basic Psychological Needs

SDT proposes that motivation quality is determined by the extent to which the social environment supports the satisfaction of three universal, innate needs :

- **Autonomy:** Feeling a sense of choice and willingness, rather than feeling compelled or controlled in one's actions.
- **Competence:** Experiencing mastery and feeling effective in interacting with the environment.
- **Relatedness:** Feeling connected, belonging, and accepted by significant others within the group.

When these needs are satisfied, the athlete is driven by self-determined motivation (i.e., intrinsic motivation), which is associated with optimal psychological functioning and well-being.

3. The Integrated Mediating Hypothesis

The core mediating hypothesis dictates that the motivational climate shapes athlete outcomes through the fulfillment or thwarting of BPNs. A positive, task-involving MC provides the necessary context for BPN satisfaction, which, in turn, generates intrinsic motivation and sustained engagement. Conversely, an ego-involving MC thwarts these needs, leading to maladaptive outcomes. The functional overlap between AGT and SDT is clear: coaching behaviors that promote a task climate are inherently autonomy-supportive; behaviors that characterize an ego climate (e.g., punishing mistakes) are controlling and need-thwarting.

The Mediating Pathway: Climate to Needs Satisfaction

The empirical evidence strongly confirms that the type of motivational climate is a critical determinant of BPN satisfaction in the sport domain.

1. The Task Climate as a Need-Supportive Environment

Perceptions of a Task-Involving Climate are universally linked to high BPN satisfaction. This environment succeeds in supporting BPNs by structurally defining success in a way that maximizes opportunities to feel effective, volitional, and connected:

- **Competence:** When success is defined by personal progress and sustained effort, every athlete has a pathway to feel competent, regardless of normative ability.
- **Autonomy:** Task-involving environments often encourage athletes to be part of the decision-making process and allow for individual pacing of learning, reinforcing the sense of choice and ownership.
- **Relatedness:** By underlining that everyone on the team plays an important role and encouraging cooperation, the task climate fosters a strong sense of belonging and relatedness support.

Indeed, longitudinal research involving girl handballers demonstrated that perceived competence, autonomy, and relatedness were all positively predicted by a task-involving climate, even after controlling for the previous season's levels of these variables. This confirms the direct, powerful influence of the task climate on BPN satisfaction over time. Furthermore, systematic reviews confirm that task climate perceptions are positively related to satisfaction of all three psychological needs.

2. The Ego Climate as a Need-Thwarting Environment

In stark contrast, the Ego-Involving Climate is functionally need-thwarting. It promotes a psychological environment defined by threat and external pressure:

- **Competence Thwarting:** Basing self-worth and success on outperforming others creates an unstable foundation for competence. Failure (which is inevitable) directly threatens the athlete's sense of ability, especially if they are unsure of their skills.
- **Autonomy Thwarting:** The pressure to win and conform to comparison standards is inherently controlling, undermining the athlete's sense of self-endorsed behavior (Autonomy).
- **Relatedness Thwarting:** The emphasis on social comparison and competitive outcomes often fosters intra-team conflict and reduces team satisfaction, actively hindering the sense of belonging (Relatedness).

Empirical findings confirm that a perceived ego-involving climate is negatively related to the satisfaction of the three basic psychological needs. This systematic erosion of BPN satisfaction explains why the ego climate is associated with negative affect and tension.

BPN Satisfaction: The Link to Athlete Outcomes

Need satisfaction serves as the proximal precursor to high-quality motivation, directly predicting the adaptive outcomes of Athlete Engagement and psychological well-being.

1. The Pathway to High Athlete Engagement

Athlete Engagement (AE) is defined as an enduring, positive cognitive and emotional experience in sport, characterized by four distinct dimensions : Confidence, Dedication, Vigor, and Enthusiasm. The strong self-determined motivation (intrinsic motivation) that arises from BPN satisfaction is the fuel for this high-quality involvement.

- **Confidence (Cognitive):** A mastery climate, by focusing on personal effort and improvement, increases perceived competence and self-efficacy. This sense of mastery (Competence satisfaction) translates directly into the belief in one's capacity to achieve desired goals, the definition of Confidence.

- **Vigor and Enthusiasm (Affective):** Vigor characterizes a sense of positive physical and mental energy, and Enthusiasm denotes high levels of enjoyment. The feeling of Autonomy and Relatedness support, coupled with competence, generates positive affective states and enjoyment. Indeed, research has shown a partial mediation role of self-determined motivation (specifically intrinsic motivation) in the relationship between a task-involving climate and enjoyment.
- **Dedication (Behavioral):** Dedication is the desire to invest sustained time and effort toward important goals. When the experience is intrinsically rewarding due to satisfied BPNs, the athlete is inherently motivated to persist and adhere to the sport over the long term, reinforcing dedication.
In summary, the task climate provides the environmental support, BPN satisfaction enables intrinsic motivation, and intrinsic motivation manifests as the holistic, positive experience defined by high Athlete Engagement.

2. Protection Against Maladaptive States (Burnout)

One of the most critical athlete outcomes is the prevention of burnout, which is characterized by emotional exhaustion, reduced sense of accomplishment, and sport devaluation. The task climate, through the BPN pathway, provides a powerful protective buffer:

- **Task Climate and Resilience:** A perceived mastery motivational climate stimulates an athlete's desire for challenges and increases intrinsic interest and motivation, consequently **protecting them from burnout**.
- **Ego Climate and Risk:** Conversely, longitudinal research has demonstrated a positive association between coach-created ego climates and increased burnout risk. This is because the ego climate chronically thwarts BPNs, leading to negative affect, tension, and amotivation.

Furthermore, sport motivation (a product of BPN satisfaction) has been shown to be a significant direct predictor of reduced athlete burnout, with factors like life satisfaction and mental toughness playing a partial mediating role between motivation and burnout, illustrating a cascade of psychological benefits stemming from the initial adaptive climate.

Contextualizing Climate: The Role of Multiple Social Agents

The complexity of the motivational environment stems from the multiple significant social agents who simultaneously shape the athlete's experience. Athlete perceptions of the climate may be complementary or contradictory across agents, collectively influencing motivation and engagement.

1. Coach and Parent Synergy

While the coach (assessed via PMCSQ-2) is the most studied source, parents play an equally vital and synergistic role. Optimal parenting strategies involve establishing an autonomy-supportive and parent-initiated task climate (measured via PIMCQ-2). A parent-initiated mastery climate that emphasizes learning and pleasure (the Learning-Pleasure Climate) is linked to adaptive outcomes like higher self-esteem and enjoyment in the athlete's main sport. This consistent, multi-agent support across the social context maximizes the opportunities for BPN satisfaction.

2. The Peer Motivational Climate

During adolescence, the influence of peers is paramount. The Peer Motivational Climate in Youth Sport Questionnaire measures peer influence, which includes components like effort, relatedness support, and intra-team conflict. A Peer Mastery Climate (characterized by support for relatedness and effort) is associated with the exhibition of positive character attributes, reinforcing the BPN of Relatedness. However, Ego-Involving Peer Climates (featuring intra-team conflict) have been directly related to perceived burnout in adolescent athletes. Organizations must therefore manage the entire social ecosystem coach, parent, and peer to ensure consistency in BPN support.

Methodological Imperatives and Future Directions:

Despite the overwhelming consensus on the benefits of a task climate, methodological limitations in the existing literature warrant attention for future advancements.

1. The Need for Longitudinal Causal Inference

The majority of studies rely on cross-sectional designs, which limit the ability to establish temporal precedence and causal influence. To fully map the mediating role of BPNs, there is a clear necessity for longitudinal research employing multiple waves of measurement across competitive seasons. Such designs permit researchers to explore the within-person effects of climate and accurately track dynamic changes in motivational regulations and burnout propensity over time.

2. Perceived vs. Induced Climate

In experimental settings, a critical distinction exists between relying on an induced motivational climate (researcher instructions) versus measuring the athlete's perceived motivational climate. Relying only on induced instructions may mask the crucial interplay between the athlete's innate goal orientation and the actual perceived environment. Future research must prioritize measuring the athlete's genuine, internalized perception of the climate (Perceived MC) to ensure findings accurately reflect the natural psychological mechanisms at play.

3. Practical Context and Elite Athletes

While the link between task climate and positive affect/well-being is strong across general populations, research suggests these correlations may appear dampened in elite athletes. This finding does not negate the importance of the task climate; rather, it underscores the intense, systemic ego pressures inherent in elite competitive settings. Practitioners must still ensure the promotion of a task climate, even in specialized contexts, to maximize positive affect and long-term satisfaction in the sport experience.

Conclusion:

The integration of Achievement Goal Theory and Self-Determination Theory provides a powerful and robust explanation for optimizing the athlete experience. The evidence unequivocally confirms that a Task-Involving (Mastery) Motivational Climate is the most adaptive environmental structure, driving the highest quality of sport involvement. Crucially, this adaptive relationship is not direct, but is critically mediated by the satisfaction of the Basic Psychological Needs of Autonomy, Competence, and Relatedness. By defining success via effort and

personal improvement, the task climate acts as a need-supportive context, thereby generating high intrinsic motivation. This intrinsic motivation, in turn, directly manifests as high Athlete Engagement (Confidence, Vigor, Dedication, and Enthusiasm) and acts as a profound psychological safeguard against burnout. For coaches, parents, and sport organizations, the practical implication is clear: the focus must shift from solely pursuing outcomes (ego climate) to deliberately structuring the environment to support basic psychological needs (task climate). Only through this structural commitment can sustained, healthy, and high-quality athletic participation—the ultimate outcome be ensured for adolescent athletes.

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HAPPINESS, PSYCHOLOGICAL WELL-BEING AND QUALITY OF LIFE AMONG EARLY ADULTS

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Abstract:

The purpose of the study was to examine Happiness, Psychological Well-Being, and Quality of Life among early adults. The purposive sampling method was used for data collection. The sample consisted of 60 participants between the ages of 18 and 30. The tools used for measuring the variables included the Happiness Scale, the Psychological Well-Being Scale, and the Quality of Life Scale. The data collected on these variables were analyzed using a correlational research design. The results indicate that Happiness, Psychological Well-Being, and Quality of Life among early adults are positively correlated.

Keywords: *Happiness, Psychological Well-Being, Quality of Life Early adults.*

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In our daily lives, we all face some problems, such as physical problems and economic problems. Social problems as well as mental problems. Some of the people actually knew how to handle the problems, and some didn't. They were confused and over thought the problem because they weren't aware of their mental state, level of happiness, level of psychological well-being, or quality of life. Happiness is commonly understood as subjective well-being, which includes life satisfaction, positive emotions, and a low level of negative emotions. It reflects how people evaluate their lives both cognitively and emotionally. Happiness is influenced by factors such as personality, relationships, achievements, and gratitude. When individuals feel fulfilled, supported, and hopeful, their level of happiness tends to rise. Although it fluctuates with life events, happiness remains an important psychological indicator of a healthy and satisfying life.

Happiness is a state that is defined by feelings of fulfillment and contentment with one's life or circumstances. Happiness is a more stable condition than pleasure, even though it's not always there. While pleasure can disappear in an instant, happiness typically lasts for more than a few moments at a time (Paul, 2015). Happiness and pleasure have the potential to strengthen or intensify one another, yet they can also totally contradict one another. For instance, you might experience happiness based on meaningful involvement and meaning that is unrelated to pleasure, or you might experience pleasure but battle with guilt as a result, preventing you from experiencing happiness simultaneously.

Psychological well-being is the subjective feeling of contentment, happiness, satisfaction with life's experiences and of one's role in the world of work, sense of achievement, utility, belongingness, and no distress,

dissatisfaction or worry, etc. The term psychological well-being (PWB) connotes a wide range of meanings. Usually associated with wellness. Most studies in the past defined 'wellness' as not being sick, as an absence of anxiety, depression or other forms of mental problems. The PWB includes meaning in life, absence of somatic symptoms, self-esteem, positive affect, daily activities, satisfaction, absence of suicidal ideas, personal control, social support, absence of tension, and general efficiency (Bhogle and Prakash, 1995). Psychological well-being focuses on deeper aspects of human functioning, such as meaning, purpose, autonomy, personal growth, and positive relationships unlike happiness, which highlights emotional experiences; psychological well-being emphasizes how well a person is functioning psychologically. Ryff's model explains six key dimensions: autonomy, environmental mastery, and personal growth, purpose in life, self-acceptance, and positive relations. Higher psychological well-being is associated with resilience, self-confidence, and effective coping with challenges. It reflects not just feeling good, but living well and realizing one's potential.

Quality of life is now given attention in the management of chronic illness. Quality of life has several components, specifically physical functioning, psychological status, social functioning, and disease or treatment-related symptomatology. Quality of life is a broader concept that includes physical health, psychological state, social relationships, and environmental conditions. It represents how satisfied individuals are with different aspects of their lives. Happiness and psychological well-being both contribute strongly to quality of life, as people who feel positive and function well tend to evaluate their overall lives more favorably. Quality of life also depends on external supports such as safety, resources, healthcare, and opportunities. Together, happiness, psychological well-being, and quality of life provide a comprehensive understanding of human wellness and life satisfaction.

Objective of the study :

1. To study the relationship between Happiness among early adults.
2. To study the Quality of life among early adults.
3. To study the relationship between Happiness, Psychological Well-Being and Quality of life among early adults.

Hypotheses:

1. There will be positive correlation between Happiness and Psychological Well-Being among early adults.
2. There will be positive correlation between Happiness and Quality of life among early adults.
3. There will be positive correlation between Psychological Well-Being and quality of life among early adults.

Method:

Participants:

In the present study, a purposive sampling technique was used. A total of 60 participants were selected from colleges, offices, and other areas in Baramati, such as Vidya Pratishthan College of Arts, Science and Commerce, Baramati; Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati; Kasaba Baramati; Laxmi Narayan Nagar, Baramati; and Baramati Agro Private Limited, Baramati. The age range of all participants was between 18 and 30 years.

Instruments:

Happiness Scale:- The Happiness Scale developed by Dr. Himanshi Rastogi and Dr. Janki Moorjani (2017) was used to assess the level of happiness among participants. The scale consists of 20 items, each rated on a five-point Likert-type response format ranging from strongly agree to strongly disagree. Higher scores on the scale indicate a higher level of happiness in individuals. The scale has a reliability coefficient of 0.88. Face validity and content validity were established for this measure. The scale is suitable for individuals aged 18 to 40 years and can be administered to both males and females.

Psychological Well-Being Scale: - The Psychological Well-Being Scale developed by Dr. Devendra Singh Sisodia and Ms. Pooja Choudhary (2012) was used to measure the level of psychological well-being among participants. The scale consists of 50 items, each rated on a five-point Likert-type response format ranging from strongly agree to strongly disagree. Higher scores on the scale indicate better psychological well-being in individuals. The scale has a reliability coefficient of 0.90. Face validity and content validity were established for this tool. Norms for various age groups are available for the scale.

Quality of Life Scale: The Quality of Life Scale developed by S. K. Verma, Padma Dwivedi, and B. L. Dubey (2009) was used to measure the level of quality of life. The scale has 62 items with response options ranging from “strongly agree” to “strongly disagree.” The reliability of the scale is 0.87. Face validity and content validity were established for the scale. Norms are available for males and females between the ages of 20 to 54 years.

Statistical analysis:

For the present study Mean, and S.D. used as a part of descriptive statistics. To find out the correlation between Happiness, Psychological Well-being and Quality of life Pearson correlation coefficient was used.

Results :

Table 1: Statistical indices of Happiness, Psychological well-being and Quality of life

Variables	N	Mean	Standard Deviation
Happiness	60	253.933	23.63
Psychological Well-Being	60	189.256	18.56
Quality of Life	60	75.98	9.39

Table 1 presents the descriptive statistics for Happiness, Psychological Well-Being, and Quality of Life among the sample (N = 60). The results indicate that participants reported moderately high levels of happiness (M = 253.93, SD = 23.63). Psychological well-being scores were also within the average range (M = 189.25, SD = 18.56), suggesting that most individuals experienced a moderate degree of positive psychological functioning. In addition, quality of life scores showed relatively low variability (M = 75.98, SD = 9.39), indicating that participants’ perceived life satisfaction and environmental quality were fairly consistent across the sample.

Overall, the descriptive statistics show that all three constructs—happiness, psychological well-being, and quality of life—fell within average to moderately high levels in the studied population, with acceptable variability across individual scores.

Table 2: Pearson Correlation matrix test to examine the relationship between personality and its dimension with locus of control

Variables	Happiness	Psychological Well-Being	Quality of Life
Happiness	1	0.51	0.60105
Psychological Well-Being	0.	1	0.44
Quality of Life	0.60	0.44	1

Table 2 provides the Pearson correlation coefficients among Happiness, Psychological Well-Being, and Quality of Life. There was a moderate, positive correlation between happiness and psychological well-being, $r = .51$, indicating that individuals reporting higher levels of happiness also tended to exhibit higher psychological well-being. A strong, positive association was found between happiness and quality of life, $r = .60$, suggesting that greater happiness is linked to better perceived life quality. Psychological well-being also demonstrated a moderate, positive correlation with quality of life, $r = .45$, indicating that individuals with higher psychological well-being generally reported better quality of life.

Taken together, the results show that all variables are positively related, consistent with prior research suggesting that emotional satisfaction, mental well-being, and perceived life quality are interconnected psychological constructs

Conclusion:

1. Moderate positive correlation found between happiness and psychological well-being.
2. Strong positive correlation was found between happiness and quality of life.
3. Psychological well-being also demonstrated a moderate, positive correlation with quality of life.

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A STUDY OF STRESS AND COPING STRATEGIES AMONG MPSC ASPIRANTS ATTENDING COACHING INSTITUTES IN BARAMATI, DISTRICT PUNE

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* *A Study of Stress and Coping Strategies Among MPSC Aspirants Attending Coaching Institutes in Baramati, District Pune.*

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Abstract:

This study aimed to identify the major sources of stress among MPSC aspirants attending coaching institutes in Baramati taluka, Dist. Pune. It also examined the coping strategies used by these aspirants and suggested additional strategies that parents and teachers can use to support them. The study followed a descriptive, cross-sectional design. It was conducted in September, 2025. The population included MPSC aspirants enrolled in full-time coaching institutes in Baramati taluka while also managing other academic or personal responsibilities. The sample consisted of 200 aspirants. Data were collected using a standardised questionnaire with two sections: one on sources of stress (Student's Stress Scale by Dr. Manju Agrawal, (2012)) and the other on coping strategies. The questionnaire included open-ended questions rated on a 7-point Likert scale. A total of 200 aspirants completed the questionnaire. Data were analysed using descriptive statistics, including frequency, percentage, mean, and standard deviation. The results showed that academic pressure (49%) and parental expectations (38%) were the major sources of stress among MPSC aspirants. Personal stressors (9%) and environmental stressors (4%) also contributed to their stress levels. Aspirants commonly used coping strategies such as practising yoga, listening to music, using the internet, talking to supportive peers, playing outdoor games, communicating with parents, and practising meditation. The study also suggests additional strategies such as visualization, deep breathing, progressive muscle relaxation, better organization, and self-hypnosis. This study provides valuable insights into the stress experienced by MPSC aspirants and the coping strategies they use. It offers practical guidance to students, parents, and teachers for managing stress more effectively. It also opens avenues for further research on stress among aspirants of other competitive examinations, including those who prepare without coaching support.

Keywords: *Stress, Coping Strategies, MPSC Aspirants, Competitive Examinations, Coaching Institutes, Adolescents etc.*

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Introduction:

Competitive examinations in India, such as the Maharashtra Public Service Commission (MPSC) exam, are known for their rigorous selection processes and high levels of competition. Aspirants preparing for these examinations often experience significant levels of stress due to academic pressure, family expectations, and the

competitive environment (Sharma & Kaur, 2019). Stress is defined as a psychological and physiological response that occurs when individuals perceive a mismatch between demands and their ability to meet those demands (Lazarus & Folkman, 1984). When unmanaged, stress can negatively impact mental health, concentration, motivation, and academic performance.

Coping refers to the cognitive and behavioural strategies individuals use to manage stressful situations (Folkman & Moskowitz, 2004). Coping strategies may include problem-focused methods, such as organizing study schedules, or emotion-focused methods, such as meditation or relaxation techniques. For students preparing for competitive examinations, coping strategies play a crucial role in maintaining emotional balance, sustaining motivation, and achieving academic goals (Deb et al., 2015).

Coaching institutes have become an essential part of competitive exam preparation in India. These institutes provide structured study materials, expert guidance, and peer interaction, yet they may simultaneously increase pressure and contribute to stress among aspirants (Kumar, 2020). Baramati taluka in Pune district has witnessed a rise in coaching centres dedicated to MPSC preparation. Despite the growing number of aspirants and the competitiveness of these examinations, limited research has focused specifically on the stress experiences and coping mechanisms of MPSC aspirants in this region.

The present study aims to explore the sources of stress among MPSC aspirants attending coaching institutes in Baramati, as well as the coping strategies they employ. Understanding these factors is essential for developing interventions that support student well-being and academic success.

Key Concepts:

Stress:

Stress is a state of mental or emotional strain resulting from demanding circumstances (Lazarus & Folkman, 1984). Among students, stress commonly arises from academic workload, time pressure, and performance expectations. Stress is a multidimensional construct that encompasses a wide range of human experiences. The term is frequently used in both scientific and everyday contexts, yet its meaning varies depending on the discipline and the processes being examined. Broadly, stress may refer to external events or situations that challenge an individual (referred to as stressors), as well as the psychological, emotional, and physiological stress responses that such events evoke. Stressors can include major life events—such as financial difficulties, relationship challenges, or academic pressures—as well as daily hassles and ongoing demands (Cohen et al., 1997). These stressors differ across disciplines: for example, economists emphasize social and economic constraints, while psychologists focus more on individual-level events such as academic burden, job loss, or interpersonal conflicts.

Stress responses, on the other hand, involve cognitive appraisals, emotional states, and physiological reactions that arise when individuals perceive that the demands placed on them exceed their resources or coping abilities (Lazarus & Folkman, 1984; Lazarus et al., 1985). These responses can be assessed through self-reports, biological markers, or behavioural indicators, although these measures are often loosely related (Mauss et al., 2005). Because stress can capture aspects of exposure, perception, and physiological activation, the construct

has been critiqued for being overly broad and difficult to operationalize effectively in research (Kagan, 2016). However, the integration of these various elements remains essential for understanding how stress affects individuals in real-world contexts.

For aspirants of competitive examinations such as the Maharashtra Public Service Commission (MPSC), stress is typically experienced as a combination of academic demands, performance expectations, social pressures, and personal responsibilities. Within the stress and coping framework, stress arises when aspirants perceive that their preparation workload, parental expectations, or environmental conditions exceed their ability to manage or control these demands. This perception leads to psychological states such as anxiety, overwhelm, and reduced sense of control—core elements of perceived stress, which differs from broader constructs such as chronic anxiety or depressive traits. While emotional responses such as fear, frustration, or worry may occur during acute stressful moments (e.g., high-stakes exams or mock tests), perceived stress tends to manifest across longer time frames, often spanning weeks or months of sustained preparation. Given the competitive nature of MPSC examinations and the high expectations associated with coaching institutes, aspirants commonly experience stress that is both diffuse and multifaceted. Understanding the concept of stress in this context is essential, as it shapes not only academic performance but also mental well-being. The present study adopts the transactional model of stress, viewing stress as a dynamic process that involves the interaction between aspirants perceived demands and their available coping resources. This framework provides a meaningful foundation for examining how MPSC aspirants interpret stress, how they respond to it, and what strategies they utilize to maintain psychological balance during preparation.

Coping Strategies:

Coping strategies are techniques individuals use to manage stress. These include problem-focused coping (e.g., planning, seeking help) and emotion-focused coping (e.g., relaxation, meditation) (Folkman & Moskowitz, 2004). Coping refers to the cognitive and behavioural efforts that individuals consciously mobilize to manage the internal and external demands of stressful situations (Folkman & Lazarus, 1984). Unlike defence mechanisms, which are unconscious and automatic responses, coping represents intentional and voluntary attempts to reduce, tolerate, or overcome stress (Carver, Scheier, & Weintraub, 1989). When individuals encounter stressors, they rely on characteristic and relatively consistent ways of responding—referred to as coping styles—which shape how they interpret and manage stress across situations (Endler & Parker, 1990).

Coping can be broadly understood in terms of two temporal orientations: reactive coping, which occurs in direct response to an existing stressor, and proactive coping, which involves anticipating and preparing for potential future stressors (Aspinwall & Taylor, 1997). Reactive coping tends to be more effective in dynamic, unpredictable environments, whereas proactive coping is beneficial in stable contexts where individuals can plan and prepare. In the context of MPSC aspirants—who face sustained academic pressure, uncertainty about examination outcomes, and fluctuating expectations—both forms of coping may play an important role in managing prolonged preparation-related stress.

Various standardized tools have been developed to assess coping strategies, such as the COPE Inventory, Ways of Coping Questionnaire, Coping Strategies Questionnaire, Coping Inventory for Stressful Situations, Religious-COPE, and Coping Response Inventory (Carver et al., 1989). These instruments help researchers categorize coping into several major domains. One widely accepted framework includes four primary categories: problem-focused coping, which involves efforts to address or modify the source of stress (e.g., planning, seeking solutions); emotion-focused coping, which aims to regulate emotional distress through strategies such as acceptance, positive reframing, or religious involvement; meaning-focused coping, where individuals draw on cognitive processes to find meaning or purpose in stressful circumstances; and social coping, which involves seeking emotional or instrumental support from others (Folkman, 2008).

While many coping strategies are adaptive, some can be maladaptive and associated with poorer mental health outcomes. Maladaptive coping includes avoidance, disengagement, emotional suppression, and other behaviours that temporarily reduce distress but contribute to long-term psychological difficulties (Compas et al., 2017). For MPSC aspirants, reliance on maladaptive coping may increase anxiety, reduce concentration, and impair academic performance during prolonged periods of exam preparation.

Biological theories of coping suggest that individual differences in coping tendencies may be linked to neurobiological systems, including serotonergic and dopaminergic activity within the medial prefrontal cortex and nucleus accumbens, as well as neuropeptides such as oxytocin and vasopressin (Taylor et al., 2000). However, the role of neuroendocrine mechanisms such as the hypothalamic–pituitary–adrenal (HPA) axis appears less directly related to coping style. Despite these biological influences, coping among MPSC aspirants is best understood through psychological and behavioural frameworks, as these directly shape how students respond to academic pressure, parental expectations, and competitive exam demands.

Understanding coping strategies within this theoretical framework is essential for examining how MPSC aspirants manage stress and for identifying which strategies promote resilience, well-being, and effective academic functioning.

MPSC Aspirants:

MPSC aspirants are individuals preparing for recruitment examinations conducted by the Maharashtra Public Service Commission. These exams require intensive study, long-term commitment, and strong mental resilience. MPSC aspirants are individuals preparing for the competitive examinations conducted by the Maharashtra Public Service Commission, a constitutional body responsible for recruiting candidates for various administrative, police, and civil service posts in the state of Maharashtra (Maharashtra Public Service Commission, 2023). These examinations are known for their extensive syllabi, rigorous evaluation processes, and high competition, requiring aspirants to engage in prolonged periods of intensive study and disciplined preparation (Kulkarni, 2020). The process often involves attending coaching institutes, managing vast academic content, and coping with repeated attempts, all of which demand significant cognitive effort, emotional stability, and long-term commitment. Given the increasing competitiveness and uncertainty surrounding results, MPSC preparation can place substantial psychological pressure on aspirants, making them vulnerable to elevated levels of stress,

anxiety, and performance-related concerns (Deshmukh & Patil, 2021). In the context of Baramati, where coaching institutes serve as important academic support systems, aspirants' experiences are shaped by local educational resources, socioeconomic conditions, and peer competition. Thus, understanding the unique stressors faced by MPSC aspirants and the coping strategies they employ is essential for evaluating their mental well-being and academic resilience.

Competitive Examinations:

Competitive examinations are tests designed to select candidates based on merit. These exams are highly demanding, contributing to psychological stress among students (Deb et al., 2015). Competitive examinations are merit-based assessment systems designed to select candidates for academic, administrative, or professional positions based on standardized criteria (Deb et al., 2015). These exams typically require high levels of cognitive effort, time investment, and persistent practice, which can create substantial academic pressure for aspirants. In the context of Maharashtra, the MPSC examinations represent one of the most challenging state-level competitive exams, involving extensive syllabi, multiple stages of testing, and intense competition (Kamble, 2021). Such examinations often serve as gateways to prestigious government positions, increasing aspirants' motivation but simultaneously amplifying performance-related stress. For individuals attending coaching institutes in regions like Baramati, the competitive nature of these exams shapes their daily routines, academic engagement, and psychological experiences. Consequently, competitive examinations function not only as measures of knowledge and aptitude but also as significant sources of stress that influence the emotional well-being and coping behaviour of aspirants preparing for them.

Coaching Institutes:

Coaching institutes provide structured training and preparation programs for competitive examinations. While beneficial, these institutes may also add to aspirants' stress due to strict schedules and high expectations (Kumar, 2020). Coaching institutes play a significant role in the preparation of competitive examinations by offering structured academic training, focused study materials, and systematic guidance to aspirants (Kumar, 2020). These institutes are often perceived as essential for success in highly competitive exams like the MPSC, as they provide expert mentorship, disciplined routines, and exposure to exam-oriented strategies. However, the demanding schedules, frequent assessments, and high expectations associated with coaching environments can also contribute to increased stress levels among aspirants. For MPSC candidates in Baramati, coaching institutes serve as critical support systems, yet they may simultaneously intensify academic pressure by fostering a competitive atmosphere and emphasizing performance benchmarks. As a result, coaching institutes can function as both facilitators of learning and potential sources of stress, influencing the overall well-being and coping mechanisms of aspirants preparing for MPSC examinations.

Background of the Study:

In recent years, the number of candidates preparing for state-level competitive examinations like the MPSC has increased substantially. These examinations determine entry into various administrative and government

positions, making them highly desirable (Patil, 2021). Aspirants often engage in intensive coaching programs while balancing personal and social responsibilities, leading to increased academic pressure.

Previous studies conducted on students preparing for competitive examinations—such as engineering, medical, and civil services—indicate that academic demands, fear of failure, peer competition, and parental pressure are major sources of stress (Singh & Jain, 2018). Moreover, adolescents and young adults, the age group most commonly pursuing such exams, are more vulnerable to psychological stress due to developmental changes and career uncertainties (Nair & Ranjan, 2017). Although various studies have examined stress among students in metropolitan coaching hubs such as Delhi, Kota, and Pune, there is limited literature focusing on semi-urban or rural regions like Baramati taluka. This geographical gap in research highlights the need to study the unique experiences of MPSC aspirants in this specific context.

Rationale of the Study:

Despite the growing number of MPSC aspirants in Baramati, empirical research on their psychological challenges remains scarce. Most existing literature focuses on aspirants of engineering, medical, or civil services examinations, with limited attention on state-level administrative exams. The mental health and coping needs of MPSC aspirants may differ due to their unique socio-economic and regional contexts.

This study fills a crucial gap by examining both stressors and coping strategies among MPSC aspirants in Baramati. The findings will help educators, counsellors, parents, and policymakers design interventions that support aspirants' mental well-being. Furthermore, understanding coping patterns can assist coaching institutes in developing student-friendly training environments.

Significance of the Study:

This study holds significance for multiple stakeholders:

- **For Aspirants:** It identifies common stressors and effective coping strategies, helping them manage stress more efficiently.
- **For Parents:** It provides insights into the pressures aspirants face, enabling them to offer better emotional and motivational support.
- **For Teachers and Coaching Institutes:** The findings can help educators create supportive learning environments and incorporate stress-management activities into their programs.
- **For Researchers:** The study expands the limited body of research on competitive exam-related stress in semi-urban regions and paves the way for further studies on mental health among aspirants.
- **For Policymakers:** Results can inform the development of supportive academic and mental-health policies for competitive exam aspirants.

Objectives of the Study:

The present study was undertaken with the following objectives:

1. To identify the major sources of stress among MPSC aspirants attending coaching institutes in Baramati taluka, District Pune.
2. To examine the coping strategies used by MPSC aspirants to manage stress during their preparation.

3. To analyse the levels of academic, parental, personal, and environmental stress experienced by MPSC aspirants.
4. To suggest additional stress-management and coping strategies that may help aspirants, parents, and teachers support well-being and academic performance.
5. To provide empirical insights that can guide future interventions and research related to stress among competitive examination aspirants.

Hypotheses of the Study:

Although the study is primarily descriptive in nature, the following hypotheses are proposed based on the objectives:

1. **H1:** MPSC aspirants will report academic stress as the most significant source of stress compared to parental, personal, and environmental stressors.
2. **H2:** MPSC aspirants will predominantly use emotion-focused coping strategies (e.g., meditation, listening to music) rather than problem-focused coping strategies (e.g., organizing study schedules).
3. **H3:** There will be a significant variation in stress levels among MPSC aspirants based on different sources of stress.
4. **H4:** Aspirants who use positive coping strategies (e.g., relaxation techniques, physical activity) will report lower levels of stress compared to those who use negative or avoidant coping strategies.

Review of the Literature|:

Introduction:

A review of existing literature is essential for understanding the theoretical foundation, empirical trends, and research gaps related to stress and coping strategies among aspirants of competitive examinations. Since competitive exams in India—such as UPSC, MPSC, NEET, and JEE—are associated with high academic pressure, several researchers have explored the psychological challenges students face. This chapter synthesizes the available literature on stress, coping strategies, competitive exam environments, and coaching institutes, with specific attention to studies relevant to the present research.

Review of Literature on Stress Among Students:

Stress among students has been widely studied due to its increasing prevalence and detrimental effects on mental health and academic performance. Stress is conceptualized as a psychological response arising when perceived demands exceed one's coping abilities (Lazarus & Folkman, 1984). Recent studies emphasize that academic stress remains one of the most significant stressors for adolescents and young adults preparing for competitive examinations (Deb et al., 2015; Kumar & Priya, 2021). For instance, Deb et al. (2015) conducted a large-scale assessment of academic stress among Indian students and reported that examination pressure, parental expectations, and fear of failure were the most common stressors. Similarly, Singh and Gaur (2020) highlighted that students preparing for government examinations experience high stress due to uncertainty, long preparation duration, and limited selection rates. Physiological and emotional impacts such as anxiety, fatigue, concentration difficulties, and sleep disturbances have been consistently reported among exam aspirants (Sharma & Sud, 2022).

These findings align with the results of the present study, where academic and parental factors emerged as dominant stressors among MPSC aspirants.

Stress in Competitive Examination Aspirants:

Competitive examination aspirants constitute a unique population due to the highly demanding nature of these exams. Several studies have specifically assessed stress among aspirants of UPSC, SSC, NEET, and similar exams. A recent review by Thomas and George (2021) found that long study hours, societal expectations, unstable career prospects, and intense competition significantly elevate stress levels among aspirants. In a study on UPSC aspirants, Raghavan (2020) reported that more than 60% of candidates experience moderate to severe stress, primarily related to academic expectations and financial pressures associated with coaching. Similarly, Mishra and Tiwari (2022) found that competitive exam candidates often suffer from emotional exhaustion and self-doubt, which can negatively affect exam performance. Aspirants preparing for state public service examinations, such as MPSC, often face additional stress due to regional disparities in educational resources and limited coaching facilities (Patil, 2021).

Literature on Coping Strategies Among Students and Aspirants:

Coping strategies refer to the cognitive and behavioural efforts individuals employ to manage stressful situations (Folkman & Lazarus, 1985). Research indicates that students commonly use both problem-focused and emotion-focused coping strategies (Carver et al., 1989). A systematic review by Kapoor and Sinha (2021) showed that adaptive coping strategies—such as planning, seeking support, meditation, physical exercise, and time management—are associated with better psychological well-being among students. In contrast, maladaptive coping, including avoidance, denial, and substance use, correlates with emotional distress and poor academic outcomes. Studies on competitive exam aspirants show similar patterns. For example, Bhatia and Kumar (2020) reported that aspirants who use constructive coping strategies such as mindfulness, relaxation techniques, and peer support exhibit lower levels of perceived stress. A study on NEET aspirants by Joseph and Abraham (2019) also revealed that yoga and meditation significantly reduce exam-related anxiety. The coping strategies identified in the current study—such as yoga, music, peer communication, meditation, visualization, and deep breathing—are consistent with those reported in the literature as effective stress-management techniques.

Coaching Institutes and Their Impact on Stress:

Coaching institutes are central to the preparation process for competitive examinations in India. While they offer structured guidance and improved access to learning resources, research suggests they may also contribute to stress due to performance pressure and strict routines. According to Kumar (2020), coaching environments often promote continuous assessment, long study hours, and competition among peers, which may elevate stress levels. A study by Mehta and Verma (2021) found that coaching classes for competitive exams can intensify anxiety, especially among students juggling academic studies along with coaching schedules. Chandra and Singh (2022) reported that aspirants attending coaching institutes demonstrate slightly higher stress levels than those preparing independently, primarily due to institutional expectations and comparison with peers.

Methodology:

Statement of the Problem:

The present study sought to examine the major sources of stress and the coping strategies adopted by MPSC aspirants attending coaching institutes in Baramati, District Pune. As competitive examinations demand high levels of academic rigor and psychological endurance, aspirants often experience significant stress arising from academic pressures, parental expectations, and personal and environmental challenges. The problem addressed in this study was to identify these stressors systematically and to understand the coping mechanisms employed by aspirants, along with additional strategies that may support their well-being.

Variables:

Independent Variables

- i. Sources of stress (academic, parental, personal, environmental)

Dependent Variables

- i. Coping strategies adopted by MPSC aspirants

Operational Definitions of Variables:

To ensure clarity, the following terms are defined operationally for the purpose of this study:

1. Stress

Stress refers to the psychological and physiological tension experienced by MPSC aspirants due to academic workload, parental expectations, personal issues, and environmental factors. Stress is measured using the *Student's Stress Scale* by Manju Agrawal (2012).

2. Coping Strategies

Coping strategies are the behaviours and cognitive techniques used by aspirants to manage stress. These include both emotion-focused (e.g., meditation, listening to music) and problem-focused (e.g., planning, organizing) strategies, as reported in the questionnaire.

3. MPSC Aspirants

MPSC aspirants are individuals preparing for the Maharashtra Public Service Commission examinations and attending full-time coaching institutes in Baramati taluka, District Pune.

4. Sources of Stress

Sources of stress refer to the different areas causing tension or pressure for aspirants. These include academic, parental, personal, and environmental stressors.

5. Coaching Institutes

Coaching institutes are private educational centres that provide structured training, study materials, and guidance to students preparing for MPSC examinations.

6. Competitive Examinations

Competitive examinations refer to standardized tests designed to select candidates based on merit for public sector positions.

Research Design:

The study adopted a descriptive, cross-sectional research design. This design was suitable because the objectives was to assess the stress levels and coping strategies of aspirants at a single point in time, without intervention.

Population and Sampling Procedure:

Population:

The population consisted of all MPSC aspirants enrolled in full-time coaching institutes in Baramati taluka, District Pune, during September 2025.

Sample:

A total of 200 aspirants participated in the study.

Sampling Procedure:

A **purposive sampling technique** was used, selecting only those aspirants who were:

- i. Enrolled in full-time coaching,
- ii. Preparing for MPSC examinations,
- iii. Managing either academic or personal responsibilities alongside coaching.

Data Collection Tools:

1. Student's Stress Scale (Agrawal, 2012). A standardized instrument used to measure sources and intensity of stress among students. It contains multiple domains of stress and responses rated on a 7-point Likert scale.

2. Coping Strategies Questionnaire

A researcher-developed tool containing:

- i. Open-ended questions about coping methods,
- ii. Likert-scale items assessing frequency and perceived effectiveness of coping strategies.

Both tools were administered together as a combined questionnaire.

Data Collection Procedure

- i. Permission was obtained from the coaching institutes in Baramati taluka.
- ii. Participants were briefed about the study purpose and assured confidentiality.
- iii. The standardized questionnaire was distributed in printed form.
- iv. Aspirants completed the questionnaire within the coaching premises.
- v. A total of 200 fully completed questionnaires were collected.
- vi. Data were checked for completeness and recorded for statistical analysis.

Statistical Analysis and Treatment:

Data were analysed using descriptive statistics, including:

- i. Frequency distribution
- ii. Percentages
- iii. Means
- iv. Standard deviations

These analyses were used to:

- i. Identify major stressors,
- ii. Describe coping strategies,
- iii. Summarize overall stress patterns among aspirants.

Results Tables Regarding Hypotheses:

Table No. 1 Major Sources of Stress Among MPSC Aspirants (N = 200)

Source of Stress	Frequency (f)	Percentage (%)
Academic Pressure	98	49%
Parental Expectations	76	38%
Personal Stressors	18	9%
Environmental Stressors	8	4%

****Hypothesis-Based Conclusive Descriptions (Based on Obtained Results)**

Conclusion for H1:

The results supported Hypothesis 1, as academic pressure (49%) emerged as the most significant source of stress among MPSC aspirants, exceeding parental, personal, and environmental stressors.

Conclusion for H2:

Findings partially supported Hypothesis 2. Aspirants predominantly used emotion-focused strategies such as yoga, meditation, listening to music, and peer support, indicating a preference for emotion-focused coping over problem-focused methods.

Conclusion for H3:

Hypothesis 3 was supported, as notable variations in stress levels were observed across different stress categories, with academic and parental stressors contributing substantially higher stress levels than personal or environmental factors.

Conclusion for H4:

Results supported Hypothesis 4, showing that aspirants using positive coping strategies like yoga, outdoor games, and meditation reported lower stress levels compared to those using avoidant or less structured coping methods.

Table No. 2 Common Coping Strategies Among MPSC Aspirants

Coping Strategy	Type
Practicing yoga	Behavioural
Listening to music	Emotional coping
Using the internet	Distraction
Talking to supportive peers	Social coping
Playing outdoor games	Physical coping
Communicating with parents	Social coping
Practicing meditation	Relaxation

Discussion:

The findings indicated that academic pressure was the most significant stressor for MPSC aspirants, consistent with previous research on competitive examination candidates (Deb et al., 2015; Kumar, 2020). Parental expectations emerged as another influential stressor, highlighting the sociocultural role of families in shaping performance-related stress. Personal and environmental stressors contributed minimally but remained relevant to the overall stress experience. Aspirants reported using a wide range of coping strategies, many of which aligned with healthy practices, including yoga, meditation, outdoor games, and peer communication. These findings are consistent with literature emphasizing the effectiveness of relaxation techniques and social support in stress management (Lazarus & Folkman, 1984).

The study's results also suggested incorporating additional structured techniques such as visualization, progressive muscle relaxation, and better organization to further enhance stress reduction. These strategies are frequently recommended in psychological literature and are known to promote adaptive coping in students preparing for competitive examinations.

Conclusion:

The study successfully identified the major sources of stress among MPSC aspirants and documented their coping behaviours. Academic pressure and parental expectations were found to be dominant stressors, while aspirants relied on a mixture of emotional, behavioural, and social coping methods. The findings provide valuable guidance for educators, parents, and students to develop supportive environments that reduce stress and encourage psychological well-being. The study also provides a foundation for further research on stress and coping among aspirants preparing without coaching or those pursuing other competitive examinations.

Scope of the Study:

The scope of this study includes:

- i. MPSC aspirants enrolled in full-time coaching institutes located in Baramati taluka, District Pune.
- ii. Assessment of the **sources of stress** and **coping strategies** adopted by these aspirants.
- iii. Use of the *Student's Stress Scale* (Manju Agrawal, 2012) and a coping strategies questionnaire.
- iv. Descriptive analysis of stress patterns, coping techniques, and their frequencies.
- v. The study is limited to a sample size of 200 aspirants who voluntarily participated.

Delimitations of the Study:

The study is delimited by the following factors:

- i. **Geographical limitation:**
The study is restricted to Baramati taluka, District Pune, and cannot be generalized to all MPSC aspirants across Maharashtra.
- ii. **Sample limitation:**
Only 200 aspirants enrolled in coaching institutes were selected; those preparing independently from home or online platforms were not included.
- iii. **Instrument limitation:**

The study uses the *Student's Stress Scale* and self-reported coping strategies, which may involve personal bias.

iv. **Time constraint:**

The study was conducted during a specific period (September 2025), which may influence stress levels based on exam schedules or personal circumstances.

v. **Focus limitation:**

Only stress and coping strategies were examined; factors such as motivation, personality, resilience, or social support were not included.

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SOCIAL MEDIA'S IMPACT ON ATHLETES: IDENTITY AND MENTAL HEALTH – A SECONDARY DATA REVIEW

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Abstract:

This paper examines the impact of social media on athletes' identity, self-presentation, and mental health using secondary data, existing literature, and global statistics. Findings show that while social media offers opportunities for visibility, branding, and community support, it also contributes to pressure, comparison, anxiety, cyberbullying, and identity confusion among athletes. A narrative review approach was used. Research from the APA, NCAA, Pew Research Center, WHO, and scholarly journals indicates that between 60–70% of young athletes experience stress due to online self-presentation, and approximately 40% report anxiety linked to negative feedback. Positive themes include skill learning, peer connection, and motivation. The paper concludes with recommendations for athletes, coaches, and institutions to create a healthier digital environment.

Keywords: Athletes, Social Media, Mental Health, Identity, Cyberbullying, Digital Pressure

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Introduction:

Social media has become one of the most influential elements in the lives of young people, including athletes who rely on digital platforms for communication, recognition, and identity formation. Reports from Pew Research (2023) show that over 95% of teenagers use YouTube, while 67% use TikTok and 62% use Instagram. Athletes use these platforms to present their achievements, interact with fans, and build personal brands. However, constant visibility can also create pressure, comparison, and mental strain.

Review of Literature:

Multiple studies highlight the influence of social media on athlete well-being. NCAA (2022) reports show that 33% of college athletes experience high levels of anxiety. APA (2023) highlights that comparison and cyberbullying increase risk of depression. Social comparison theory suggests athletes judge themselves based on curated images of peers. Researchers such as Smith (2021) and Gomez (2020) found that athletes with larger online presence experienced both greater opportunities and greater mental strain.

Methodology:

The study uses a secondary data narrative review approach. Data was collected from journal articles, reports, surveys, and organizational publications. No primary data or field survey was conducted.

Sources include WHO statistics, APA reports, NCAA mental health surveys, and publications from sports psychology journals. Themes were identified using qualitative analysis of repeated concepts across studies.

Findings (Thematic Analysis):

Theme 1: Pressure to Maintain an Ideal Image

Around 70% of young athletes report pressure to appear perfect online.

Theme 2: Social Comparison

Pew Research shows that 40% of teens compare themselves to others daily, leading to self-doubt.

Theme 3: Cyberbullying

NCAA reports indicate that 30–35% of athletes face online trolling or negative comments.

Theme 4: Positive Identity and Support

Social media allows athletes to share achievements, connect with mentors, and access peer communities.

Theme 5: Branding and Opportunities

Platforms like Instagram help athletes gain sponsorships, NIL deals, and visibility.

Discussion: The findings suggest that social media is a double-edged sword. While athletes gain recognition and motivation, they also struggle with unrealistic expectations. The constant need to present success and strength reduces the space for vulnerability. Cyberbullying and comparison deepen anxiety. However, supportive platforms and role models who talk openly about mental health, like Simone Biles, help normalize help-seeking.

Conclusion: Social media significantly shapes athletes' identity and mental health. It offers opportunities but also poses risks. Secondary data indicates that visibility, comparison, and cyberbullying are major challenges. Athletes benefit from guidance, digital literacy training, and mental health support systems.

Implications:

- Coaches should educate athletes on healthy digital habits.
- Institutions must provide mental health support.
- Parents should monitor and guide social media use.
- Athletes must learn to balance online presence with emotional well-being.

Limitations: This study uses secondary data only. No primary data or field survey was conducted. Some statistics may differ across countries or sports.

Future Scope: Future research may include primary surveys with athletes, gender-based comparison, and the impact of specific platforms such as TikTok or Instagram.

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AI AND COGNITIVE OFFLOADING AMONG COLLEGE STUDENTS: A SYSTEMATIC REVIEW

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Abstract:

The use of artificial intelligence (AI) tools is rapidly increasing among college students. These tools are mainly used to access information, complete assignments, prepare presentations, and even research papers. Cognitive offloading refers to reducing the mental processing required for a task through physical actions, such as writing a shopping list or using a calculator. This review gathers information about how AI is linked to putting mental work onto external tools.

This study reviewed 34 academic papers, mostly released from 2011 through 2025. The findings showed that AI tools have both advantages and disadvantages from offloading. Advantages include students' efficiency, improved accessibility, and adaptive scaffolding. Disadvantages include reduced internalization of knowledge, superficial processing, and diminished metacognitive oversight. Despite the widespread use of AI, evidence of its long-term effects on learning remains limited.

Keywords: Artificial Intelligence, Cognitive Offloading, Generative AI, Metacognition

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Introduction:

Advances in artificial, specifically generative AI, have introduced infinite opportunities for college students to access, generate, and manipulate information. As students mostly use AI for summarization, problem-solving, drafting, and conceptual clarification, concerns arise about cognitive offloading or the shifting of cognitive tasks from internal processes to external devices or systems.

Definitions of Basic Concepts:

Artificial Intelligence (AI): AI refers to the capability of computational systems to perform complex tasks traditionally associated with human intelligence, encompassing reasoning, pattern recognition, learning, problem-solving, and perception. In higher education, AI includes tools such as generative models (Chat GPT and Claude), adaptive tutoring systems, code assistants, search engines, and automated grading tools.

Cognitive Offloading: A psychological phenomenon in which individuals rely on external resources (notes, smartphones, and AI systems) to reduce internal cognitive load. Offloading may target memory for storing facts externally, procedures for outsourcing steps or calculations, reasoning for delegating analysis or decision making, and metacognition in relying on AI to evaluate quality or correctness.

Metacognition: The ability to monitor, regulate, and evaluate one's own thinking majorly used in research writing and drafting. Excessive reliance on AI may reduce the need for independent or critical monitoring.

Rationale of the review:

While many studies have investigated AI's helpfulness, very few studies have examined its cognitive consequences, such as effects on memory, reasoning, problem solving, and decision making. Educators worry that AI-based offloading may undermine critical thinking, reduce effortful learning, lead to factual inaccuracy if AI is uncritically accepted, and widen inequities depending on access. This review aims to summarize clearly what research has already discovered and what remains unknown about how college students use AI to offload or shift their thinking tasks.

Methods: A systematic literature review was conducted. A search for relevant studies was carried out using the databases Scopus, Web of Science, Google Scholar, PsycINFO, and IEEE Xplore. Search terms included cognitive offloading, AI offloading, generative AI and students, LLM and learning, external memory, AI in education, critical thinking and AI, college students and AI use, and metacognition and AI. The period covered was from 2011 to 2025, starting with Sparrow et al. (2011), who established foundational offloading theory in the digital era.

Results:

Different Patterns of AI Use and Offloading in Higher Education are found. Studies show that college students use AI for summarizing readings, explaining difficult concepts, brainstorming ideas, writing drafts or outlines, coding and debugging, translating or paraphrasing, solving quantitative problems, and checking their own answers. Students' offload is not only found in memory and information retrieval but also in higher-order thinking, such as reasoning, evaluation, argumentation, and step-by-step problem solving.

Four Cognitive Mechanisms Identified:

1. **Reduced Encoding and Rehearsal:** Encoding is the process of converting information into a storable format in memory, and rehearsal is effortful repetition to aid transfer to long-term memory. When students rely on AI to provide answers or explain concepts, they do not retain the information in their own memory. This parallels the "Google effect," where individuals outsource memory to external devices. Students also spend less time repeating or practicing the material, which normally helps them to learn. This happens because the brain does not feel the need to remember something that an external tool can recall anytime, similar to how people stop rehearsing phone numbers.
2. **Automation Bias:** This refers to the psychological tendency for humans to over-rely on automated systems, accepting their suggestions and decisions as correct, even when human judgment would indicate otherwise. Students tend to trust AI answers automatically, even when they are incorrect. This happens more when they are stressed, in a hurry, or unsure of their own knowledge. The bias occurs because AI sounds confident and people naturally prefer easy solutions. Scoping reviews show students are more likely to accept AI-generated responses without verification under time-constrained or uncertain conditions. (Yan et al., 2023)
3. **Attention Redistribution:** This is the dynamic process of shifting limited cognitive resources based on goals or task requirements. AI can shift a student's mental effort from routine tasks to higher-level thinking, but this only happens when students are trained to use AI wisely. Without training, students may become passive

and allow AI to perform all tasks. AI handles lower-level tasks (organizing, summarizing), allowing students to focus on interpreting ideas or analyzing arguments. Tomisu et al. (2025) noted that AI can free up working memory for planning, monitoring, and reflection, but only when learners are guided to intentionally reorient their attention.

4. **Metacognitive Offloading:** This occurs when students ask AI to judge their work instead of evaluating it themselves. Students seek quick reassurance or correction with minimal effort, and AI seems like a reliable "external brain". This results in them becoming less confident and less skilled at checking their own understanding. The concept of "metacognitive laziness" describes decreased engagement in self-regulatory processes when students rely on AI for revision or error-checking.

Advantages of cognitive offloading on Learning Outcomes:

Cognitive offloading can positively influence learners' performance when used strategically. Research suggests that offloading can enhance productivity, comprehension, and self-regulation when applied appropriately.

1. **Increased Efficiency:** AI tools can organize routine academic tasks, allowing students to complete assignments more quickly. Offloading summarization or formatting enables learners to direct resources toward complex processes like analysis and synthesis.
2. **Improved access to explanations:** AI provides instant explanations, examples, and alternative ways of understanding concepts, supporting deeper comprehension. Students can obtain real-time clarification, immediate feedback, and personalized explanations.
3. **Scaffolding for non-native speakers:** AI serves as a linguistic platform, bridging gaps in vocabulary, grammar, and academic writing. AI helps nonnative speakers express complex ideas more confidently and engage more actively.
4. **Reduced cognitive load for entry-level tasks:** AI can offset initial demands, allowing beginners to focus on understanding essential concepts before advanced tasks. For example, AI can help format citations, freeing time to evaluate sources.
5. **Increased confidence:** Receiving quick guidance, validation, or correction from AI can boost learner self-efficacy. When students see that they can produce clearer writing, solve problems with support, or obtain immediate clarification, they often feel more capable and motivated.

Disadvantages of cognitive offloading on Learning Outcomes: The literature identifies several drawbacks related to reduced internal cognitive engagement and weaker knowledge retention.

1. **Shallow learning due to shortcutting cognitive processes:** Offloading essential mental processes to AI bypasses the deeper cognitive engagement required for meaningful learning. This "shortcuts" mental effort, resulting in quick task completion but minimal conceptual understanding and limiting the ability to apply concepts in new contexts.
2. **Decreased retention of fundamental concepts:** Offloading reduces opportunities for active encoding, rehearsal, and retrieval practice. This results in weaker memory strengthening and diminished long-term retention of essential concepts, leading to significant knowledge gaps in cumulative subjects.

3. **Reduced practice of problem-solving steps:** Relying on AI for worked-out solutions causes students to lose the opportunity to engage deeply in procedural stages. This lack of practice impairs procedural fluency and strategic development, weakening independent problem-solving skills.
4. **Overconfidence based on the AI-generated accuracy illusion:** AI outputs often appear polished and confident, creating an illusion of accuracy. This leads students to overestimate AI's reliability and underestimate the need for critical evaluation.
5. **Potential long-term decay of foundational skills:** When AI consistently performs functions like summarizing or grammar checking, students lose valuable opportunities to practice these abilities. This can diminish core competencies, including logical reasoning, writing clarity, and independent analytical thinking.

Moderating Factors in Cognitive Offloading: Several factors influence the extent to which students offload AI and whether it helps or harms their learning.

1. **Prior knowledge:** New learners offload more because they lack foundational knowledge, making them less likely to fully understand or remember the material..
2. **AI literacy:** Knowledgeable students strategically use AI. Students who know how AI works tend to offload only the correct tasks and still think critically.
3. **Self-regulation:** High self-regulation is beneficial for offloading, as students can decide when to use AI, whereas low self-regulation often lets AI think, weakening skills.
4. **Discipline:** STEM students offload procedural tasks like calculations and coding. HSS students offload writing and syntheses, such as rewriting paragraphs or summarizing long texts.
5. **Task complexity:** The harder the task, the more likely students are to outsource reasoning, which carries the risk of learning about AI instead of learning the difficult parts themselves.

Interventions Identified in the Literature: Harmful cognitive offloading can be reduced through targeted teaching strategies.

1. **Metacognitive prompts:** Questions like “Explain how you verified AI output” encourage students to reflect on how they use AI rather than passively accepting answers.
2. **AI usage logs or annotations:** Requiring students to document when, why, and how they use AI tools increases transparency and encourages responsibility (Dwivedi et al., 2023; Holmes et al., 2022).
3. **Scaffolded assignments:** Breaking down complex tasks and requiring the justification of steps (e.g., showing calculations) prevents shortcut-taking and supports deeper learning.
4. **AI literacy in curriculum:** Teaching AI literacy helps students understand its limitations and common errors, leading to wiser and safer use. (Long & Magerko, 2020; Druga et al., 2021).
5. **Assessment redesign:** Researchers recommend designing tasks that require original thinking, such as oral evaluations or genuine real-world projects, to make it harder for students to rely solely on AI. (Susnjak 2023; Seldon 2023).

Thus, these interventions consistently help students use AI more responsibly and reduce harmful offloading.

Discussion:

These findings confirm that AI increases cognitive offloading beyond what earlier digital tools are enabled. Offloading can be beneficial if it supports accessibility, provides adaptive scaffolds, and reduces unnecessary load. However, it also reduces deliberate practice of skills that require effortful thinking.

Excessive offloading may diminish the development of critical thinking, working memory, analytic reasoning, and independent writing skills. This review supports the extension of Sparrow et al.'s “Google effect” into the AI era, where students now know not only 'where' to find information but also 'how' to generate complex solutions. Cognitive ecosystems are becoming hybrid systems—part internal, part algorithmic.

Practical and ethical implications for Higher Education are clear. Assessment redesign is necessary, as traditional assignments can be completed by AI without understanding. AI Literacy should be counted as a skill for verifying, interpreting, and adapting AI outputs. Equity is a major ethical issue, as uneven access to AI could widen achievement gaps. Academic integrity must shift from rule-based restriction to reflective disclosure.

Conclusion:

AI has become an integral part of college students' cognitive environment. This systematic review shows that AI can both support and undermine learning depending on how it is used. The most consequential impacts involve higher-order cognitive offloading, where reasoning itself is assigned to AI. A balanced approach guided by AI literacy, metacognitive reflection, and reimagined assessment can help institutions leverage AI's advantages while protecting students' cognitive development. Future research must investigate long-term effects, design effective interventions, and explore disciplinary differences

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IMPACT OF EMOTIONAL INTELLIGENCE AND EDUCATIONAL MEDIUM ON ACADEMIC ANXIETY AMONG THE ADOLESCENTS

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Abstract:

Research Background: EI refers to the capacity to identify, understand, and regulate emotions in oneself and others. Educational medium refers to the language or mode of communication used to deliver educational content within academic institutions. Anxiety is a type of performance-related anxiety that can negatively influence cognitive functioning, learning efficiency, and overall academic outcomes. Emotional Intelligence, academic anxiety, and educational medium are key factors influencing students' learning and performance. That way in this study, find out the impact of emotional intelligence and educational medium on academic anxiety of the adolescents.

Objectives: The study objective was to find out the effect of emotional intelligence on academic anxiety of adolescents. Another objective was to examine the effect of educational medium on academic anxiety of adolescents. Further, the objective was to study the significant interaction effect between emotional intelligence and educational medium on the academic anxiety of adolescents.

Procedure: The study included 200 adolescents, with 100 having high emotional intelligence and 100 having low emotional intelligence. Each group was evenly split between English and Marathi medium schools. In the study, the purposive sampling technique was used for the selection of the samples. Emotional intelligence and educational medium were independent variables, while academic anxiety was a dependent variable. The study emotional intelligence scale developed by A. K. Singh and Shruti Narain, and academic anxiety scale developed by Dr. M. Abid Siddiqui and Dr. Atieq Rehman has been used.

Conclusions: It can be concluded that adolescents with low emotional intelligence exhibit higher levels of academic anxiety compared to those with high emotional intelligence. Adolescents from English-medium and Marathi-medium schools show similar levels of academic anxiety. Additionally, no significant interaction effect was found between emotional intelligence and educational medium on the academic anxiety of adolescents.

Keywords: Emotional Intelligence, Educational Medium, Academic Anxiety, Adolescents.

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Introduction:

Emotional Intelligence (EI) refers to the capacity to identify, understand, and regulate emotions in oneself and others. The foundation of Emotional Intelligence emerged in early studies on social intelligence by Thorndike in the 1920. However, Emotional Intelligence gained scientific clarity when Mayer and Salovey formally defined

it in 1990. Salovey and Mayer first introduced Emotional Intelligence as a form of social intelligence that involves monitoring emotions and using emotional information to guide actions. Later, the construct was widely popularized by Goleman, who related Emotional Intelligence to success in leadership, work, and life. The term became mainstream after Daniel Goleman's 1995 book *Emotional Intelligence*, which emphasized its importance in personal achievement, mental health, and leadership performance. According to, Salovey & Mayer's (1990), Emotional Intelligence as a subset of social intelligence involving the ability to monitor one's own and others' emotions, to discriminate among those emotions, and to use emotional information to guide thinking and actions. Emotional Intelligence contributes significantly to both personal and professional functioning. Emotional Intelligence contributes significantly to both personal and professional functioning. Individuals with higher Emotional Intelligence demonstrate better self-control, resilience, adaptability, and stress management. In social contexts, Emotional Intelligence facilitates empathy and strengthens relationships, leading to more effective communication and cooperation. In the workplace, Emotional Intelligence is linked to leadership effectiveness, teamwork, productivity, conflict resolution, and organizational success.

Educational medium refers to the language or mode of communication used to deliver educational content within academic institutions. Educational medium, often referred to as "medium of instruction," is defined as the language used to teach subjects in schools, colleges, and universities. The medium of instruction plays a significant role in shaping learning outcomes, comprehension, cultural identity, and cognitive development. In multilingual nations like India, debates often arise over whether regional languages or English should serve as the primary instructional medium, especially in higher education. According to Cummins (2000), the instructional language influences cognitive academic language proficiency, which in turn affects conceptual learning. UNESCO (2016) emphasizes that learners perform more effectively when instructed in their first language, especially during foundational stages of education.

Academic anxiety is a psychological state marked by ongoing fear and worry related to academic performance, often manifesting as emotional distress and mental preoccupation over academic tasks and evaluation. This form of anxiety is a type of performance-related anxiety that can negatively influence cognitive functioning, learning efficiency, and overall academic outcomes. According to Sarason (1984), this anxiety occurs when the academic demands surpass a student's perceived capability to manage them. It is distinct from general anxiety, as academic anxiety is more context-specific and linked directly to academic performance rather than encompassing broader life concerns, as noted by Zeidner (1998). This phenomenon poses significant challenges to students' emotional well-being and academic success, often arising from various personal, social, and educational pressures. Research underscores that implementing effective emotional regulation strategies, nurturing supportive environments, and utilizing evidence-based interventions can significantly mitigate the effects of academic anxiety.

Emotional Intelligence, academic anxiety, and educational medium are key factors influencing students' learning and performance. High Emotional Intelligence help students manage stress, regulate emotions, and approach academic challenges confidently. Academic anxiety can hinder cognitive functioning and lower achievement,

while the choice of educational medium affects comprehension and conceptual understanding. Studying the interaction of these variables can provide valuable insights into improving academic outcomes and overall well-being in educational settings. In this study, an investigator has focused on finding out the impact of emotional intelligence and educational medium on academic anxiety of adolescents.

Significance of the Study:

Research on the impact of emotional intelligence and educational medium on academic anxiety among adolescents offers valuable insights into how these factors influence students’ emotional and cognitive functioning. Emotional intelligence and educational medium can affect adolescents’ ability to manage stress, cope with academic challenges, and develop confidence in their abilities. Understanding these effects can help design effective intervention programs to reduce academic anxiety in the adolescents. The study can help educators and parents create supportive learning environments tailored to students’ emotional and educational needs. The present study can help to understand how emotional intelligence and educational medium influence academic anxiety among high and low emotional intelligence as well as English and Marathi medium adolescents. The present study can help to understand differences in adolescents’ self-regulation and academic confidence based on language of instruction and emotional competencies.

Objectives of the Study:

1. To study the effect of emotional intelligence on academic anxiety of adolescents.
2. To study the effect of educational medium on academic anxiety of adolescents.
3. To study the significant interaction effect between emotional intelligence and educational medium of adolescents in terms of their academic anxiety.

Hypothesis of the Study:

1. Adolescents of low emotional intelligence would be high academic anxiety than adolescents of high emotional intelligence.
2. There will be no significant effect of emotional intelligence on academic anxiety of adolescents.
3. There will be no significant interaction effect between emotional intelligence and educational medium of adolescents in terms of their academic anxiety.

Research Procedure:

➤ **Variables of the Study:**

Independent Variables		Dependent Variable
Emotional Intelligence	Educational Medium	a) Academic Anxiety
a) High Emotional Intelligence	a) Marathi Medium	
b) Low Emotional Intelligence	b) English Medium	

➤ **Sample Size and Selection Procedure:**

The study two hundred adolescent were selected from the different secondary schools. Out of this sample, one hundred adolescents were selected from high emotional intelligence, in it, fifty samples were selected from English medium schools and fifty samples were selected from Marathi Medium schools. Same way,

one hundred adolescents were selected from low emotional intelligence, in it, fifty samples were selected from English medium schools and fifty samples were selected from Marathi Medium schools. The purposive sampling technique has been used for the selection of the samples. The study level of emotional intelligence and educational medium were independent variables and academic anxiety was dependent variable. The study emotional intelligence scale developed by A. K. Singh and Shruti Narain, and academic anxiety scale developed by Dr. M. Abid Siddiqui and Dr. Atieq Rehman has been used.

➤ **Research Design:**

In this research 2x2 research design has been used as follows,

Educational Medium	Emotional Intelligence		Total
	High Emotional Intelligence	Low Emotional Intelligence	
English Medium	50	50	100
Marathi Medium	50	50	100
Total	100	100	200

➤ **Operational Definitions:**

a) **Emotional Intelligence:**

In this study, adolescents who achieve the minimum scores on the Emotional Intelligence Scale, as per the manual, has been referred as low emotional intelligence adolescents. On the other hand, adolescents who achieve the maximum scores on the Emotional Intelligence Scale, as per the manual, has been referred as high emotional intelligence adolescents.

b) **Academic Anxiety:**

In this study, adolescents who achieve the minimum scores on the Academic Anxiety Scale, as per the manual, has been classified as low academic anxiety adolescents. On the other hand, adolescents who achieve the maximum scores on the Academic Anxiety Scale, as per the manual, has been referred as high academic anxiety adolescents.

c) **Adolescents:**

In this study, boys and girls between the ages of 13 and 20, who are studying in English or Marathi medium schools, has been referred to as adolescents.

➤ **Study Materials:**

- **Emotional Intelligence Scale:** In this study, emotional intelligence scale developed by A. K. Singh and Shruti Narain has been used. The scale consists of 31 items. This scale has been designed to measure emotional intelligence in individuals aged 12 years and above. This scale has been widely used in research and educational settings due to its simplicity, clear scoring, and ability to capture multiple dimensions of emotional intelligence. The total score ranges from 0 to 31. Reliability studies report a Cronbach's alpha of 0.86.

- **Academic Anxiety Scale:** In this study, academic anxiety scale developed by Dr. M. Abid Siddiqui and Dr. Atieq Rehman has been used. The scale consists of 44 items. The scale’s minimum possible score would be 44, and the maximum possible score is 132. Given the three-point format, actual observed means in different studies typically fall somewhere in the mid to high range of this scale.

Statistical Analysis and Results:

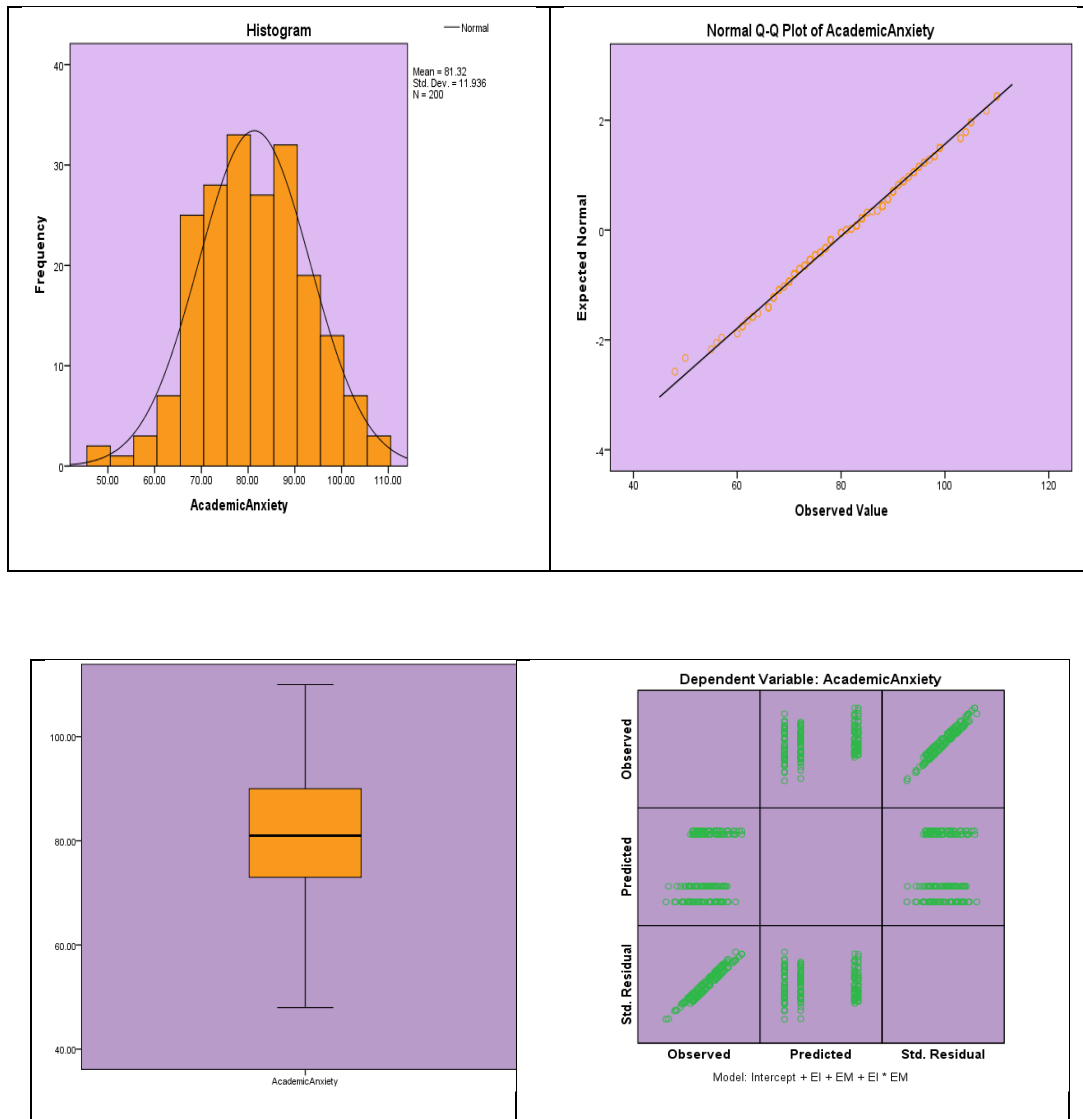
In this part, the investigator has explained impact of level of emotional intelligence and educational medium on academic anxiety of adolescents. The investigator has analyzed the data in following manner.

Table: 1 shows the assessing normality of the variable Academic Anxiety

Variable	Descriptive Statistics		Statistic	Std. Error
Academic Anxiety	Mean		81.3250	0.84398
	95% Confidence Interval for Mean	Lower Bound	79.6607	
		Upper Bound	82.9893	
	5% Trimmed Mean		81.3167	
	Median		81.0000	
	Variance		142.462	
	Std. Deviation		11.93573	
	Minimum		48.00	
	Maximum		110.00	
	Range		62.00	
	Inter quartile Range		17.00	
	Skewness		-0.004	0.172
	Kurtosis		-0.254	0.342

The table 1. Indicates that the trimmed mean value (81.3167) is very close to the simple mean (81.3250). Skewness and kurtosis describe the shape of the distribution and are used with interval and ratio level data. In this table, the skewness value (-0.004) is very close to zero, but it is not zero. The skewness value is negative and indicates that the distribution is somewhat negatively skewed. The kurtosis value (-0.254) is also close to zero, but it is not zero. The kurtosis value is negative, and that distribution is slightly flatter than normal (platykurtic). However, skewness and kurtosis both have fallen well within the acceptable range of ± 1 . So, both value distributions can be considered normal.

Plots: 1: Shows the normality of the data of variable Academic Anxiety.



Above plots indicates of variable academic anxiety. The shape of the distribution is considered normal.

Table:2: Shows descriptive statistics of the academic anxiety on the basis of each cell.

Emotional Intelligence	Educational Medium	Mean	SD	N
High Emotional Intelligence	English Medium	79.1000	11.48424	50
	Marathi Medium	77.5800	13.32037	50
	Total	78.3400	12.39682	100
Low Emotional Intelligence	English Medium	84.1400	11.24860	50
	Marathi Medium	84.4800	10.25241	50
	Total	84.3100	10.70891	100
Total	English Medium	81.6200	11.58960	100
	Marathi Medium	81.0300	12.32346	100
	Total	81.3250	11.93573	200

Table no. 2 is very useful, as it provides the mean and standard deviation for the groups that have been split by both independent variables; these are level of emotional intelligence and type of educational medium. In addition, the table also provides "Total rows," which allows means and standard deviation for groups only split by one independent variable or none at all to be known.

From table no. 2, it is observed that the mean of the adolescents of high emotional intelligence in English medium is 79.100, and the SD is 11.484 on academic anxiety. The mean of the adolescents of high emotional intelligence in Marathi medium is 77.580 and the SD is 13.320. The total mean of the adolescents of high emotional intelligence is 78.340, and the SD is 12.397 on the dependent variable academic anxiety.

In relation to table no. 2, it is observed that the mean of the adolescents of low emotional intelligence in English medium is 84.140, and the SD is 11.249 on academic anxiety. The mean of the adolescents of low emotional intelligence in Marathi medium is 84.480 and the SD is 10.252. The total mean of the adolescents of low emotional intelligence is 84.310, and the SD is 10.709 on the dependent variable academic anxiety.

As well, table no. 2 indicates that the mean score of the English medium adolescents is 81.620, and the SD is 11.580. The mean score of the Marathi medium adolescents is 81.030, and the SD is 12.323. Finally, the total mean score of all groups combined (high and low emotional intelligence + English and Marathi Medium) is 81.325 with an SD of 11.936 on the dependent variable academic anxiety.

Table 3: Shows Levene's test of equality of error variances for the variable academic Anxiety.

Variable	F	df1	df2	Sig.
Academic Anxiety	2.077	3	196	0.105

The above table no. 3 presents the results of Levene's Test of equality of error variances for the dependent variable of academic anxiety. The test is used to examine the assumption of homogeneity of variances, which is

an important requirement in Analysis of Variance. In this table, the obtained F-value is 2.077 with degrees of freedom are $df_1 = 3$, and $df_2 = 196$. The corresponding Significance value is 0.105. On the above description that, we have homogeneity of variances of the dependent variable across groups. The Levene's test indicates that the homogeneity of variance assumption has not been violated because the significant value is 0.105 which is greater than 0.05. In other words, there is no significant difference in the variances of academic anxiety scores across the groups formed by emotional intelligence, and educational medium, as well as their interaction (Emotional Intelligence X Educational Medium). Hence, the assumption of homogeneity of variance is satisfied. It is appropriate to proceed with the factorial ANOVA analysis for examining the effects of emotional intelligence, educational medium, and their interaction (Emotional Intelligence X Educational Medium) on the level of academic anxiety.

Table: 4: Shows summary of ANOVA of the academic anxiety

Source	Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Emotional Intelligence	1782.045	1	1782.045	13.177	0.01	0.063
Educational Medium	17.405	1	17.405	0.129	NS	0.001
Emotional Intelligence X Educational Medium	43.245	1	43.245	0.320	NS	0.002
Error	26507.180	196	135.241			
Total	1351101.000	200				
Corrected Total	28349.875	199				

Significant Level, $df(1,196)$ ---- $0.05 = 3.89$ $0.01 = 6.76$

Eta Squared effect size, $0.01 = \text{small}$ $0.06 = \text{moderate}$ $0.14 = \text{large effect}$ (Cohen, 1988)

From table 4, a two-way ANOVA was conducted that examined the effect of emotional intelligence and educational medium on an individual's level of academic anxiety. Our dependent variable, academic anxiety, was normally distributed for the groups formed by the combination of the emotional intelligence, such as the high and low emotional intelligence of adolescents, as well as the educational medium, such as the Adolescents of English and Marathi Medium, as assessed by the histogram, skewness, and kurtosis. There was homogeneity of variance between groups as assessed by Levene's test for equality of error variances.

The main effects analysis showed that the emotional intelligence is significant, $F(1,196) = 13.177$, $p < 0.01$. This indicates that there is a statistically significant difference in the level of academic anxiety between adolescents of high emotional intelligence and low emotional intelligence. As per Table 2, the mean score of

academic anxiety among adolescents of high emotional intelligence is 78.34 with SD = 12.39, whereas the mean score among adolescents of low emotional intelligence is 84.31 with SD = 10.70. Thus, adolescents of low emotional intelligence have been found higher academic anxiety than the adolescents of high emotional intelligence. The effect size (partial eta square) for the main effect is 0.063, indicating a moderate effect, meaning that emotional intelligence explains 6.3 percent variance in academic anxiety. On the basis of the description in hypothesis no. 1, “*Adolescents of low emotional intelligence would be high academic anxiety than adolescents of high emotional intelligence*” is accepted. Because there is a significant difference in the level of academic anxiety among the adolescents of low and high emotional intelligence. The adolescents with low emotional intelligence have higher academic anxiety. It means emotional intelligence is a contributory factor in deciding the level of academic anxiety among the adolescents.

The main effect analysis showed that the type of educational medium is not significant, $F(1,196) = 0.129$, $p > 0.05$. Therefore, the type of educational medium is not found to significantly influence the academic anxiety of adolescents. The English-medium and Marathi-medium adolescents have been found equal in their level of academic anxiety. As per Table 2, the academic anxiety mean score of English-medium adolescents is 81.62, and SD is 11.58. In contrast, the academic anxiety mean score of Marathi-medium adolescents is 81.03, and SD is 12.32. The effect size (partial eta square = 0.001) for the main effect of educational medium on academic anxiety is extremely small, indicating that the influence of this variable explains a negligible proportion of variance in academic anxiety among the adolescents. Because of the insignificant result, the eta square, the measure of effect size, associated with the main effect is not mentioned here. Therefore, on the basis of the description in hypothesis no. 2, “*There will be no significant effect of emotional intelligence on academic anxiety of adolescents*” is accepted. English-medium and Marathi-medium adolescents do not differ significantly in their level of academic anxiety. It means that the educational medium of adolescents is not a vital dimension in deciding their level of academic anxiety.

The interaction effect analysis revealed that the combined influence of emotional intelligence and educational medium is not statistically significant, $F(1,196) = 0.320$, $p > 0.05$. This indicates that the effect of emotional intelligence on academic anxiety does not differ depending on the educational medium among the adolescents. In other words, the difference in academic anxiety between adolescents of high and low emotional intelligence does not change across English-medium and Marathi-medium groups. The effect size (partial eta square) for the interaction effect is 0.002, indicating an extremely small effect, meaning that only 0.2 percent of the variance in academic anxiety is explained by the combined influence of emotional intelligence and educational medium. Therefore, on the basis of the description in hypothesis no. 3, “*There will be no significant interaction effect between emotional intelligence and educational medium of adolescents in terms of their academic anxiety*” is accepted. It is therefore concluded that no significant interaction effect between emotional intelligence and educational medium on the academic anxiety of adolescents.

Discussion:

The present study found that emotional intelligence has a significant effect on academic anxiety among adolescents. Adolescents of low emotional intelligence have found higher academic anxiety than those of high emotional intelligence. Mayer, Salovey, & Caruso (2008) and Petrides, Frederickson, & Furnham (2004) found that adolescents with higher emotional intelligence are better at recognizing and managing their emotions. In this study, the effect size was found to be moderate, indicating that emotional intelligence explains a considerable portion of the differences in academic anxiety. Goleman (1995), Zeidner (1998), and Extremera & Fernández-Berrocal (2006) observed that adolescents with higher emotional intelligence tend to use adaptive coping strategies, which reduces their anxiety in challenging academic situations.

It was found that, adolescents studying in English-medium and Marathi-medium schools showed similar levels of anxiety. The effect size for educational medium was found extremely small, indicating that the language of instruction does not play a major role in differences in academic anxiety. According to, Cummins (2000) and UNESCO (2016) that while the medium of instruction may influence comprehension or cognitive performance in younger students, it has less effect on emotional outcomes like anxiety.

It was found that the interaction between emotional intelligence and educational medium is not statistically significant. This means that the influence of emotional intelligence on academic anxiety remains consistent for both English-medium and Marathi-medium adolescents. It was reported by Extremera and Fernández-Berrocal (2006) and Petrides et al. (2004) that the positive effects of emotional intelligence in reducing stress and anxiety are consistent across different educational and cultural settings.

Conclusions:

1. Emotional intelligence has a found significant impact on academic anxiety among the adolescents. The adolescents of low emotional intelligence found higher academic anxiety compared to adolescents of high emotional intelligence.
2. Educational medium does not found significantly influence on academic anxiety of the adolescent. The adolescents of English medium and Marathi-medium found similar levels of academic anxiety.
3. There is no found significant interaction effect between emotional intelligence and educational medium on academic anxiety of the adolescents, indicating that the influence of emotional intelligence on academic anxiety remains consistent across different educational mediums.

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IMPACT OF ADJUSTMENT AND FAMILY COMPOSITION ON LIFE SKILLS AMONG THE ADOLESCENTS

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Abstract:

Research Background: Adjustment, life skills, and family composition are closely interconnected in adolescent development. A supportive family composition, whether nuclear or joint, provides the emotional, social, and cognitive environment that influences how adolescents adjust to life challenges. That way in this study, find out the impact of emotional intelligence and educational medium on academic anxiety of the adolescents.

Objectives: The study objective was to find out the effect of level of adjustment on life skills of adolescents. Another objective was to examine the effect of family composition on life skills of adolescents. Further, the objective was to study the significant interaction effect between level of adjustment and family composition on the life skills of adolescents.

Procedure: The study one hundred sixty adolescent were selected from the society. Out of them, eighty adolescents were selected from batter adjustment level, and same way, eighty adolescents were selected from poor adjustment level. The purposive sampling technique has been used for the selection of the samples. The study adjustment and family composition were independent variables and life skills was dependent variable. The study Adjustment Inventory developed by P. Kumar and Life Skills Scale by Chandra Kumari and Ayushi Tripathi has been used.

Conclusions: It can be concluded that adolescents of better adjustment found excellent life skills than adolescents of poor adjustment. Adolescents of joint family composition and nuclear family composition show equal on their life skills. Additionally, no significant interaction effect was found between adjustment and family composition on the life skills of adolescents.

Keywords: Adjustment, Family Composition, Life Skills, Adolescents.

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Introduction:

Adjustment is a fundamental concept in psychology that refers to the process by which an individual achieves harmony with their environment. Adjustment refers to the psychological process through which an individual maintains harmony with their environment. It is a continuous process through which a person modifies their behavior, emotions, and thought patterns in response to internal needs and external demands. According to Hurlock (2010), adjustment is the process through which an individual finds an optimal way to cope with environmental demands while fulfilling personal needs. Similarly, Anastasi and Urbina (1997) suggested that

adjustment is a dynamic process in which individuals adapt to changes, challenges, and stressors in their environment to maintain well-being. Research has consistently highlighted the importance of effective adjustment in adolescents for their overall development. Kumar and Sharma (2018) found that adolescents who employ effective coping strategies demonstrate greater emotional stability and enhanced social competence, indicating that the ability to manage stress positively influences both personal and social domains. Similarly, Singh and Singh (2016) emphasized the role of the family environment, reporting that adolescents from supportive families tend to show better personal and social adjustment. In the academic context, Rao and Rao (2019) observed that effective academic adjustment is closely linked with improved time management, organized study habits, and strong peer support among college students.

Family composition or family type refers to the structure and organization of a family unit, including the relationships among family members and the roles they perform. According to, Haralambos & Holborn (2008): “Family composition is the arrangement and interaction of family members within a household, including roles, responsibilities, and intergenerational relationships.” Family composition plays a crucial role in shaping an individual’s social, emotional, and cognitive development, particularly during adolescence. Research has shown that family composition significantly influences various aspects of adolescent development. Singh and Singh (2016) found that adolescents from supportive nuclear families demonstrated better academic adjustment, whereas those from joint families benefited from stronger social and emotional support. Similarly, Sharma and Verma (2018) highlighted that adolescents living in joint families often develop superior interpersonal and collaborative skills, likely due to shared responsibilities and interactions across multiple generations. In addition, Rao and Rao (2019) observed that adolescents from nuclear families exhibited higher levels of independence and decision-making abilities, while those from extended families showed greater emotional support and resilience. These findings collectively suggest that both nuclear and joint family environments contribute uniquely to the social, emotional, and cognitive development of adolescents.

Life skills refer to a set of psychosocial abilities that enable individuals to deal effectively with the demands and challenges of everyday life. Life skills help individuals make informed decisions, communicate effectively, solve problems, manage emotions, and build healthy relationships, contributing to successful adaptation in personal, academic, and social domains. Life skills are particularly important for adolescents, who face rapid physical, cognitive, and social changes. According to, World Health Organization (WHO, 1997) “Life skills are abilities for adaptive and positive behavior that enable individuals to deal effectively with the demands and challenges of everyday life.” In this study, an investigator has focused on finding out the impact of adjustment and family composition on life skills of adolescents.

Significance of the Study:

This study is important because it helps us understand how adolescents’ adjustment affects their life skills. It also shows how different family types, such as joint or nuclear families, influence these life skills. The study explains how both adjustment and family composition work together to shape adolescents’ development. Its findings can help parents, teachers, and counselors support adolescents more effectively. Overall, the study will

be useful in improving life skills education and guidance programmes for young people.

Objectives of the Study:

1. To study the effect of level of adjustment on life skills of adolescents.
2. To study the effect of family composition on life skills of adolescents.
3. To study the significant interaction effect between level of adjustment and family composition of adolescents in terms of their life skills.

Hypothesis of the Study:

1. Adolescents of better adjustment will have excellent life skills than adolescents of poor adjustment.
2. Adolescents of joint family composition will have excellent life skills than adolescents of nuclear family composition.
3. There will be no significant interaction effect between adjustment and family composition of adolescents in terms of their life skills.

Research Procedure:

Operational Definitions:

- a) **Adjustment Level:** In this study, adolescents who scored between zero and ten on the Adjustment Inventory developed by P. Kumar, as per the manual, were referred to as adolescents with a better level of adjustment. On the other hand, adolescents who scored between twenty-six and forty on the same inventory were referred to as adolescents with a poor level of adjustment.
- b) **Life Skills:** In this study, adolescents who achieved the minimum scores on the Life Skills Scale developed by Chandra Kumari and Ayushi Tripathi, as per the manual, were classified as adolescents with poor life skills. On the other hand, adolescents who achieved the maximum scores on the same scale were referred to as adolescents with better life skills.
- c) **Adolescents:** In this study, boys and girls aged 14 to 19, living in either joint or nuclear families, were referred to as adolescents.
- d) **Family Composition:** In the present research, family composition has been referred to according to the joint and nuclear family patterns in society.

Variables of the Study:

Independent Variables		Dependent Variable
Adjustment Level	Family Composition	a) Life Skills
a) Better Adjustment	a) Joint Family	
b) Poor Adjustment	b) Nuclear Family	

Sample Selection Procedure:

The study one hundred sixty adolescents were selected from the society. Out of them, eighty adolescents were selected from the battery adjustment level, in it, forty adolescents were selected from Joint family composition and forty adolescents were selected from nuclear family composition. Same way, eighty adolescents were

selected from poor adjustment levels. Forty adolescents were selected from Joint family composition and forty adolescents were selected from nuclear family composition. The purposive sampling technique has been used for the selection of the samples. The study adjustment level and family composition were independent variables and life skills were dependent variables. The study Adjustment Inventory developed by P. Kumar and Life Skills Scale by Chandra Kumari and Ayushi Tripathi has been used.

Research Design:

In this research 2x2 research design has been used as follows,

Family Composition	Adjustment Level		Total
	Better Adjustment	Poor Adjustment	
Joint Family	40	40	80
Nuclear Family	40	40	80
Total Sample	80	80	160

Data Collection Materials:

- **Adjustment Inventory:** The Adjustment Inventory was developed by P. Kumar. The inventory consists of 40 items and is suitable for individuals aged 14 to 19 years. The reliability coefficients of the inventory are 0.88 for internal consistency, 0.87 for split-half reliability, and 0.82 for test–retest reliability. The validity of the inventory ranges from 0.77 to 0.80.
- **Life Skills Scale:** The Life Skills Scale was developed by Chandra Kumari and Ayushi Tripathi. The scale consists of 52 items and was standardized on a sample of 300 adolescents aged between 10 and 19 years.

Statistical Analysis and Results:

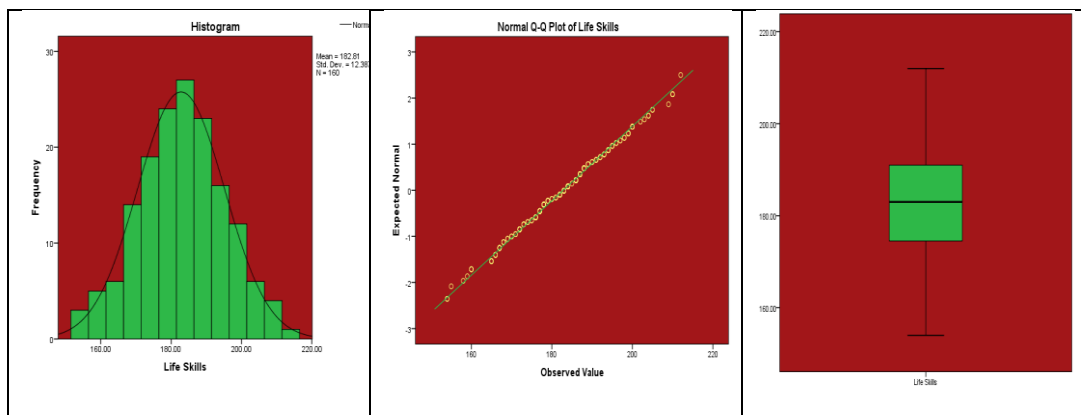
In this part, the investigator has explained the impact of level of adjustment and family composition on life skills of adolescents. The investigator has analyzed the data in the following manner.

Table: 1 shows the assessing normality of the variable life skills

Variable	Descriptive Statistics		Statistic	Std. Error
Life Skills	Mean		182.8125	0.97927
	95% Confidence Interval for Mean	Lower Bound	180.8784	
		Upper Bound	184.7466	
	5% Trimmed Mean		182.8125	
	Median		183.0000	
	Variance		153.436	
	Std. Deviation		12.38694	
	Minimum		154.00	
	Maximum		212.00	
	Range		58.00	
	Inter quartile Range		16.75	
	Skewness		0.037	0.192
	Kurtosis		-0.297	0.381

Table 1 indicates that the trimmed mean value (182.8125) is very close to the simple mean (182.8125). Skewness and kurtosis describe the shape of the distribution and are used with interval and ratio level data. In this table, the skewness value (0.037) is very close to zero. The skewness value is slightly positive and indicates that the distribution is nearly symmetrical with a very mild right skew. The kurtosis value (-0.297) is also close to zero, but it is not zero. The kurtosis value is negative, suggesting that the distribution is slightly flatter than normal (platykurtic). However, both skewness and kurtosis values fall well within the acceptable range of ± 1 . Therefore, the distribution of the *Life Skills* variable can be considered normal.

Plots: 1: Shows the normality of the data of variable life skills



Above plots indicate variable life skills. The shape of the distribution is considered normal.

Table:2: Shows descriptive statistics of the life skills on the basis of each cell.

Adjustment Level	Family Composition	Mean	SD	N
Batter Adjustment Adolescents	Joint Family Adolescents	180.2750	8.98143	40
	Nuclear Family Adolescents	178.1500	11.55932	40
	Total	179.2125	10.34065	80
Poor Adjustment Adolescents	Joint Family Adolescents	187.1750	10.86251	40
	Nuclear Family Adolescents	185.6500	15.38156	40
	Total	186.4125	13.25284	80
Total	Joint Family Adolescents	183.7250	10.49409	80
	Nuclear Family Adolescents	181.9000	14.03576	80
	Total	182.8125	12.38694	160

Table no. 2 is very useful, as it provides the mean and standard deviation for the groups that have been split by both independent variables; these are level of adjustment and family composition. In addition, the table also

provides "Total rows," which allows means and standard deviation for groups only split by one independent variable or none at all to be known.

From table no. 2, it is observed that the mean of the adolescents of better adjustment in joint family is 180.275, and the SD is 8.981. The mean of the adolescents of better adjustment in the nuclear family is 178.150 and the SD is 11.559. The total mean of the adolescents of better adjustment is 179.213, and the SD is 10.341 on the dependent variable life skills.

In relation to table no. 2, it is observed that the mean of the adolescents of poor adjustment in joint family is 187.175, and the SD is 10.863 on life skills. The mean of the adolescents of poor adjustment in the nuclear family is 185.650 and the SD is 15.382. The total mean of the adolescents of poor adjustment is 186.413, and the SD is 13.253 on the dependent variable life skills.

As well, table no. 2 indicates that the mean score of the adolescents of joint family is 183.725, and the SD is 10.494. The mean score of the adolescents of the nuclear family is 181.900, and the SD is 14.036. Finally, the total mean score of all groups combined is 182.813 with an SD of 12.387 on the dependent variable life skills.

Table: 3: Shows summary of ANOVA of the life skills

Source	Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Adjustment Level	2073.600	1	2073.600	14.580	0.01	0.085
Family Composition	133.225	1	133.225	0.937	NS	0.006
Adjustment Level X Family Composition	3.600	1	3.600	0.025	NS	0.000
Error	22185.950	156	142.218			
Total	5371662.000	160				
Corrected Total	24396.375	159				

Significant Level, $df(1,156)$ ---- $0.05 = 3.90$ $0.01 = 6.80$

Eta Squared effect size, $0.01 = \text{small}$ $0.06 = \text{moderate}$ $0.14 = \text{large effect}$ (Cohen, 1988)

From table 4, a two-way ANOVA was conducted that examined the effect of adjustment and family composition on an individual's life skills. Our dependent variable, life skills, was normally distributed for the groups formed by the combination of the adjustment, such as the better and poor adjustment level of adolescents, as well as the family composition, such as the adolescents of joint and nuclear family, as assessed by the histogram, skewness, and kurtosis. There was homogeneity of variance between groups as assessed by Levene's test for equality of error variances.

The main effects analysis showed that the adjustment level is significant, $F(1,156) = 14.580$, $p < 0.01$. This indicates that there is a statistically significant difference in the level of life skills between adolescents of better and poor adjustment. As per Table 2, the mean score of life skills among the adolescents of better adjustment is 179.213 and SD is 10.341, whereas the mean score among adolescents of poor adjustment is 186.413 and SD is 13.253. Thus, adolescents of better adjustment have been found to have excellent life skills than adolescents of poor adjustment. The effect size (partial eta square) for the main effect is 0.085, indicating a moderate effect, meaning that level of adjustment explains 8.5 percent variance in life skills. On the basis of the description in hypothesis no. 1, “Adolescents of better adjustment will have excellent life skills than adolescents of poor adjustment” is accepted. Because there is a significant difference found in life skills among the adolescents of better and poor adjustment. The adolescents of better adjustment have found excellent life skills than adolescents of poor adjustment. It means level of adjustment is a contributory factor in deciding the quality of life skills of the adolescents.

The main effect analysis showed that the family composition is not significant, $F(1,156) = 0.937$, $p > 0.05$. Therefore, the family composition is not found to significantly influence the life skills of the adolescents. The joint and nuclear family adolescents have been found equal in their level of life skills. As per table 2, the life skills mean score of joint family adolescents is 183.725, and SD is 10.494. In contrast, the life skills mean score of nuclear family adolescents is 181.900, and SD is 14.036. The effect size (partial eta square = 0.006) for the main effect of family composition on life skills is extremely small, indicating that the influence of this variable explains a negligible proportion of variance in level of life skills among adolescents. Because of the insignificant result, the eta square, the measure of effect size, associated with the main effect is not mentioned here. Therefore, on the basis of the description in hypothesis no. 2, “Adolescents of joint family composition will have excellent life skills than adolescents of nuclear family composition” is rejected. Joint family and nuclear family adolescents do not differ significantly in terms of their life skills. It means that the family composition of adolescents is not a vital dimension in deciding their level of life skills.

The interaction effect analysis revealed that the combined influence of level of adjustment and family composition is not statistically significant, $F(1,156) = 0.025$, $p > 0.05$. This indicates that the effect of adjustment on life skills does not differ depending on the family composition among the adolescents. In other words, the difference in life skills between adolescents of better and poor adjustment does not change across joint and nuclear family composition. The effect size (partial eta square=0.000) for the interaction effect, indicating an extremely small effect, meaning that only 0.0 percent of the variance in the life skills is explained by the combined influence of adjustment and family composition. Therefore, on the basis of the description in hypothesis no. 3, “There will be no significant interaction effect between adjustment and family composition of adolescents in terms of their life skills” is accepted. Therefore, concluded that no significant interaction effect between adjustment and family composition on the level of life skills of adolescents.

Discussion:

The findings of the present study indicate that the level of adjustment is a significant psychological determinant of adolescents' life skills. Adolescents with better adjustment demonstrated higher life-skill competence, a result supported by earlier studies which found that emotional stability, problem-solving ability, and social competence improve with better adjustment (Ganguly & Chatterjee, 2018; Mishra & Singh, 2019). In contrast, family composition showed no significant influence on life skills, aligning with research suggesting that the quality of family interactions and parental involvement are more influential than whether the family is joint or nuclear (Kumar & Thomas, 2020; UNICEF, 2019). Moreover, the interaction between adjustment and family composition was also non-significant, consistent with Bronfenbrenner's (1994) ecological view that individual psychological characteristics operate independently of structural family variables.

Conclusions:

1. Level of adjustment has a found significant impact on life skills among adolescents. The adolescents of better adjustment found excellent life skills than adolescents of poor adjustment level.
2. Family composition does not found significant influence on the level of life skills of the adolescent. The adolescents of joint family and nuclear family found equality in their level of life skills.
3. There is no found significant interaction effect between adjustment and family composition on life skills of adolescents, indicating that the influence of level of adjustment on life skills remains consistent across different family compositions.

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MOBILE ADDICTION AND STRESS AMONG COLLEGE STUDENTS: A PSYCHOLOGICAL STUDY

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Introduction:

Over the last two decades, the rapid advancement of science and technology has transformed the mobile phone from a simple communication device into an inseparable part of human life. Initially invented for basic telecommunication, the mobile phone has now evolved into a multifunctional tool that facilitates education, business, entertainment, healthcare services, banking, shopping, and instant global connectivity through social media platforms.

For college students, mobile phones can serve as a valuable educational aid. However, their usage is not always restricted to academic purposes. The engaging nature of social media, online gaming, video streaming, and continuous messaging leads many students to spend an excessive amount of time on their devices, often at the cost of their studies. Such uncontrolled and persistent usage results in symptoms of mobile addiction. Addiction refers to a behavioural pattern wherein a person loses control over their actions, continues the behaviour despite negative consequences, and experiences discomfort when attempting to stop.

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Mobile addiction affects not only physical health but also psychological well-being. Lack of concentration, reduced sleep quality, laziness, social withdrawal, and declining academic performance are commonly observed outcomes. One of the most significant psychological consequences associated with excessive mobile use is stress.

Stress is a physical and psychological reaction experienced in situations perceived as challenging, threatening, or overwhelming. Among college students, stress often arises due to academic pressure, career uncertainties, complex interpersonal relationships, high expectations from parents and teachers, and the competitive environment in educational institutions. Stress manifests through physical symptoms (e.g., headaches, insomnia, fatigue), psychological symptoms (e.g., irritability, depression, reduced self-confidence), and social difficulties (e.g., withdrawal from relationships, reduced interaction).

Students already face multiple academic and emotional challenges, and the excessive use of mobile phones intensifies their stress. Mobile usage interferes with sleep, reduces concentration, disrupts emotional balance, and contributes to chronic stress patterns.

Against this backdrop, the present study aims to investigate the relationship between mobile phone addiction and stress among college students, focusing particularly on gender differences and the severity of these psychological variables

Review of Literature:

Psychological research has consistently highlighted mobile addiction as a growing concern across the world. Young (1996), in one of the earliest studies on internet addiction, observed that behavioural addictions resemble substance-related addictions in symptoms such as increased tolerance, lack of control, and withdrawal discomfort. These foundational findings laid the groundwork for understanding mobile addiction as a comparable behavioural disorder.

Thomé (2011), through a prospective study, reported that excessive mobile use among young adults contributes to sleep disturbances, heightened stress levels, and symptoms of depression. These findings emphasize the significant influence of digital habits on mental health, especially among youth.

Kuss and Griffiths (2015) found that addictive use of social networking sites such as Facebook and Instagram adversely impacts emotional well-being. Their study highlighted how constant engagement, validation-seeking, and fear of missing out (FOMO) contribute to psychological distress.

Prasad (2017) examined medical students and documented a strong correlation between mobile phone addiction and increased stress. This study is particularly relevant in the Indian context, where academic competition is intense and mobile usage is rapidly increasing among youth.

Furthermore, recent global research has shown that mobile addiction is strongly associated with poor academic outcomes, emotional instability, impaired decision-making, and disruptions in daily routines. Several studies also highlight gender variations, suggesting that emotional sensitivity, social role expectations, and coping styles influence stress and addiction patterns differently among males and females.

Overall, the literature indicates that mobile addiction has emerged as a significant global mental health concern, and that it is closely linked to stress. The present study builds upon these findings to examine this relationship specifically among Indian college students.

Research Methodology:

Statement of the Problem:

To study mobile phone addiction and stress among college students.

Objectives of the Study:

1. To measure the level of mobile addiction among college students.
2. To study the gender differences in mobile addiction.
3. To measure the stress levels among college students.
4. To study gender differences in stress.

Hypotheses:

1. College students will show a high level of mobile addiction.
2. Girls will show lower levels of mobile addiction compared to boys.

3. College students will show a high level of stress.
4. Boys will show lower levels of stress compared to girls.

Sample:

The sample consisted of 200 students (100 boys and 100 girls) aged between 18 and 21 years, selected from colleges of Pandharpur city. Purposive sampling technique was used.

Inclusion Criteria:

1. Students between 18 and 21 years of age
2. Minimum two years of mobile phone usage
3. Regular attendance in college

Exclusion Criteria:

1. Students suffering from severe physical or psychological disorders
2. Students who do not use a mobile phone

Data Collection Procedure:

Two standardized tools were administered through Google Forms after providing the participants with necessary instructions. All students completed the questionnaires individually in a controlled environment.

Tools of the Study:

Mobile Phone Addiction Scale (MPAS):

The MPAS, developed by Dr. Velayudhan and Srividya (2012), consists of 37 items rated on a 5-point Likert scale. It measures symptoms of mobile phone addiction such as compulsive use, loss of control, and withdrawal. The scale shows high reliability, with Cronbach’s alpha = 0.80–0.90.

Perceived Stress Scale (PSS-10)

The PSS-10, developed by Cohen et al. (1983), includes 10 items rated on a 5-point response format. It assesses the degree to which individuals perceive life situations as stressful. The scale has strong reliability, with Cronbach’s alpha = 0.78–0.91 and test–retest reliability = 0.55–0.85.

Statistical Analysis:

Mobile Addiction:

Group	Mean	SD	t
Boys	139.01	9.48	1.74 (ns)
Girls	136.52	10.78	

Boys have a slightly higher average mobile addiction score (139.01) with SD 9.48 than girls with SD 10.78 (136.52). This means boys show a bit more mobile addiction compared to girls. The t-test checks whether the difference between boys and girls is statistically significant. “ns” means not significant. This indicates that even though boys scored slightly higher, the difference is not statistically meaningful. In other words, boys and girls have similar levels of mobile addiction.

Stress:

Group	Mean	SD	t
Boys	30.11	3.72	-3.28 (p = 0.001)
Girls	32.18	32.18	

The findings indicate that girls (Mean = 32.18) scored higher than boys (Mean = 30.11) on the assessed variable, showing that girls tend to exhibit a stronger level of this characteristic compared to boys. The obtained t-value of -3.28 and the highly significant p-value of 0.001 clearly demonstrate that this difference is statistically meaningful and not due to random variation. This suggests a consistent pattern in which girls outperform boys on this measure, and the results provide strong evidence of a genuine gender-based difference in the sample.

Conclusion:

1. Mobile addiction among college students was found to be above average and at a high level.
2. No significant gender difference was observed in mobile addiction.
3. Stress levels among students were found to be high.
4. A significant gender difference in stress was observed, with girls showing higher stress levels than boys.

Implications:

1. **Mental Health Awareness:** Conduct workshops on mobile addiction and stress management.
2. **Counselling Services:** Establish counselling centres in colleges to support affected students.
3. **Regulated Mobile Usage:** Encourage academic use and reduce unnecessary screen time.
4. **Social and Emotional Support:** Parents and teachers should reduce pressure and provide emotional encouragement.
5. **Special Programs for Girls:** Considering their higher stress levels, creative and physical activities should be promoted among female students.

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PSYCHOLOGICAL CAPITAL AND ORGANISATIONAL COMMITMENT AMONG EMPLOYEES IN AI-DRIVEN WORK ENVIRONMENTS: A REVIEW

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Abstract:

The rapid growth of artificial intelligence (AI) across industries has reshaped contemporary workplaces, generating both opportunities and psychological challenges for employees. While AI-driven systems enhance efficiency, they also introduce uncertainty, job redesign, and increased cognitive demands (Brynjolfsson & McAfee, 2017). Psychological capital (PsyCap) defined as a positive psychological state comprising hope, efficacy, resilience, and optimism (Luthans et al., 2007) has emerged as a crucial internal resource influencing how employees perceive and respond to technological change. This review synthesises research on the relationship between PsyCap and organisational commitment in AI-driven workplaces. Evidence from digital transformation and automation research suggests that higher PsyCap predicts stronger affective and normative commitment (Meyer & Allen, 1991; Avey et al., 2011), greater adaptability, and reduced turnover intention. PsyCap appears to buffer the negative effects of AI-related anxiety and job insecurity (Peterson, 2021), enabling employees to interpret technological disruption more positively. Mediating factors such as perceived organisational support and digital self-efficacy (Newman et al., 2014) further strengthen this relationship, while leadership moderates it. Despite promising findings, AI-specific empirical studies are limited. The review identifies key gaps and offers future directions for research and organisational practice.

Keywords: Psychological Capital, Organisational Commitment, Artificial Intelligence, Employee Well-Being, Digital Transformation, Workplace Psychology

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Introduction:

Artificial intelligence has become a defining feature of modern organisational functioning, reshaping decision-making, task execution, and workflow structures (Brynjolfsson & McAfee, 2017). AI enhances productivity and innovation but also introduces techno-stress, job insecurity, and ambiguity about future work roles (Bondarouk & Brewster, 2022). These changes can influence employees' psychological connections to their organisations. Psychological capital (PsyCap) has emerged as a key adaptive resource during such transitions. As a higher-order construct characterised by hope, resilience, efficacy, and optimism (Luthans et al., 2007), PsyCap enables employees to navigate uncertainty with confidence and emotional stability. Organisational commitment, defined

as a psychological attachment consisting of affective, continuance, and normative dimensions (Meyer & Allen, 1991) is particularly sensitive to disruptive technological change.

Thus, examining how PsyCap influences organisational commitment in AI-driven environments is essential for understanding employee well-being and retention during digital transformation. Further, as organisations increasingly integrate intelligent systems into core operations, understanding employees' psychological readiness becomes crucial. Enhanced PsyCap may not only buffer negative reactions to technology but also foster proactive engagement, adaptability, and long-term loyalty, making it a vital construct in contemporary organisational research.

Psychological Capital:

Psychological capital refers to a set of positive psychological resources that are state-like and can be developed (Luthans et al., 2015). Each dimension plays a specific role during AI-induced change:

- Hope helps employees generate pathways to new work demands.
- Self-efficacy supports mastery of AI-related tasks.
- Resilience enables recovery from technological challenges (Kim et al., 2022).
- Optimism fosters positive expectations regarding AI's role in future work.

PsyCap has been linked with adaptability, performance, and well-being (Avey et al., 2011), making it a strong psychological buffer in fast-changing AI workplaces.

In addition, high levels of PsyCap can promote psychological safety, enabling employees to experiment with new technologies without fear of failure. Employees with strong PsyCap are more likely to embrace continuous learning, an essential requirement in AI-enhanced environments. Furthermore, PsyCap helps reduce emotional exhaustion and fosters constructive coping, which supports smoother behavioural and cognitive adjustment during digital transformation. As organisations undergo rapid technological shifts, cultivating PsyCap becomes a strategic approach to enhancing employee motivation, sustaining commitment, and promoting long-term organisational effectiveness.

Organisational Commitment:

Organisational commitment includes emotional attachment (affective), perceived costs of leaving (continuance), and moral obligation (normative) (Meyer & Allen, 1991). AI may affect these dimensions differently. For example, automation may reduce affective commitment if employees feel devalued, whereas reskilling investments may strengthen normative or affective commitment (Peterson, 2021).

PsyCap is particularly relevant here because individuals with higher positive psychological resources tend to maintain stronger emotional stability and attachment during organisational change (Newman et al., 2014).

In AI-driven workplaces, employees with strong PsyCap may perceive technological advancements as opportunities rather than threats, enabling them to remain committed even amid role transformations. They are more likely to interpret organisational support initiatives—such as training, communication, and skill enhancement—as signals of care, thereby increasing affective and normative commitment. Additionally, high PsyCap helps reduce uncertainty and perceived risks, which can stabilise continuance commitment by enhancing

confidence in long-term growth within the organisation. Thus, PsyCap acts as a psychological anchor during technological disruption.

AI-Driven Work Environments:

AI-driven environments include automation, machine learning, predictive analytics, and algorithmic decision-making (Qureshi et al., 2023). These changes require adaptability, digital skills, and continuous learning. However, they may also increase techno-anxiety and job insecurity, influencing commitment levels (Bondarouk & Brewster, 2022).

Employees with high PsyCap often interpret technological change as a challenge rather than a threat (Kim et al., 2022), allowing them to maintain stronger organisational bonds.

Furthermore, AI integration alters job structures, collaboration patterns, and performance expectations, making psychological readiness crucial for sustained engagement. Employees with strong PsyCap are more likely to trust organisational decisions, adjust to data-driven systems, and stay motivated during transformation. They tend to exhibit proactive learning behaviours, which help them navigate evolving job demands confidently. In contrast, employees with low PsyCap may struggle with ambiguity, amplifying stress and reducing commitment. Thus, AI-driven environments highlight the importance of cultivating positive psychological resources to support resilience, adaptability, and long-term organisational alignment.

Relationship Between PsyCap and Organisational Commitment in AI Contexts:

Research shows a strong connection between psychological capital (PsyCap) and organisational commitment. Studies, including meta-analyses, consistently report that employees with higher PsyCap tend to hold more positive attitudes toward their jobs and feel more committed to their organisations (Avey et al., 2011). In fast-changing, AI-driven workplaces, this link becomes even more important.

Key Evidence:

- PsyCap strengthens effective commitment because it helps employees stay emotionally balanced during change (Newman et al., 2014).
- High resilience and self-efficacy reduce the stress that comes from working with or learning new AI systems (Kim et al., 2022).
- Optimistic employees are less likely to view automation as a threat and more likely to see it as an opportunity (Peterson, 2021).
- Hope encourages persistence and motivation, which are especially helpful when employees must upskill to meet new AI-related demands (Luthans et al., 2007).

Overall, PsyCap works as a powerful psychological resource that helps employees remain committed, even when AI introduces uncertainty and major changes in their work environment.

Mediators and Moderators:

Mediators-

- Perceived organisational support (POS) strengthens the PsyCap–commitment pathway (Newman et al., 2014).

- Digital self-efficacy grows with higher PsyCap, improving engagement with AI (Qureshi et al., 2023).
- Learning orientation is enhanced by PsyCap and improves adaptation to AI.

Moderators:

Leadership style: Transformational and empowering leadership amplify the positive effects of PsyCap (Avey et al., 2011).

- AI exposure level: High-AI environments make PsyCap even more essential.
- Organisational culture: Supportive cultures strengthen the PsyCap–commitment relationship.

Critical Analysis:

Research consistently shows that PsyCap has a strong and positive link with organisational commitment (Newman et al., 2014). Employees who feel hopeful, confident, resilient, and optimistic generally stay more connected to their organisation, even during times of change. However, the existing literature still has important gaps.

Many studies examine digital transformation in general, rather than focusing specifically on AI-driven disruption (Bondarouk & Brewster, 2022). As a result, unique challenges created by AI—such as algorithmic stress, fear of automation, or over-reliance on data systems—are not well understood. Another limitation is that most research uses self-report questionnaires, which may introduce bias because participants assess themselves and their commitment at the same time.

Additionally, much of the available work is cross-sectional, capturing only a single moment instead of tracking how PsyCap and commitment change over time during AI adoption. Cultural factors are also rarely explored, even though countries and organisations differ widely in risk tolerance, power distance, and attitudes toward technology.

Despite these limitations, existing findings consistently highlight that PsyCap plays a crucial role in helping employees stay committed during technological transitions. This suggests that developing PsyCap may be an effective strategy for organisations navigating AI-based change.

Implications for Practice:

To maintain strong organisational commitment during AI-related changes, organisations need to actively support employees throughout the transition. One effective approach is to introduce PsyCap development programs (Luthans et al., 2015), which help employees build hope, confidence, resilience, and optimism. Clear and transparent communication about how AI will be used also reduces fear and uncertainty (Peterson, 2021).

Supportive and transformational leaders play a key role by encouraging employees, addressing concerns, and modelling a positive attitude toward technological change. Creating a learning-focused culture makes employees feel safe to experiment, ask questions, and grow. Additionally, offering structured reskilling and training opportunities ensures that employees feel capable of meeting new AI-related demands.

Together, these practices help employees feel valued, supported, and psychologically ready for AI integration, which strengthens their commitment to the organisation.

Future Research Directions: Future work should -

- Focus on AI-specific psychological constructs, such as automation anxiety
- Employ longitudinal designs to track PsyCap during AI rollout
- Test multi-level models considering team-level PsyCap and leadership
- Explore cross-cultural differences in AI acceptance and PsyCap
- Develop validated AI-exposure and AI-stress scales

Conclusion:

Psychological capital plays an essential role in helping employees remain committed to their organisations during AI-driven changes. As workplaces adopt more AI tools and automated processes, employees often face uncertainty and shifting job expectations. Developing strong PsyCap through hope, optimism, resilience, and self-efficacy can help them cope with these challenges more confidently and maintain a positive connection with their organisation.

Although research still has gaps, especially in understanding AI-specific experiences, existing findings consistently show that PsyCap strongly supports employee well-being, adaptability, and long-term loyalty. This makes PsyCap a valuable resource for organisations aiming to sustain commitment during ongoing technological transformation.

Looking ahead, organisations that proactively invest in enhancing employees' PsyCap may find it easier to navigate rapid technological disruptions. Strengthening PsyCap not only empowers individuals to embrace change but also creates a more stable, motivated, and future-ready workforce. As AI continues to reshape job roles, nurturing PsyCap will remain a strategic factor in maintaining organisational cohesion and reducing turnover intentions.

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ARTIFICIAL INTELLIGENCE IN PSYCHOLOGY: TRANSFORMING ASSESSMENT, TREATMENT AND RESEARCH

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Abstract:

Artificial Intelligence (AI) is rapidly transforming various fields, including psychology. The integration of Artificial Intelligence (AI) in psychology presents transformative opportunities to enhance research, diagnostics, therapeutic interventions, and personalized mental health care. Artificial Intelligence (AI) in psychology is a rapidly developing discipline that explores how AI tools and technologies can improve psychological research, assessment, and therapeutic practices. This study critically reviews previous research conducted, emphasizing the development of AI applications within the psychological domain. A qualitative research approach was adopted, relying on secondary data sources, including scholarly articles, books, and expert insights. The findings reveal that AI has significantly advanced mental health diagnostics, facilitated the creation of therapeutic chatbots, and enabled predictive modeling of human behavior. Overall, the study underscores AI's vital role in assisting mental health professionals and promoting more personalized psychological care.

Keywords: *Artificial Intelligence, transformative opportunities, enhances research, diagnostics, therapeutic interventions, personalized mental health care..*

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Introduction:

Artificial Intelligence (AI) is reshaping numerous fields, and psychology is no exception. The integration of Artificial Intelligence (AI) in psychology marks a significant advancement in understanding and addressing mental health issues. This study tries to explore the advantages of integrating AI into psychology, highlighting its potential to enhance research, improve diagnostic accuracy, support therapeutic interventions, and facilitate personalized mental health care. AI's ability to process vast amounts of data and identify patterns offers unprecedented insights into human behavior and mental processes. AI technologies, such as machine learning and natural language processing, offer novel methods for psychologists to analyze large datasets, identifying psychological patterns, and improving treatment outcomes. As AI technologies advance, they provide innovative tools that enhance the understanding of human behavior and mental processes. Psychology has always been an empirical, data-driven endeavor, yet the scale and complexity of human behavior have often outstripped traditional methods. Artificial intelligence (AI) offers computational tools that can process vast, multimodal datasets and produce actionable insights more quickly than conventional approaches. From machine learning models that detect subtle patterns in speech and movement to natural language processing systems that analyze

sentiment and cognition, AI promises to enhance every level of psychological work: screening, diagnosis, intervention, monitoring, and research. By adopting AI, psychologists can develop more effective interventions and improve patient outcomes.

The integration of artificial intelligence (AI) into psychology is transforming research, clinical practice, and public mental health interventions. Key benefits include enhanced assessment precision through digital phenotyping and predictive analytics; improved accessibility via telehealth, chatbots, and automated triage; personalized treatment through adaptive algorithms and data-driven therapy planning; accelerated research via large-scale data analysis and reproducible computational methods; and operational efficiencies that free clinicians to focus on complex human tasks. The paper also addresses methodological considerations, ethical constraints, and practical challenges such as data quality, bias, transparency, and clinician–patient relationships and proposes strategies to mitigate risks while maximizing benefits. Finally, it outlines future directions for responsible AI deployment that preserves human dignity, improves clinical outcomes, and advances psychological science.

AI in Psychological Research:

Enhancing Data Analysis - AI's ability to analyze large volumes of data quickly and accurately is transforming psychological research. Traditional research methods which often involve time-consuming data collection and analysis can be significantly streamlined using AI. AI can automate these processes, allowing researchers to focus on interpreting results and drawing meaningful conclusions. Machine learning algorithms can identify patterns and correlations in complex datasets, providing deeper insights into human behavior and psychological phenomena that were previously difficult to detect.

Large-Scale Data Analysis-AI can analyze data from diverse sources, such as social media, wearable devices, and clinical records, to identify trends and patterns that would be challenging to detect with conventional methods. This capability allows researchers to explore new dimensions of human behavior and mental health.

Identifying Behavioral Patterns - AI technologies can analyze data from various sources, such as social media, wearable devices, and online interactions, to identify behavioral patterns. These patterns can provide valuable insights into mental health trends and the factors influencing psychological well-being. By understanding these patterns, researchers can develop more effective interventions and preventative measures.

Accelerating Hypothesis Testing- AI enables rapid hypothesis testing by simulating various scenarios and outcomes. Researchers can run multiple simulations to test different hypotheses, thereby speeding up the research process. This capability is particularly valuable in experimental psychology, where understanding complex interactions is crucial.

AI in Diagnostics:

Improving Diagnostic Accuracy-AI has the potential to enhance diagnostic accuracy by providing objective analyses of patient data. Machine learning algorithms can analyze patient data, including speech patterns, facial expressions, and physiological responses to identify early signs of mental health disorders.

Early Detection of Disorders- One of the most immediate advantages of AI in psychology is improved assessment accuracy and the potential for earlier detection of mental health issues. AI systems can be trained to recognize subtle indicators of disorders such as depression, anxiety, or schizophrenia. Early detection allows for timely intervention, which is critical for effective treatment and improved patient outcomes. This can lead to earlier and more accurate diagnoses, enabling timely intervention and treatment.

Reducing Human Bias-Human bias can affect diagnostic outcomes leading to disparities in treatment in psychology. AI systems, when designed properly and implemented correctly, can reduce this bias by providing objective analyses based on data rather than subjective judgment. This objectivity promotes equitable treatment and better outcomes across diverse populations.

AI in Therapeutic Interventions:

Supporting Therapy- AI can support therapeutic interventions by providing tools for monitoring patient progress and adapting treatment plans. For example, AI-powered chatbots can offer support outside of therapy sessions, providing patients with guidance and resources. These tools can also collect data on patient interactions, helping therapists tailor their approaches to individual needs. AI can assist therapists by automating routine tasks, such as scheduling and administrative duties, allowing them to focus more on patient care. Additionally, AI can provide insights into patient progress, helping therapists to make data-informed decisions about treatment plans.

Enhancing Cognitive Behavioral Therapy (CBT)-AI can enhance cognitive behavioral therapy (CBT) by providing personalized feedback and resources. AI-driven platforms can analyze patient interactions and suggest specific CBT principles tailored to individual needs. This personalized approach can improve therapy outcomes and patient engagement. AI can augment cognitive behavioral therapy by offering personalized feedback and resources.

AI-Powered Chatbots-AI chatbots can provide support outside of traditional therapy sessions, offering guidance and resources to patients. These chatbots can engage in conversations with patients, monitor progress, and collect data that therapists can use to adjust treatment plans.

AI in Personalized Mental Health Care:

Tailoring Treatment Plans-Personalized mental health care is a growing focus in psychology, and AI plays a crucial role in its development. By analyzing patient data, AI systems can identify individual needs and preferences, allowing for the creation of customized treatment plans. This personalized approach can enhance the effectiveness of interventions and improved patient satisfaction.

Precision Medicine in Mental Health-AI can help identify which treatments are most likely to be effective for specific patients based on their unique characteristics and history. This precision approach increases the likelihood of successful outcomes and patient satisfaction.

Expanding Access to Care-AI technologies can facilitate access to mental health care by providing remote support and resources. Teletherapy platforms, powered by AI, allow patients to receive care from anywhere, removing geographical and logistical barriers. This increased accessibility is particularly beneficial for underserved populations, providing them with access to necessary mental health resources.

Ethical Considerations:

Ensuring Privacy and Security-The integration of AI in psychology raises ethical considerations, particularly regarding privacy and data security. It is crucial to ensure that patient data is protected and used responsibly. Therefore, it is essential to establishing robust security measures and clear data usage policies are essential to protect patient information and maintain trust in AI-powered psychological services.

Addressing Algorithmic Bias- Algorithmic bias is a critical concern, as AI systems can inadvertently perpetuate biases present in the data they are trained on. It is important to address algorithmic bias to ensure that AI technologies provide fair and equitable treatment. This requires continuous evaluation and refinement of AI models to reduce potential biases.

Literature Review:

Diagnosis, assessment & monitoring using AI

In a survey Cruz-Gonzalez P. et al. (2025) noted varying diagnostic accuracy across disorders and frequent lack of external validation using AI applications across diagnosis (e.g., automated screening using language/voice/actigraphy), continuous monitoring (wearables, passive sensing) and interventions. Based on the research it was suggested that AI tools can augment screening and continuous monitoring but require external validation, explain ability and integration with clinical workflows.

Cho E. et al. (2023) used demographic, health and actigraphy data to predict behavioral and psychological symptoms of dementia; reported encouraging predictive performance with external validation sample.

Therapeutic effectiveness & generative AI applications:

Zhong W. et al. (2024). Studies show meta-analytic evidence that AI chatbots yield small-to-moderate reductions in depressive and anxiety symptoms in adults across trials; heterogeneity remains.

Chen D. et al. (2024) examines applications of generative models (text/image/voice) for therapy content creation, role-play simulations, and therapeutic assistant tools; flags hallucination risks and need for guardrails. In their research, they found that generative AI offers creative tools for clinicians (e.g., role-play scripts, psychoeducation) but needs human oversight to avoid harmful outputs.

Chatbots and conversational agents:

Vaidyam AN, Wisniewski H, Halamka JD, Kashavan MS, Torous JB(2019) reviewed early evidence for conversational agents used in screening, psychoeducation and brief interventions; identified promising engagement and acceptability but large heterogeneity in methods and outcome measures, and concerns about crisis handling and safety. They found chatbots can expand access and provide scalable psychoeducation/intervention, but need robust safety protocols and clearer efficacy trials.

Abd-Alrazaq AA et al. (2020) reported weak-to-moderate evidence that chatbots can reduce symptoms (depression, stress) in some contexts; they also highlighted variability in study quality and short follow-up windows. Haque MDR et al. (2023) describes technical architectures, therapeutic approaches used (CBT, ACT-like modules), and user-experience considerations and emphasizes on mobile delivery and retention challenges.

Ethics, safety, and workforce implications:

Bankins S. (2023) frames AI ethics in the workplace and health contexts, arguing that ethical principles must include human oversight, fairness, and impacts on meaningful clinician work and ethical frameworks should inform AI deployment in psychology to protect patient autonomy and clinician judgment.

Ghosh M. (2025) and Gore S. (2025) both highlight the harms: bias, de-skilling of clinicians, data privacy breaches, over-reliance on opaque models, and the potential for misleading outputs (hallucinations). They recommend transparent models, consent processes, and crisis-management pathways. Therefore, suggested that regulation, standards, and clinician training are essential components of safe AI integration.

Canadian Psychological Association (CPA) whitepaper (2024). also reviews opportunities and risks, and urges human oversight, data protection, and competency standards for psychologists using AI tools.

Findings and suggestions :

The study found that Artificial Intelligence (AI) has great potential to improve psychological practice. AI tools like chatbots and machine learning models can help in early detection of mental health problems and make psychological services more accessible. Studies have shown small to moderate positive effects of these tools in areas such as mental health screening, progress monitoring, and providing simple therapy support. AI-based therapies can support human therapists, especially in places where mental health professionals are few.

Generative AI provides new opportunities for clinicians by helping to create role-play exercises, educational materials, and therapy plans. However, these tools still need human supervision to avoid mistakes or harm. Predictive AI models can also help in identifying people at risk and in providing early support, for example, for patients with dementia. Based on the findings, the study suggests conducting more long-term studies to check the effectiveness and safety of AI in psychology.

Future research should also include cross-cultural studies, across India. There is a need for studies that show how AI can work together with human therapists in real settings. More focus should be given to transparency, data protection, and ethical use of AI. Psychologists should receive training and follow professional guidelines to ensure AI is used carefully and ethically in mental health care.

Challenges and Considerations:

At the same time, some limitations were found. Many studies use different methods, short testing periods, and small samples. There is also a lack of external validation and concerns about data privacy and model transparency. Some AI systems work like “black boxes,” where it is unclear how they reach their results. Ethical issues such as bias, accuracy, and patient safety are also important challenges. Overall, AI can be a helpful tool to support diagnosis, continuous monitoring, and personalized psychological care. However, it should not replace human therapists. Professional organizations are already making guidelines to help psychologists use AI safely and responsibly.

Conclusion:

The integration of AI in psychology offers numerous advantages, including enhanced research capabilities, improved diagnostic accuracy, support for therapeutic interventions, and personalized mental health care. As AI

technologies continue to evolve, they hold the promise of transforming psychological practices and making mental health care more accessible and effective. However, it is crucial to address ethical considerations and ensure that AI is used responsibly to maximize its benefits. By embracing AI, the field of psychology can advance its understanding of the human mind and improve the well-being of individuals worldwide.

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EFFECTIVENESS OF CONNECTIVISM LEARNING APPROACHES IN DEVELOPING 21ST CENTURY PEDAGOGICAL COMPETENCIES AMONG THE PRE-SERVICE TEACHERS

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Abstract:

Connectivism is a learning theory that focuses on the modern technology that creates the social connection in the field of education. It suggests the knowledge is shared across the networks. The teaching and learning occur through the connections with different sources. It helps to promote the learning with the help of digital tools to boost the educational experience. The application of connectivism in the training of pre-service teachers teaches this theory that knowledge is distributed among the networks and emphasizes social connection technology and collaborative learning.

It blends connectivist principles for the pre-service teachers, it enhances the critical thinking teamwork and promotes the digital Awareness of competency among the upcoming future educators.

This study benefits for the pre-service teachers from Bachelor of Education including the personalized learning experience and recent information the study investigates the effectiveness of connectivism on the professional planning of 100 pre-service teachers for the future teaching practices.

Keywords: Connectivism learning theory, Technology, pre service, competencies, collaborative, networks.

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Introduction:

As the 21st century is the century of the digital Era we all have connected to each other through this. even in the education field increasing integration of virtual learning gain at the large scale. The pre-service teachers or the teacher training must accept the change.

This research aims to describe how effectively connectivism practices and encourages pedagogical competencies for pre - service teachers.

Connectivism theory proposed by George Siemens (2005) and Stephen Downes, it is a well recognised learning theory.

Massive Open Online Courses (MOOCs) are a clear example of connectivism in action. They encourage learner autonomy, peer interaction, and open access to resources, which are the key principles of the theory. (Christopher Pappas ,2025)

Literature review:

Connectivism theory proposed by George Siemens (2005) and Stephen Downes, it is a well recognised learning theory. As it is a bridge between traditional and digital technology.

Connectivism represents a significant shift in understanding and facilitating learning in the digital age. Christopher Pappas ,2025)

It's not just another academic buzzword, but a game-changer in how we understand and facilitate learning in the 21st century. (Noah Young, 2024)

The study found that Connectivism was effective in promoting collaborative learning and in helping learners develop their social and networking skills (Dron and Anderson,2014)

Aim & Objectives of this study:

The aim of the study is to explore the pre-service teachers to be technological enhanced teaching strategies during the 21st century.

Objectives:

- 1 To encourage pre-service teachers to use technology based in classroom teaching.
- 2 To understand the skills, attitude and plans for the future teaching learning.
- 3 To investigate the impact of technology on teacher student or pre service teacher
4. To analyse the positive learning outcomes in pre service teachers.

Hypothesis of the study:

H1 Interactive and Technology supported connectivist learning activities profoundly increase pre-service teachers' interest in educational learning theory.

H2 connectivism creates the real classroom setting, positively to guide their attitude towards adopting the theory.

According to Crabtree and Milter 8 board categories were identified as relevant.

1. Use of Technology for productivity purposes.
2. Use of Technology for pedagogy purpose
3. planning for students' use of technology.
4. Using technology for teachers' presentation of information.
5. Facilitate and inspire student learning and creativity.
6. Design and develop using Technology
7. Digital age learning experiences an assessment
8. Using technology to engage in professional growth and leadership.

(contemporary issues in technology and teacher education CITE journal)

Meaning of connectivism:

Connectivism is social learning that is networked. Stephen Downes described it as, "... the thesis that knowledge is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks" (Downes, 2007). (Betsy Duke,Ginger Harper)

Lecture rooms are no longer characterised by an educator with a blackboard and chalk, students with textbook, notepad and pen; they are now platforms where the educator is no longer the sole source of knowledge. The students get to contribute and there is the use of technological tools and applications during lesson delivery by both educators and students. There are new teaching and learning theories that facilitate student-centred teaching and learning, such as connectivism and constructivist theories.

The 21C further demands that students be oriented towards the acquisition of higher order thinking and innovation skills referred to as the 4Cs:

- 1) Creativity,
- 2) Critical 2 thinking
- 3) Communication
- 4) Collaboration (Partnership for 21st Century Learning, 2016).

(Nyarai Tunjera)

Technology plays a transformative role, creating learning networks (e.g., social media, online forums, digital tools). Pedagogy Teacher-centric, where the instructor directs learning.

Connectivism learning is not simply the acquisition of knowledge or information, but rather the creation of connections between ideas and experience as connections are facilitated by technology and social networks which allows learners to access and share information across a vast network of resources. (Md. Afroz Alam, 2023)

Research methodology.

The study is adopted by using a mixed method.

Research Design which involves qualitative and quantitative data. A Structured questionnaire is used 100 Pre Service teachers from the Bachelor of Education College in Maharashtra, Pune. The qualitative tool consist of 5pointLikert scale items measuring the digital competency networking behaviour and collaboration. It will be observed with semi structure interview where conducted with 100 participant for the qualitative inside the data will be analysing why using a descriptive statistics and thematic analysis.

Sample:

A sample of 100 pre-service teachers was selected using simple random sampling.

Instrument

A self-constructed questionnaire with three components:

Awareness of Connectivism

Use of connectivist tools (frequency-based)

Perceived effectiveness (5-point Likert scale)

Data Classification for Statistical Analysis:

Participants were categorized into:

High digital tool users (n = 70)

Low digital tool users (n = 30)

Table 1

Awareness of Connectivism Among Pre-Service Teachers (N = 100)

Sr. no.	Category	Count
1	Aware of Connectivism	72
2	Not Aware	28

Note. Awareness was self-reported by participants.

Table2

Sr. no.	Digital tools	Percentage Usage
1	Google class room, moodle	85%
2	You tube educational channels	92%
3	Google Docs	78%
4	Social Learning networks	88%

Means and Standard Deviations of Effectiveness Scores

Group n	Mean	SD
High Users	70	40.36 0.27
Low Users	30	3.99 038

Major findings:

1. Pre-service teachers strongly agree towards using digital platforms for collaborative learning.
2. Connectivism helps to improve the digital literacy and communication skills among the pre service teachers and the school students.
3. Learners develop the direct self learning habits and Awareness of the modern digital technology.
4. There are some challenges which include the limited institutional support in modern technology, networks and computer systems.

Conclusion and Recommendation:

Connectivism provides a meaningful Framework for the future teachers or preservice teachers in their teaching learning process to have the importance of modern technology in the educational field. It encourages learning through interaction, diversity, self organisation, self learning and motivation. However we all are toward the of

21st century so in educational field is modernized and Technology based for Teacher education institution in India should be integrated with this connectivism approach into the digital networking, collaborative projects ,and reflective work for the research makes more collaborative & long term effect of connectivity for the upcoming pre service teachers and to practice this in the classroom innovation.

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THE IMPACT OF PSYCHOLOGICAL WELL-BEING ON ATHLETE PERFORMANCE: ASSESSING POSITIVE AND NEGATIVE OUTCOMES

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Abstract:

This research explores the impact of psychological well-being on athletes' performance, highlighting the critical role of mental health in optimizing competitive outcomes. The study investigates how overall psychological well-being influences motivation, confidence, concentration, and resilience, which are essential for sustaining peak performance. Key psychological factors, including self-confidence, emotional regulation, focus, motivation, and mental toughness, are identified as significant contributors to athletic success, enhancing adaptive responses under high-pressure conditions. Conversely, psychological distress such as anxiety, depression, burnout, and chronic stress is shown to impair cognitive, emotional, and physical functioning, reducing performance quality and increasing the risk of withdrawal from sports. The study further examines the relationship between positive psychological states, including optimism, flow, and emotional stability, and performance consistency, demonstrating that these states foster skill development, recovery from setbacks, and improved team cohesion. Additionally, the effectiveness of psychological interventions is evaluated, encompassing cognitive-behavioural strategies, mindfulness practices, imagery, goal-setting, and counselling, which collectively enhance mental well-being, resilience, and competitive performance. Utilizing a theoretical and secondary data approach, the research synthesizes existing literature to provide a comprehensive understanding of how mental health influences athletic outcomes. The findings underscore the importance of integrating psychological support into training programs, emphasizing a holistic approach to athlete development that combines physical, cognitive, and emotional preparation. This research provides valuable insights for coaches, sports psychologists, and organizations aiming to optimize performance while promoting long-term mental health and well-being in athletes.

Keywords: *Psychological Well-Being, Athlete Performance*

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Research Background:

Psychological well-being has become a central concern in contemporary sports science, as mental health is increasingly recognized as a critical factor influencing athletic performance. While physical conditioning, skill acquisition, and tactical preparation have historically dominated athlete development, emerging evidence shows that psychological factors can determine how effectively athletes perform under pressure (Weinberg & Gould,

2019). Athletes in modern competitive environments face high expectations, intense training demands, and constant evaluation, making psychological well-being essential for optimal functioning.

Positive psychological states, including self-confidence, intrinsic motivation, emotional regulation, and resilience, have been linked to enhanced performance outcomes. These attributes enable athletes to maintain focus, cope with stressors, and sustain high levels of consistency during competition (Jones & Hardy, 1990). Athletes with strong psychological well-being often demonstrate greater adaptability, effective decision-making, and sustained commitment to training goals. Moreover, positive mental states contribute to quicker recovery from failure and improved long-term performance trajectories (Gould & Maynard, 2009).

Conversely, poor psychological well-being—manifesting as anxiety, depression, burnout, or chronic stress—has detrimental effects on athletic performance. Mental health challenges may impair concentration, disrupt motor coordination, and weaken motivation, ultimately compromising competitive outcomes (Smith, 1986). Research indicates that athletes experiencing psychological distress are more prone to performance slumps, injury risk, and withdrawal from sport (Rice et al., 2016). Such evidence underscores the need to examine how psychological difficulties hinder performance and well-being in athletic populations.

Given the increasing recognition of mental health in sport, psychological interventions have gained attention as tools for improving athlete performance. Techniques such as cognitive-behavioral training, mindfulness practices, goal-setting, and psychological counseling have been shown to enhance mental resilience and performance stability (Gardner & Moore, 2007). However, further investigation is required to understand which interventions are most effective, how they influence both well-being and competitive outcomes, and how they can be incorporated into training programs.

Against this background, the present study titled “**The Impact of Psychological Well-Being on Athlete Performance: Assessing Positive and Negative Outcomes**” aims to explore the interplay between psychological well-being and performance. By identifying key psychological predictors, examining the effects of psychological distress, and evaluating intervention strategies, this research seeks to contribute to a more holistic understanding of athlete development and performance enhancement.

Objectives of the Research:

1. To investigate how overall psychological well-being influences athletes’ performance levels.
2. To identify specific psychological factors that contribute positively to athletic performance.
3. To determine how psychological distress or poor mental well-being affects athletes’ competitive outcomes.
4. To examine the relationship between positive psychological states and consistency or improvement in sports performance.
5. To evaluate the effectiveness of psychological support or interventions in enhancing athletes’ mental well-being and performance.

Significance of the Study:

- The study emphasizes the importance of psychological well-being in athletic performance.

- It aims to understand how mental and emotional stability affects athletes' success in high-pressure environments.
- Identifying key psychological factors such as confidence, motivation, emotional regulation, and resilience is crucial for coaches and psychologists.
- Insights gained can improve coaching practices and performance enhancement programs.
- The research addresses the negative impact of psychological distress (e.g., stress, burnout, anxiety, and depression) on athletes' concentration and decision-making.
- It advocates for sports organizations to support mental health and early intervention measures.
- The relationship between positive psychological states and performance consistency is explored, noting its importance for achieving athletic excellence.
- Evaluating psychological interventions can lead to evidence-based programs to enhance mental well-being and performance.
- Proposed interventions include mental skills training, counselling, mindfulness, and emotional support to optimize athlete care and performance.
- Overall, the study promotes a holistic approach by integrating psychological well-being into athlete development and performance systems.

Research Methodology:

This study explores the impact of psychological well-being on athletic performance using a theoretical and secondary data approach. It examines how overall mental health, positive psychological states, and key factors like confidence, motivation, emotional regulation, and resilience influence athletes' performance and consistency. The research analyses the negative effects of psychological distress, including stress, burnout, anxiety, and depression, on concentration and decision-making. Additionally, it evaluates the effectiveness of psychological interventions such as mental skills training, counselling, and mindfulness. By synthesizing existing literature and theoretical frameworks, the study highlights the importance of integrating mental well-being into athlete development and performance enhancement programs.

Interpretation and Results:

Objective No.1: To investigate how overall psychological well-being influences athletes' performance levels.

Psychological well-being is crucial for athletic performance as it influences emotional stability, cognitive processing, and physical readiness. Athletes with strong psychological well-being exhibit greater motivation, confidence, and concentration, thereby enhancing their competitive performance (Ryff, 2014). This well-being involves several dimensions including emotional balance, purpose in life, environmental mastery, and positive relationships, which help athletes manage competitive stressors like pressure and performance uncertainty (Weinberg & Gould, 2019).

Moreover, psychological well-being aids in optimal arousal regulation, keeping athletes within their ideal performance zone. The multidimensional anxiety theory suggests that emotionally stable athletes perform better cognitively, enhancing areas like decision-making and situational awareness (Hanton et al., 2008).

Physiologically, it promotes healthier hormonal responses, lowers stress hormones such as cortisol, and enhances neurochemical balance, which positively impacts energy, endurance, and muscle coordination (Kellmann, 2010). Additionally, interpersonal dynamics in sports are influenced by psychological well-being, leading to improved communication, coach–athlete relationships, and teamwork (Jones & Hardy, 1990). Overall, mental health is a foundational element of athletic success, enabling athletes to be more resilient and consistent, thus maintaining peak performance over time.

Objective No.2: To identify specific psychological factors that contribute positively to athletic performance.

Several psychological factors significantly influence athletic performance, including self-confidence, motivation, emotional regulation, resilience, focus, and mental toughness (Fletcher & Sarkar, 2012; Jones et al., 2007). Self-confidence is a strong predictor of success, enhancing athletes' belief in their skills under pressure, which promotes better risk-taking and adaptive responses (Bandura, 1997). Motivation, both intrinsic and extrinsic, is crucial as intrinsic motivation fosters enjoyment and long-term commitment, while extrinsic motivation drives goal achievement and competitive engagement (Deci & Ryan, 2000). Emotional regulation enables athletes to control their emotional states, maintaining concentration and cognitive efficiency during competitions (Gross, 2015). Resilience allows athletes to recover quickly from setbacks, supporting sustained performance over time (Fletcher & Sarkar, 2012). Focus and attentional control are vital for athletes to concentrate on relevant cues and avoid distractions, leading to improved accuracy and decision-making (Weinberg & Gould, 2019).

Objective No.3: To determine how psychological distress or poor mental well-being affects athletes' competitive outcomes.

Psychological distress, including anxiety, depression, burnout, and chronic stress, significantly detracts from athletes' cognitive, emotional, and physical functioning, ultimately harming their competitive performance (Rice et al., 2016; Smith, 1986). Anxiety disrupts concentration, motor coordination, and decision-making, impairing athletes' execution under pressure (Jones, 1995). Depression leads to decreased energy, motivation, and engagement in training, resulting in slower reaction times and diminished self-confidence (Rice et al., 2016). Burnout, stemming from chronic stress and excessive training, causes emotional exhaustion and can lead to lower participation in competitions and training (Smith, 1986).

Chronic stress raises cortisol levels, hampers recovery, affects sleep quality, and increases susceptibility to illness and injury, further reducing readiness for competition (Kellmann, 2010). Additionally, mental health issues can disrupt interpersonal relationships within sports teams, causing communication breakdowns that undermine trust and cohesion (Weinberg & Gould, 2019). Athletes often resort to maladaptive coping mechanisms like avoidance and substance misuse, which exacerbate these performance issues (Gould & Whitley, 2009).

Ultimately, poor psychological well-being can hinder both immediate performance and long-term athletic development, leading to a higher risk of athletes withdrawing from the sport (Rice et al., 2016). Understanding these factors is crucial for developing targeted early intervention and prevention programs to support athletes' mental health (Gardner & Moore, 2007).

Objective No.4: To examine the relationship between positive psychological states and consistency or improvement in sports performance.

Psychological interventions have gained prominence in sports due to their positive impact on mental well-being and athletic performance (Gardner & Moore, 2007). Cognitive-behavioral approaches empower athletes by helping them challenge negative thoughts, foster confidence, and devise effective coping strategies, which in turn enhance performance stability during competitions (Beck, 2011). Key positive psychological states such as confidence, optimism, emotional stability, flow, and enthusiasm are integral in facilitating consistent athletic performance (Fletcher & Sarkar, 2012; Csikszentmihalyi, 1990). Confidence encourages athletes to tackle challenges resiliently, minimizing breakdowns under pressure (Bandura, 1997). Optimism aids in developing robust coping strategies and positive outlooks on future performances, enabling athletes to view setbacks as transient obstacles, fostering perseverance and stabilizing performance (Carver et al., 2010). The flow experience leads to peak performance by promoting focused absorption in tasks (Csikszentmihalyi, 1990), while emotional stability helps maintain concentration and reduces anxiety-related performance dips (Gross, 2015). Positive psychological states also enhance training engagement and resilience, allowing athletes to recover more swiftly from setbacks and continuously progress in skill development (Fletcher & Sarkar, 2012). In team sports, these states promote better communication and unity, ultimately contributing to sustained performance improvements (Weinberg & Gould, 2019).

Objective No.5: To evaluate the effectiveness of psychological support or interventions in enhancing athletes' mental well-being and performance.

Psychological interventions play a crucial role in enhancing mental well-being and athletic performance. Cognitive-behavioural strategies enable athletes to challenge negative thoughts, build confidence, and develop coping mechanisms, thereby alleviating performance anxiety and fostering mental clarity (Beck, 2011). Mindfulness practices improve attention, emotional regulation, and stress management, helping athletes maintain focus and make better decisions under pressure, leading to more consistent performance in high-stress situations such as archery, gymnastics, and golf (Kabat-Zinn, 2005).

Additional techniques like imagery and visualization enhance performance by activating neural patterns linked to skill execution, resulting in heightened confidence and readiness for competition (Morris et al., 2005). Goal-setting interventions, particularly those that adhere to the SMART criteria (specific, measurable, achievable, relevant, time-bound), promote motivation and enhance training focus (Deci & Ryan, 2000).

Furthermore, psychological counselling offers emotional support and aids athletes in navigating stress, injury recovery, personal challenges, and performance dips, which fosters self-awareness and encourages positive coping strategies (Gardner & Moore, 2007). Research underscores that athletes receiving structured psychological support demonstrate enhanced performance, better emotional regulation, increased resilience, and a lower risk of burnout. Thus, assessing the effectiveness of these psychological interventions is vital for the integration of mental training into athletic development programs.

Implementations:

The findings of this research can be applied to enhance athletic performance by integrating psychological well-being strategies into training and coaching programs. Coaches and sports psychologists can use the insights to develop structured mental skills training that focuses on building self-confidence, emotional regulation, resilience, and focus, enabling athletes to perform optimally under pressure. Mindfulness practices, visualization techniques, and goal-setting interventions can be incorporated into daily routines to improve concentration, reduce anxiety, and foster consistent performance. Sports organizations can implement early identification and intervention programs to address psychological distress, such as stress, burnout, and depression, ensuring timely support for athletes. Continuous monitoring of athletes' mental well-being alongside physical performance can guide personalized interventions and training adjustments. Overall, applying these strategies promotes a holistic approach to athlete development, enhancing not only competitive outcomes but also long-term mental health, motivation, and overall sports engagement.

Conclusions:

1. Overall psychological well-being is a critical determinant of athletic performance, influencing motivation, confidence, concentration, and resilience.
2. Key psychological factors such as self-confidence, emotional regulation, motivation, and focus significantly enhance athletes' performance and ability to cope with competitive pressures.
3. Psychological distress, including anxiety, depression, burnout, and chronic stress, negatively impacts cognitive, emotional, and physical functioning, leading to reduced performance and higher dropout risks.
4. Positive psychological states, including optimism, flow, and emotional stability, support consistent performance, facilitate skill development, and strengthen team dynamics.
5. Structured psychological interventions, such as cognitive-behavioural strategies, mindfulness, imagery, goal-setting, and counselling, effectively enhance mental well-being, resilience, and athletic outcomes, highlighting the importance of integrating mental training into sports programs.

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A COMPARATIVE STUDY OF ACHIEVEMENT MOTIVATION AMONG TRIATHLON ATHLETE AND NON-ATHLETES MALE

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Abstract:

Achievement motivation is the inner drive to succeed and excel in sports characterized by persistence in the face of challenges, a desire to master skills, and a focus on high-level performance. The main purpose of this study was to compare achievement motivation among triathlon athlete and non-athletes male. To obtain the data the investigators selected total 100 (N= 100) subjects;(N=50) inter college level triathlon athlete and (N=50) subjects non-athletes male from Pune University affiliated various colleges of in Nashik district. Deo-Mohan Achievement motivation (n-Ach) scale were used for this study; the age group of 18-25 years. The study was admitted to compare between the group. It was hypothesized that there would be significant differences achievement motivation among triathlon athlete and non-athletes male. To analyse the collected data t-test was employed. The finding of the study indicated that there was significant differences among the group as $t(0.01,98)=5.01$

Key words: Triathlon, Athlete, Non-Athletes, Achievement Motivation

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Introduction:

Achievement motivation is the inner drive to set challenging goals, strive for excellence, and find satisfaction in personal accomplishment and success, independent of external rewards. Developed by psychologists like David McClelland and John W. Atkinson, this concept explains the psychological basis for aspirations and accomplishments, highlighting the role of factors such as self-efficacy, personal beliefs, environmental influences, and the balance between the desire to succeed and the fear of failure.

Need for Achievement (n-Ach):

Individuals with a high need for achievement are intrinsically motivated to do things better, efficiently, and to a higher standard than others. They seek challenging roles, prefer clear, rapid feedback, and are driven by the internal satisfaction of achieving goals rather than material rewards.

Goal-Oriented Behavior:

High achievement motivation leads to behaviors like setting high standards, persisting in efforts, and continuing to work toward accomplishing difficult goals, even when faced with setbacks.

Intrinsic vs. Extrinsic Motivation:

Achievement motivation can be influenced by intrinsic factors (like the personal satisfaction of success) and extrinsic factors (like approval or rewards).

Atkinson's Theory:

Atkinson's theory proposes that achievement motivation is a combination of the desire to succeed (tendency to achieve success) and the desire to avoid failure (tendency to avoid failure). The interplay between these two motives influences an individual's approach to challenging situations.

Factors Influencing Achievement Motivation

Self-Efficacy:

A person's belief in their ability to succeed in a particular situation is a significant factor.

Environmental Factors:

The surrounding environment, including cultural influences, can shape the level of one's need for achievement.

Personal Beliefs:

Individual beliefs about effort and talent play a role in how people explain their successes and failures, which in turn influences future motivation.

Feedback:

A desire for quick and constructive feedback helps individuals with high achievement motivation improve their performance.

Objective:

1. To study the achievement motivation of triathlon athletes and non-athletes.
2. To compare the achievement motivation of triathlon athletes and non-athletes.

Hypothesis:

1. There will be significant differences achievement motivation among triathlon athlete and non-athletes male.

Variables:

I) Independent variables:

triathlon athlete male
non-athletes male

II) Dependant variable - Achievement motivation

SAMPLE- This test have administered of the total 100 (N= 100) subjects;(N=50) inter college leval triathlon athlete and (N=50) subjects non-athletes male from Pune University affiliated various colleges of in Nashik district. .The age group of 18-25 years.

TOOL :- Deo-Mohan Achievement motivation (n- Ach) scale were used for this study.

Data Analysis:

‘t’ on the basis of data collection the results were analyzed by calculating mean values, SD and ‘t’ ratio.

Result table:

table ‘t’ showing the significant differences among triathlon athlete and non-athletes male in terms of their achievement motivation.

No.	Class	N	Mean	SD	‘t’	Level of sig.
1	triathlon athlete	50	148.58	7.79	5.01	0.01
2	non-athletes	50	140.39	7.79		

Df= 98

Standard error of differences =1.102

In the above table triathlon athlete mean is 148.58 (SD=7.79) and non-athletes male mean is 140.39 (SD=7.79). The obtained ‘t’ value is 5.01 which is significance(0.01). This means that there is significant differences among triathlon athlete and non-athletes male in terms of their achievement motivation. Research indicates that athletes generally exhibit higher achievement motivation compared to non-athletes, driven by the inherent competitive nature of sports, which cultivates a strong desire to succeed, set goals, and demonstrate excellence. This higher motivation is linked to enhanced self-confidence, a greater willingness to take on challenges, and persistent effort toward mastering skills and achieving high standards in performance.

Conclusion:

Result shows that there is significant differences among triathlon athlete and non-athletes male in terms of their achievement motivation. It means triathlon athlete have high level of achievement motivation than non athletes male.

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WORKING WOMEN AND SPIRITUALITY: AN ANALYTICAL STUDY

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Abstract:

Women world is different and more complicated as compare to men. Its genesis is as old as the history of human society itself. It acknowledges the complexity of the "women's world" and its long history within human society, hinting at a potential exploration of how these factors intersect with spirituality and potentially impact women's lives, especially in the context of work. This could refer to the various roles women often juggle (work, family, social expectations), the societal pressures they face, and the unique challenges they encounter. The study intends to analyze how spirituality plays a role in the lives of working women. This suggests an exploration of how spiritual beliefs, practices, or a sense of connection to something larger than oneself might influence their experiences, coping mechanisms, and overall well-being.

Key words: *Organizational spirituality, gender roles, mindfulness, meditation, stress management, beliefs*

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Introduction:

In today's fast-paced, globalized world, women are increasingly taking on multifaceted roles, balancing professional careers with personal and family responsibilities. As they navigate the complexities of modern life, many working women are seeking ways to cultivate inner peace, purpose, and meaning. Spirituality, in its various forms, has emerged as a vital aspect of their lives, offering a sense of connection to something greater than themselves. This article explores the intersection of work and spirituality in the lives of working women, examining how spiritual practices and beliefs influence their professional experiences, personal growth, and overall well-being. By investigating the relationship between spirituality and work, this research aims to contribute to a deeper understanding of the ways in which working women integrate their spiritual values and practices into their daily lives.

The modern workplace is a complex and dynamic environment, where individuals navigate multiple roles, responsibilities, and expectations. For working women, the challenges of balancing professional and personal life are often compounded by societal pressures, cultural norms, and personal aspirations. As they strive to excel in their careers, build meaningful relationships, and contribute to their communities, many working women are seeking ways to cultivate a sense of purpose, direction, and fulfilment. Spirituality, in its various forms, has emerged as a vital aspect of their lives, offering a framework for understanding themselves, their place in the world, and their relationships with others.

Spirituality is a multifaceted concept that encompasses a range of experiences, practices, and beliefs. It can involve a connection to a higher power, a sense of transcendence, or a deepening awareness of oneself and the world. For working women, spirituality can serve as a source of strength, resilience, and inspiration, helping them navigate the demands and stresses of modern life. By exploring the intersection of work and spirituality, this research aims to shed light on the ways in which working women integrate their spiritual values, practices, and experiences into their daily lives.

The relationship between work and spirituality is complex and multifaceted. On one hand, the demands of the modern workplace can often conflict with spiritual values and practices, leading to feelings of disconnection and fragmentation. On the other hand, spirituality can provide a sense of purpose and meaning that can enhance job satisfaction, productivity, and overall well-being. By examining the experiences of working women, this research seeks to contribute to a deeper understanding of the ways in which spirituality can inform and transform the workplace, and how working women can cultivate spiritual practices and values that support their personal and professional growth.

This study is grounded in the recognition that working women's experiences are shaped by a complex interplay of factors, including cultural background, socioeconomic status, and personal circumstances. By exploring the diverse ways in which working women experience and express spirituality, this research aims to highlight the importance of spirituality in the lives of working women, and to identify strategies for promoting greater awareness, understanding, and support for spiritual diversity in the workplace. Ultimately, this research seeks to contribute to the creation of more inclusive, supportive, and meaningful work environments that recognize the importance of spirituality in the lives of working women.

Operational definitions:

Stress- Stress can be a physical, mental, or emotional response to pressures or challenges that exceed one's ability to cope. Essentially, stress arises when the demands placed on an individual surpass their perceived ability to handle them.

Spiritual Goals- A spiritual purpose is a guiding principle that transcends material desires and aims to connect individuals to something greater than themselves, often involving a sense of meaning, purpose, and connection to others and the universe. It's about discovering your inner self and using your unique gifts to contribute to the world in a meaningful way.

Women's gender roles- Women's gender roles refer to the societal expectations and norms about how women should behave, think, and express themselves within a particular culture. These roles are often shaped by cultural and historical contexts and can vary significantly across different societies and time periods. They encompass a wide range of behaviors, including those related to family, work, and social interactions.

Mindfulness for balanced life- Mindfulness, for a balanced life, is the practice of paying attention to the present moment without judgment, acknowledging thoughts, feelings, and sensations as they arise without getting carried away by them. It involves cultivating a non-reactive and non-evaluative awareness of both internal states

(thoughts, feelings) and external events. By focusing on the present, mindfulness helps reduce stress, improve focus, promote emotional regulation, and enhance overall well-being.

Objectives:

- To know how spirituality helps working women cope with the demands of work and life.
- To understand the impact of societal expectations and gender roles on women's spiritual experiences.
- To investigate how women's spirituality evolves as their religious, caste and economic background is different.
- To analyse the connection between spirituality and well-being among working women.

Hypothesis:

- Increased levels of workplace spirituality among working women are positively correlated with improved work-life balance and reduced stress, leading to better overall well-being
- Traditional religion is seen as restrictive, women may be more likely to embrace alternative spiritual practices like meditation that offer a sense of personal empowerment
- Women's engagement with religious rituals and practices (e.g., prayer, meditation, participation in religious gatherings) will vary based on their religious affiliation and the emphasis placed on these practices within their specific faith
- Higher levels of spirituality among working women are positively associated with greater well-being, including subjective well-being, mental health, and resilience to stress

Research methodology:

This study employs a qualitative case study approach to explore the experiences of working women and their spirituality. A case study design is chosen to gain an in-depth understanding of the complex and nuanced ways in which working women integrate spirituality into their daily lives. Five case studies did for thorough understanding of working women's spirituality and its impact on their life.

Case study No. 1 Savita a Z P teacher and her spiritual experience

Introduction:

Savita, a 44-year-old Zilla Parishad (ZP) teacher, faced a life-altering crisis when her husband passed away in an accident. This case study explores how spirituality helped Savita cope with her loss and find a new sense of purpose.

Savita was married to her husband for over 15 years and had two children together. Her husband was the primary breadwinner, and Savita's role was that of a homemaker and teacher. When her husband passed away suddenly, Savita's world was turned upside down. She was devastated by the loss and struggled to come to terms with the new reality.

The Role of Spirituality:

Savita had always been a spiritual person, but after her husband's passing, she turned to spirituality as a way to cope with her grief. She began to focus on her spiritual practices, such as meditation, prayer, and reading spiritual

texts. She found solace in the teachings of her spiritual tradition, which emphasized the importance of acceptance, forgiveness, and inner peace.

Spiritual Practices:

Savita's spiritual practices helped her in several ways:

1. **Meditation:** Savita found that meditation helped her calm her mind and reduce stress. She would often meditate during her lunch break or after school.
2. **Prayer:** Savita would pray regularly, seeking guidance and comfort from a higher power. She found that prayer helped her feel more connected to her husband and the universe.
3. **Reading spiritual texts:** Savita would read spiritual texts, such as the Bhagavad Gita to gain insight into the nature of reality and the human condition.

Findings:

Savita's spiritual practices had a profound impact on her life. She reported:

1. **Reduced stress and anxiety:** Savita's spiritual practices helped her manage her stress and anxiety levels, allowing her to cope better with her new reality.
2. **Increased sense of purpose:** Savita's spirituality gave her a new sense of purpose, helping her find meaning in her life despite the loss of her husband.
3. **Improved relationships:** Savita's spiritual practices helped her develop greater empathy and compassion, improving her relationships with her children, colleagues, and friends.

Case study No. 2 Vasudha experienced positive improvement in her official relation since her spiritual journey starts with her colleague before one years

Introduction:

Vasudha, a 31-year-old self-identified atheist (nastik), embarked on a spiritual journey with her colleague about a year ago. Despite her initial reservations, Vasudha experienced significant positive improvements in her official relationships.

Vasudha was known for her assertive and direct communication style, which sometimes led to conflicts with her colleagues. She had difficulty understanding others' perspectives and empathizing with their emotions.

The Spiritual Journey:

Vasudha's colleague introduced her to various spiritual practices, such as:

1. **Mindfulness meditation:** Vasudha began practicing mindfulness meditation to calm her mind and increase self-awareness.
2. **Self-reflection:** She started reflecting on her thoughts, emotions, and actions, which helped her identify areas for personal growth.
3. **Empathy and compassion:** Vasudha's colleague encouraged her to practice empathy and compassion towards others, which improved her relationships.

Findings:

After starting her spiritual journey, Vasudha noticed significant positive changes in her official relationships:

1. Improved communication: Vasudha became more effective in communicating with her colleagues, actively listening to their concerns and perspectives.
2. Increased empathy: She developed a greater understanding of others' emotions and needs, which helped her build stronger relationships.
3. Conflict resolution: Vasudha's newfound ability to remain calm and composed in challenging situations enabled her to resolve conflicts more effectively.

Case study No. 3 :

Spirituality helped Satvsheela to manage her 3 children's education and other economic challenges working as a Anganwadi Sevika

Satvsheela, a 54-year-old Anganwadi Sevika, faced numerous challenges in managing her children's education and economic responsibilities. Spirituality played a vital role in helping her navigate these difficulties. Satvsheela worked as an Anganwadi Sevika, providing essential services to her community. Despite her dedication, she struggled to make ends meet and ensure her three children's education. Her husband's limited income and health issues added to the family's financial burden.

Spirituality as a Coping Mechanism:

Satvsheela turned to spirituality as a way to cope with her challenges. She found solace in:

1. Prayer and meditation: Regular prayer and meditation helped Satvsheela find inner peace and calmness, enabling her to tackle her responsibilities with renewed energy.
2. Faith in a higher power: Her faith in a higher power gave her the strength to persevere, trusting that her efforts would be rewarded.
3. Community support: Satvsheela's spiritual community provided emotional support, guidance, and a sense of belonging.

Findings:

Satvsheela's spirituality helped her:

1. Manage stress: Spirituality enabled Satvsheela to manage stress and anxiety, allowing her to focus on her children's education and economic responsibilities.
2. Find purpose: Her spiritual practices gave her a sense of purpose, motivating her to continue working hard for her family's well-being.
3. Build resilience: Satvsheela's faith and spiritual practices helped her develop resilience, enabling her to navigate challenges with greater ease.

Case Study No 4:- Tabbsum a 37 year, bus conductor find the way practicing prayer and meditation regularly as the panacea of stress management at work

Tabbsum, a 37-year-old bus conductor, discovered the benefits of practicing prayer and meditation regularly as a means of managing stress at work. Tabbsum's job as a bus conductor was demanding, with long hours, heavy traffic, and difficult passengers contributing to high levels of stress. He often felt overwhelmed and irritable.

The Discovery of Prayer and Meditation:

Tabbsum began practicing prayer and meditation to cope with his stress. He found that these practices helped him:

1. Reduce anxiety: Prayer and meditation calmed his mind and reduced anxiety, allowing him to focus on his work.
2. Improve patience: Regular practice helped Tabbsum develop greater patience and understanding, enabling him to handle challenging situations more effectively.
3. Enhance well-being: Prayer and meditation improved Tabbsum's overall sense of well-being, boosting his mood and energy levels.

Benefits of Prayer and Meditation:

Tabbsum's experience highlights the benefits of prayer and meditation for stress management:

1. Improved mental clarity: Prayer and meditation helped Tabbsum clear his mind and prioritize tasks.
2. Better emotional regulation: Regular practice enabled him to manage his emotions more effectively, reducing irritability and anxiety.
3. Increased resilience: Tabbsum's spiritual practices helped him develop greater resilience, enabling him to cope with work-related stress.

Case Study No. 5 :- Prashika 48, a peon in Jalgaon district court followed vipashyana and experienced satisfaction in all ups and down situations

Prashika, a 48-year-old peon in Jalgaon district court, discovered the benefits of Vipassana meditation in navigating the ups and downs of her life. Prashika's job as a peon was physically demanding and often stressful. She faced various challenges, including long working hours, heavy workload, and limited financial resources.

Vipassana Meditation: Prashika learned Vipassana meditation, an ancient Indian technique that focuses on:

1. Mindfulness: Observing the present moment without judgment.
2. Self-awareness: Developing awareness of one's thoughts, emotions, and actions.
3. Equanimity: Cultivating a balanced and calm mind.

Findings:

Prashika's practice of Vipassana meditation led to:

1. Increased satisfaction: She experienced greater satisfaction in all situations, whether favorable or challenging.
2. Improved emotional regulation: Prashika developed better emotional regulation, enabling her to manage stress and anxiety more effectively.
3. Enhanced resilience: Vipassana meditation helped Prashika build resilience, allowing her to cope with difficulties with greater ease.

Benefits of Vipassana: Prashika's experience highlights the benefits of Vipassana meditation

1. Greater self-awareness: Vipassana helped Prashika develop a deeper understanding of herself and her reactions to situations.

2. Improved relationships: By cultivating equanimity and compassion, Prashika's relationships with colleagues and others improved.
3. Increased sense of calm: Vipassana meditation brought a sense of calm and peace to Prashika's life, even in challenging situations.

Conclusion:

- Savita's case study illustrates the power of spirituality in helping individuals cope with adversity. By turning to spiritual practices, Savita was able to find a new sense of purpose and meaning in her life, despite the loss of her husband. Her story highlights the importance of spirituality in promoting mental health, well-being, and resilience.
- Vasudha's case study demonstrates that spiritual practices can have a positive impact on interpersonal relationships, even for individuals who identify as atheists. By incorporating mindfulness, self-reflection, and empathy into her daily life, Vasudha was able to improve her communication and relationships with her colleague.
- Satvsheela's case study highlights the importance of spirituality in helping individuals cope with adversity. By incorporating spiritual practices into her daily life, Satvsheela was able to manage her challenges and find a sense of purpose and meaning.
- Tabbsum's case study demonstrates the effectiveness of prayer and meditation as a stress management tool. By incorporating these practices into his daily routine, he was able to reduce stress, improve his mental clarity, and enhance his overall well-being.
- Prashika's case study demonstrates the positive impact of Vipassana meditation on her life. By incorporating this practice into her daily routine, she was able to experience greater satisfaction, improved emotional regulation, and enhanced resilience.

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कृत्रिम बुद्धिमत्ता आणि मानसशास्त्र : संधी व आव्हाने

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* मानसशास्त्र विभागप्रमुख, शिवछत्रपती कॉलेज, छत्रपती संभाजीनगर.

सारांश:

या संशोधन लेखात कृत्रिम बुद्धिमत्ता (Artificial Intelligence - AI) आणि मानसशास्त्र या दोन क्षेत्रांमधील परस्परसंबंधांचा सखोल अभ्यास करण्यात आला आहे. तंत्रज्ञानाच्या झपाट्याने होणाऱ्या प्रगतीमुळे मानसशास्त्रातील संशोधन, निदान, सल्लामसलत आणि उपचार प्रक्रियेत AI चा वापर वाढत आहे. हे तंत्रज्ञान मानवी वर्तनाच्या आकलनासाठी नवी दृष्टी देत असले तरी त्यातून नैतिकता, गोपनीयता आणि मानवी संवेदना या विषयांवरील आव्हानेही उभे राहत आहेत. या लेखात AI आणि मानसशास्त्रातील संधी, आव्हाने आणि भविष्यातील दिशा यांचे विश्लेषण करण्यात आले आहे.

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प्रस्तावना :

कृत्रिम बुद्धिमत्ता म्हणजे संगणक किंवा यंत्राद्वारे मानवी विचारसरणी, शिकण्याची क्षमता आणि निर्णयक्षमता निर्माण करणे. मानसशास्त्र हे मानवी मन, भावना, वर्तन आणि सामाजिक परस्परसंवादाचा अभ्यास करणारे विज्ञान आहे. या दोन्ही क्षेत्रांचा संगम आधुनिक संशोधनात नवे आयाम निर्माण करत आहे. AI च्या साहाय्याने मानसशास्त्रीय डेटा विश्लेषण अधिक वेगवान आणि अचूक झाले आहे. तसेच, मानसिक आरोग्य क्षेत्रात AI आधारित थेरपी चॅटबॉट्स, भावना ओळख प्रणाली आणि वर्तन विश्लेषण साधने अधिक प्रभावी ठरत आहेत.

साहित्य समीक्षा :

विविध संशोधकांनी कृत्रिम बुद्धिमत्तेचा मानसशास्त्रातील वापर यावर संशोधन केले आहे. Russell आणि Norvig (2020) यांच्या मते, AI ही आधुनिक ज्ञानप्रणाली आहे जी मानवाच्या विचारपद्धतीचे संगणकीकरण करते. Luxton (2014) यांनी मानसिक आरोग्य क्षेत्रात AI चा वापर सल्ला, निदान आणि आत्महत्या प्रतिबंध कार्यक्रमात होऊ शकतो असे नमूद केले आहे. तसेच American Psychological Association (2023) ने AI वापरातील नैतिकतेवर भर दिला आहे. या साहित्याचा अभ्यास दर्शवतो की AI मानसशास्त्राला नवे तांत्रिक साधन उपलब्ध करून देत आहे.

संशोधन उद्दिष्टे व पद्धतः

या संशोधनाचे प्रमुख उद्दिष्टे पुढीलप्रमाणे आहेत:

1. कृत्रिम बुद्धिमत्तेचा मानसशास्त्र क्षेत्रातील वापर समजून घेणे.
2. मानसशास्त्रातील संशोधन व उपचार प्रक्रियेत AI च्या योगदानाचा अभ्यास करणे.
3. AI तंत्रज्ञानामुळे निर्माण होणाऱ्या नैतिक, सामाजिक व व्यावसायिक आव्हानांचा विचार करणे.
4. AI आणि मानसशास्त्र यांच्या समन्वयातून भविष्यातील दिशा सुचवणे.

या अभ्यासासाठी साहित्याधारित (Descriptive and Analytical) संशोधन पद्धत अवलंबली आहे. विविध शैक्षणिक लेख, ऑनलाइन संशोधनपत्रे, मानसशास्त्रीय व तांत्रिक स्रोतांचा संदर्भ घेतला गेला आहे.

कृत्रिम बुद्धिमत्ता आणि मानसशास्त्रातील संधी:

1. मानसिक आरोग्य निदान व उपचार सुलभता – AI आधारित साधनांमुळे मानसिक आजारांची प्रारंभिक ओळख शक्य झाली आहे.
2. थेरपी चॅटबॉट्स – ‘Woebot’ आणि ‘Wysa’ सारखे बॉट्स मानसोपचार संवाद साधतात.
3. डेटा विश्लेषण व संशोधन – मोठ्या प्रमाणातील मानसशास्त्रीय डेटाचे विश्लेषण करून संशोधन अधिक अचूक बनले आहे.
4. शिक्षण क्षेत्रात वैयक्तिक शिकवणी – AI विद्यार्थ्यांच्या शिकण्याच्या सवयी ओळखून वैयक्तिक शिक्षण योजना तयार करू शकतो.
5. मानवी भावना ओळख – Emotion Recognition तंत्रज्ञानामुळे मानवी भावनांची संगणकीय समज वाढली आहे.

आव्हाने व मर्यादा:

1. नैतिकतेचे प्रश्न – AI कडून मिळणाऱ्या मानसिक सल्ल्याची जबाबदारी कोणाची हे अस्पष्ट आहे.
2. गोपनीयतेचा धोका – मानसशास्त्रीय माहिती संवेदनशील असल्यामुळे डेटा सुरक्षिततेचा प्रश्न निर्माण होतो.
3. मानवी सहानुभूतीचा अभाव – AI भावना समजू शकतो पण अनुभवू शकत नाही.
4. नोकरीतील बदल – तंत्रज्ञानामुळे मानसशास्त्रातील काही पारंपरिक भूमिका बदलत आहेत.
5. तांत्रिक मर्यादा – भाषा व सांस्कृतिक विविधतेमुळे सर्वांसाठी समान परिणाम मिळत नाहीत.

चर्चा: AI आणि मानसशास्त्र यांचे नाते पूरक आहे. मानसशास्त्र मानवी भावनांचे विज्ञान तर AI त्याचे तांत्रिक रूप आहे. दोन्हीचा समन्वय मानसिक आरोग्य क्षेत्रात क्रांती घडवू शकतो. AI तंत्रज्ञान मानसशास्त्रज्ञांना संशोधन व उपचारात मदत करत असले तरी मानवी संवेदना व सहानुभूती या घटकांचा पर्याय होऊ शकत नाही.

निष्कर्ष:

कृत्रिम बुद्धिमत्ता हे मानसशास्त्र क्षेत्रासाठी एक शक्तिशाली साधन आहे. मानसिक आरोग्य, शिक्षण, सल्लामसलत आणि संशोधनात त्याचा उपयोग वाढत आहे. परंतु या तंत्रज्ञानाचा वापर नैतिकता, मानवी मूल्ये आणि गोपनीयता राखून केला गेला पाहिजे. तंत्रज्ञान आणि मानवी भावना यांच्या संतुलित संगमातूनच भविष्यातील मानसशास्त्र अधिक प्रगल्भ आणि सर्वसमावेशक होईल.

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साधकांच्या सकारात्मक विचारांचा ताण-तणावावर होणारा परिणाम अभ्यासणे

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सारांश:

मानवी जीवन हे विविध कल्पना विचार, भावना, सामाजिक परिस्थिती आणि समस्यांनी भरलेले असते. आजच्या कृत्रिम तंत्रज्ञानामुळे व AI च्या वाढत्या वापरामुळे व्यक्तींच्या जीवनशैलीत काही ना काही ताण-तणाव वाढत चाललेला आपण पाहत आहोत. ताण हा पूर्णपणे टाळता येत नाही. परंतु त्यावर विविध तंत्रांच्या माध्यमातून नियंत्रण ठेवणे शक्य आहे. यासाठी सकारात्मक विचार हे शारीरिक व मानसिक स्थैर्य प्राप्त करण्यात महत्त्वाची भूमिका बजावताना दिसून येतात. सकारात्मक विचार केल्याने मन शांत, स्थिर, उर्जावान व आरोग्य संपन्न राहते. ताण-तणावाच्या परिस्थितीतही सकारात्मक दृष्टिकोन ठेवणारी व्यक्ती स्थिर राहते. ताण कमी करून व्यक्तीला आनंद, प्रेरणा व आत्मिक समाधान मिळते म्हणूनच, सकारात्मकता ही ताण-तणावावर मात करण्याची सर्वोत्तम मानसिक औषधी आहे असे म्हणावे लागेल.

सदर संशोधन संभाव्यतेवर आधारित संशोधन पद्धती अंतर्गत करण्यात आले आहे. हेतुपुरस्सर नमुना निवड पद्धतीचा वापर करून सर्वेक्षण संशोधन पद्धतीचा वापर करण्यात आला आहे. सदर संशोधन हे महाराष्ट्रातील विविध जिल्यातील ब्रह्मविद्या प्राथमिक वर्ग पूर्ण करणाऱ्या सर्व साधकांचा समावेश करण्यात आला आहे.

सदर संशोधन हे सहेतूक नमुना निवड पद्धतीचा वापर करून करण्यात आले आहे. सदर संशोधनासाठी पुणे जिल्यातील ६० साधकांचा (स्त्री-पुरुष) नमुन्यामध्ये समावेश करण्यात आला आहे. सदर संशोधनावरून असे दिसून येते की, उच्च सकारात्मक विचार पातळी असणाऱ्या व्यक्तींचा (स्त्रीया-२५ व पुरुष-२३) ताण-तणाव कमी दिसून आलेला आहे, मध्यम सकारात्मकता पातळी असलेल्या व्यक्तींचा (स्त्रीया-०४ व पुरुष-०४) ताण-तणाव मध्यम पातळीचा आहे. परंतु कमी सकारात्मक विचार पातळी असलेल्या व्यक्तींचा (स्त्रीया-०१ व पुरुष-०३) ताण-तणाव जास्त आढळून आला आहे.

सदर संशोधनाच्या निष्कर्षामध्ये असे आढळून आले आहे की, उच्च सकारात्मकता असलेल्या व्यक्तींना कमी ताण-तणाव आढळून आला आहे. तसेच कमी सकारात्मकता असलेल्या व्यक्तींचा ताण-तणाव जास्त आढळून आला आहे. सदर संशोधनावरून असे आढळून आले आहे की, उच्च सकारात्मक विचार पातळी असणाऱ्या साधकांचा ताण-तणाव कमी पातळीचा आढळून आला आहे त्यामुळे येथे ऋण सहसंबंध आढळून आला आहे.

प्रस्तावना :

मानवी जीवन हे विविध कल्पना विचार, भावना, सामाजिक परिस्थिती आणि समस्यांनी भरलेले असते. आजच्या कृत्रिम तंत्रज्ञामुळे व AI च्या वाढत्या वापरामुळे व्यक्तींच्या जीवनशैलीत काही ना काही ताण-तणाव वाढत चाललेला आपण पाहत आहोत. ताण हा पूर्णपणे टाळता येत नाही. परंतु त्यावर विविध तंत्रांच्या माध्यमातून नियंत्रण ठेवणे शक्य आहे. यासाठी सकारात्मक विचार हे शारीरिक व मानसिक स्थैर्य प्राप्त करण्यात महत्त्वाची भूमिका बजावताना दिसून येतात. सकारात्मक विचार केल्याने मन शांत, स्थिर, उर्जावान व आरोग्य संपन्न राहते. ताण-तणावाच्या परिस्थितीतही सकारात्मक दृष्टिकोन ठेवणारी व्यक्ती स्थिर राहते. अशा व्यक्तींच्या वर्तनात आत्मविश्वास, सहनशीलता व समायोजन उच्च दर्जाचे दिसून येते. सकारात्मकता ही केवळ मानसिक नव्हे तर शारीरिक आरोग्यासाठी महत्त्वाची बाब आहे. ताण कमी करून व्यक्तीला आनंद, प्रेरणा व आत्मिक समाधान मिळते म्हणूनच, सकारात्मकता ही ताण-तणावावर मात करण्याची सर्वोत्तम मानसिक औषध आहे असे म्हणावे लागेल.

ब्रह्मविद्येचा सखोल अभ्यास नालंदा विद्यापिठामधून सुरु झाला. ब्रह्मविद्येचे श्रेष्ठ व आद्यगुरु पद्मसंभव हे होते. गुरु-शिष्य परंपरेने ही श्वास व विचारांची साधना आज सर्व जगभर प्रसिद्ध आहे. "ब्रह्मविद्येचा" अभ्यासक्रम हे ज्ञान श्रेष्ठ ज्ञानी पुरुषांनी हजारो वर्षे केलेल्या संशोधनाचे सार आहे आणि आज तुमच्या जवळ हे ज्ञान पोहचविण्यासाठी किती लोक जन्म घेऊन सातत्याने तुमच्यापर्यंत हे ज्ञान पोहचवत आहे. तुमच्यातील ह्या दैवी शक्तिची, ह्या परमात्म्याची, ह्या भगवंताची तुम्हाला ओळख करून देणे हेच "ब्रह्मविद्येचे" उद्दिष्ट आहे. "ब्रह्मविद्येच्या" अभ्यासक्रमात प्राणायाम व इतर शास्त्रशुद्ध अध्यात्मिक श्वसन प्रकार आणि ध्यान साधना करण्याची पद्धत व मार्गदर्शन करण्यात येते. आपला श्वास हेच आपले जीवन आहे. जोपर्यंत श्वास आहे तोपर्यंत जीवन आहे. आपले जीवन पूर्णतः श्वसनावर अवलंबून आहे. श्वासामार्फतच जीवनावश्यक प्राणवायू आपल्या प्राणशक्तिने शरीरात घेतला जातो. प्राणवायूने रक्त शुद्ध होते व प्राणशक्तिने मज्जासंस्थेचे कार्य चालते. बहुतेक सर्व रोग व आजार अपुरा प्राणवायू शरीरात घेतल्यामुळे उद्भवतात. याप्रकारे शरीराचे आरोग्य योग्य श्वसनावरच पूर्णतः अवलंबून आहे. या अध्यात्मिक श्वसन प्रकाराच्या नियमित सरावाने शरीरात योग्य श्वसनाची सवय होते. तसेच हळूहळू पुरुष्फुसांची कार्यक्षमता वाढवून अधिक प्राणवायु शरीरात घेतला जातो. त्यामुळे हे शरीर अधिक कार्यक्षम व निरोगी होते. तुमचा प्रत्येक विचार हा एक प्रकाश आहे. जो तुम्ही विचार करता तेच तुम्ही होता. योग्य श्वासाप्रमाणे शारीरिक आरोग्य शुद्ध होते. त्याचप्रमाणे योग्य ध्यानाने मन शुद्ध होते. शुद्ध मनाने मनुष्य नेहमी आनंदी, उत्साही, परोपकारी व आरोग्य संपन्न होतो. आज सर्वच समस्यांचे मूळ कारण अभ्यासले तर विचार हेच आहे. कारण आपले अतार्किक विचार हे आपल्या शारीरिक व मानसिक आरोग्याला धोका पोहचवत असतात. कारण आपण जसा विचार करतो तशाच गोष्टी घडत असतात. आपले विचार हे

आपल्या शरीरातील पेशींवर सकारात्मक व नकारात्मक प्रभाव पाडतात आणि शरीर त्याच पध्दतीने कार्य करते. आपण श्वास घेताना तो श्वासनलिकेतून फुफ्फुसांमध्ये जातो व रक्ताचे शुद्धिकरण होते आणि हृदय रक्ताचे पंपिंग करते. अशुद्ध रक्त उच्छ्वासाद्वारे बाहेर टाकले जाते. शुद्ध रक्ताचा पुरवठा संपूर्ण शरीराला होतो, जसा विचार करतो तशाच शरीरातील पेशी, मज्जारज्जू, मेंदू कार्य करतात व आपले वर्तन त्यामुळे प्रभावीत होत असते. त्यामुळे सकारात्मक विचारांमुळे आपल्याला स्थैर्य प्राप्त होते व मानसिक ताण-तणाव कमी होऊन आयुष्य आनंदी होण्यास मदत होते.

समस्या विधान (Statement of the Problem):

साधकांच्या सकारात्मक विचारांचा ताण-तणावावर होणारा परिणाम अभ्यासणे.

सदर संशोधनाची गरज व महत्त्व (Need and Importance of the study):

सदर संशोधन हे व्यक्तिच्या दैनंदिन आयुष्यात सकारात्मक विचार वृद्धिंगत करून आनंद निर्माण करण्यासाठी गरजेचे आहे. त्यातूनच ताण-तणाव दूर करणे हे गरजेचे ठरणार आहे. व्यक्तिच्या वाढत्या ताण-तणावांवर सकारात्मक विचार एक रामबाण औषध म्हणून कार्य करणार आहे. सकारात्मक विचारांनी नकारात्मक विचारांवर विजय मिळवून ताण-तणाव दूर करण्यास मदत होणार आहे म्हणून सदर संशोधन महत्त्वाचे आहे.

संशोधनाची उद्दिष्टे (Objectives):

१. साधकांमधील सकारात्मक विचारांची पातळी अभ्यासणे.
२. साधकांमधील ताण-तणावीची पातळी अभ्यासणे.
३. साधकांमधील सकारात्मक विचार व ताणतणाव यांचा सहसंबंध अभ्यासणे.

अभ्युपगम (Hypotheses):

१. साधकांमध्ये सकारात्मक विचारांची पातळी वाढल्यास ताण-तणावाचे प्रमाण कमी होते.
२. साधकांमध्ये सकारात्मक विचारांची पातळी कमी झाल्यास ताण-तणाव वाढतो.

संशोधनातील परिवर्त्ये (Variables):

स्वतंत्र परिवर्त्ये

१. स्त्री.
२. पुरुष

अवलंबी परिवर्त्ये

१. सकारात्मक विचार

२. ताण-तणाव

नियंत्रित परिवर्त्य

१. ब्रह्मविद्या प्राथमिक वर्ग करणारे साधक

२. वय (२५ ते ४० वर्षे)

संशोधन पद्धती (Research Method):

सदर संशोधनासाठी संभाव्यतेवर आधारित संशोधन पद्धतीचा वापर करण्यात आला आहे. सदर संशोधनासाठी हेतुपुरस्पर नमुना निवड पद्धती अंतर्गत येणाऱ्या सर्वेक्षण संशोधन पद्धतीचा वापर करण्यात आला आहे.

संशोधनाची जनसंख्या (Population):

सदर संशोधन हे महाराष्ट्रातील विविध जिल्यातील ब्रह्मविद्या प्राथमिक वर्ग पूर्ण करणाऱ्या सर्व साधकांचा समावेश करण्यात आला आहे.

संशोधनाचा न्यादर्श (Sample):

सदर संशोधन हे सहेतूक नमुना निवड पद्धतीचा वापर करून करण्यात आले आहे. सदर संशोधनासाठी पुणे जिल्यातील ६० साधकांचा (स्त्री-पुरुष) नमुन्यामध्ये समावेश करण्यात आला आहे.

संख्याशास्त्रीय साधने व तंत्रे (Statistical Tools and Techniques):

१. संशोधनासाठी स्व-रचित सकारात्मक विचार व ताण-तणाव या संदर्भात प्रश्नावली तयार करून ती ऑनलाईन गुगल फॉर्मच्या माध्यमातून भरून घेण्यात आली आहे.

२. माहिती विश्लेषणासाठी सारणीकरण (Tabulation) या संख्याशास्त्रीय तंत्राचा वापर करण्यात आला आहे.

माहितीचे विश्लेषण व अर्थनिर्वचन (Data Analysis and Interpretation):

ब्रह्मविद्या प्राथमिक वर्ग करणाऱ्या साधकांची सकारात्मक विचारांची पातळी दर्शविणारा तक्ता

अ.क्र.	स्त्रीया (३०)	पुरुष (३०)	गुणांचे प्रमाण	सकारात्मक पातळी
१	०१	०३	२०-४०	कमी
२	०४	०४	४१-७०	मध्यम
३	२५	२३	७१-१००	उच्च



ब्रह्मविद्या प्राथमिक वर्ग करणाऱ्या साधकांची ताण- तणाव पातळी दर्शविणारा तक्ता

अ.क्र.	स्त्रीया (३०)	पुरुष (३०)	गुणांचे प्रमाण	ताण-तणाव पातळी
१	२५	२३	२०-४०	कमी
२	०४	०४	४१-७०	मध्यम
३	०१	०३	७१-१००	उच्च

सदर संशोधनावरून असे दिसून येते की, उच्च सकारात्मक विचार पातळी असणाऱ्या साधकांचा (स्त्रीया-२५ व पुरुष-२३) ताण-तणाव कमी दिसून आलेला आहे, मध्यम सकारात्मकता विचार पातळी असलेल्या साधकांचा (स्त्रीया-०४ व पुरुष-०४) ताण-तणाव मध्यम पातळीचा आहे. परंतु कमी सकारात्मक विचार पातळी असलेल्या साधकांचा (स्त्रीया-०१ व पुरुष-०३) ताण-तणाव जास्त आढळून आला आहे.

निष्कर्ष (Conclusion):

सदर संशोधनाच्या निष्कर्षामध्ये असे आढळून आले आहे की, उच्च सकारात्मकता असलेल्या व्यक्तींना कमी ताण-तणाव आढळून आला आहे. तसेच कमी सकारात्मकता असलेल्या व्यक्तींचा ताण-तणाव जास्त आढळून आला आहे. सदर संशोधनावरून असे आढळून आले आहे की, उच्च सकारात्मक विचार पातळी असणाऱ्या साधकांचा ताण-तणाव कमी पातळीचा आढळून आला आहे त्यामुळे येथे ऋण सहसंबंध आढळून आला आहे.

व्याप्ती व मर्यादा (Scope and limitations) :

१. सदर संशोधन हे २०२५ या वर्षापुरतेच मर्यादित आहे.
२. सदर संशोधन हे सकारात्मक विचार व ताण-तणाव या आशयापुरतेच मर्यादित आहे.
३. सदर संशोधन हे ब्रह्मविद्या प्राथमिक वर्ग करणाऱ्या साधकांपुरते मर्यादित आहे.

शिफारशी व उपाययोजना (Recommendations and implementation):

१. व्यक्तींचा सकारात्मक विचार वृद्धिंगत करण्यासाठी चर्चासत्र आयोजित करणे.
२. ताण-तणाव दूर करण्यासाठी विविध ध्यान पध्दतींचा अवलंब करणे
३. ध्यानधारणेचा सकारात्मक विचारांवर प्रभाव पडून ताण-तणाव दूर कसे होतात हे समजावून सांगणारे उपक्रम राबविणे.



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ता. श्रीरामपूर जि. अहिल्यानगर

सारांश:

प्रस्तुत संशोधन हे श्रीरामपूर तालुक्यातील 100 नमुन्यावर आधारित असून संशोधनात सहकारी क्षेत्रातील कर्मचारी आणि खाजगी क्षेत्रातील कर्मचारी यांच्या व्यावसायिक ताणाचा अभ्यास करण्यात आला. संशोधनात मध्यमान प्रमाणविचलन आणि 'T' मूल्य तपासण्यात आले असून सहकार क्षेत्रातील कर्मचारी ताण व्यवस्थापन मध्यमान 31.80 व प्रमाणविचलन 20.87 आले असून खाजगी क्षेत्रातील कर्मचारी मध्यमान 36.89 व प्रमाण विचलन 11.32 असून दोन्हीची 'T' मूल्य 1.698 इतके आढळून आले असून 0.05 पातळीवर लक्षणीय फरक आढळून येत नाही. यावरून सहकारी व खाजगी क्षेत्रातील कर्मचाऱ्यांच्या व्यावसायिक ताणात कोणताही फरक नसतो असे आढळून आले.

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Introduction (प्रस्तावना) :

कर्मचारी हा कुठल्याही उद्योगाचा आत्मा आहे. प्रत्येक कार्यासाठी त्या त्या क्षेत्रातील तज्ञ व कुशल कर्मचारी असणे हे औद्योगिक विकासासाठी आवश्यक अंग आहे. औद्योगिक क्षेत्रात कर्मचाऱ्यांच्या योग्यतेचे परिश्रम करून प्रत्येकाला त्याच्या क्षमतेनुसार काम देणे आवश्यक असते. तसे न केल्यास कार्यक्षमतेवर त्याचा विपरीत परिणाम होतो परिणामी उद्योगाची वाढ खुंटते. व्यक्तीच्या लिंगभेदाचा व्यावसायिक ताणावर परिणाम होतो. स्त्रीच्या भूमिका बदलामुळे व्यावसायिक ताण निर्माण होतो. त्यामुळे असमाधानात वाढ होते अतिताणामुळे चिडचिडेपणा, निराशा, थकवा अनुभवास येतात. सहकारी आणि खाजगी क्षेत्रातील कामाचे स्वरूप, सेवा, असुरक्षितता, सततचा त्रास, जबाबदारी यामुळे व्यावसायिक ताणात वाढ होते.

Objective and the study (अभ्यास हेतू/उद्देश) :

प्रस्तुत संशोधनाचा मुख्य उद्देश म्हणजे सहकारी क्षेत्र व खाजगी क्षेत्रातील स्त्री व पुरुष कर्मचाऱ्यांच्या व्यावसायिक ताणाचा अभ्यास करणे.

Hypothesis (सिद्धांत संकल्पना) :

- 1) सहकारी व खाजगी क्षेत्रातील कर्मचाऱ्यांच्या व्यावसायिक ताणात फरक नसतो.
- 2) स्त्री व पुरुष कर्मचाऱ्यांच्या व्यावसायिक ताणात फरक नसतो.

Operational definition and variables in the study :

1. **सहकार क्षेत्र** :- ज्या क्षेत्रातील उद्योगाची उभारणी सहकारातून केली जाते. त्यास सहकार क्षेत्र म्हटले जाते.
2. **खाजगी क्षेत्र** :- ज्या क्षेत्राची उभारणी ही खाजगी व्यक्तीकडून केली जाते त्यास खाजगी क्षेत्र असे म्हणतात.
3. **व्यावसायिक ताण** :- कामाच्या ठिकाणीचा दबाव जबाबदाऱ्या यामुळे कर्मचाऱ्यांवर होणारे नकारात्मक शारीरिक व मानसिक परिणाम म्हणजे व्यावसायिक ताण होय.
4. **सहकारी कर्मचारी** :- सहकारी क्षेत्रातील संचालक मंडळाकडून नियुक्त असलेल्या व्यक्तीस सहकारी कर्मचारी असे म्हटले जाते.
5. **खाजगी कर्मचारी** :- खाजगी संस्थेकडून नियुक्त असलेल्या व्यक्तीस खाजगी कर्मचारी असे म्हटले जाते.

Review & Literature (पूर्व संशोधनाचा आढावा) :

1. Hitesh R. Vaidya (2017). सरकारी व खाजगी कर्मचाऱ्यांच्या व्यापारविषयक तणाव मोजण्यासाठी या अभ्यासाचा उद्देश असून A. K. श्रीवास्तव व डॉ. ऐ. पी. सिंग यांचे Job stress Intertory scale चा वापर करण्यात आला असून सरकारी क्षेत्रातील कर्मचारी व खाजगी क्षेत्रातील कर्मचाऱ्यांना व्यावसायिक ताण जास्त आहे.
2. Nadeem Malik (2011) यांनी सरकारी व खाजगी बँकेमध्ये काम करणाऱ्या 200 कर्मचाऱ्यांची तपासणी केली आलेल्या निष्कर्षावरून असे आढळून आले की खाजगी बँकांमध्ये व्यावसायिक ताण जास्त असतो.
3. RajuBhai Rana (2014). यांनी सुरेंद्रनगर शहरातील 60 कर्मचाऱ्यांचा अभ्यास करून सरकारी कर्मचाऱ्यांपेक्षा खाजगी क्षेत्रातील कर्मचाऱ्यांना कामाबाबत अधिक ताण असतो.

Research methodology (संशोधन पद्धती) :

प्रस्तुत संशोधनासाठी सहकारी क्षेत्रात काम करणाऱ्या व खाजगी क्षेत्रात काम करणाऱ्या कर्मचाऱ्यांच्या अभ्यास करण्यात आला. त्यासाठी श्रीरामपूर तालुक्यातील सहकारी व खाजगी क्षेत्रात काम करणाऱ्या 100 कर्मचाऱ्यांची निवड करण्यात आली. त्यामध्ये सहकारी क्षेत्रातील 50 निवडले असून त्यात महिला कर्मचारी 25 व पुरुष कर्मचारी 25 होते. तसेच खाजगी क्षेत्रातील 50 कर्मचारी निवडले असून त्यात 25 महिला कर्मचारी व 25 पुरुष कर्मचारी होते. प्रस्तुत संशोधनासाठी

निवडलेल्या कर्मचारी हा ग्रामीण आणि शहरी भागातील असून यांचे वय 25 ते 50 या दरम्यान आहे.

Variables (परिवर्तके) :

1. स्वतंत्र परिवर्तनके

अ) कर्मचारी

1. सहकारी कर्मचारी
2. खाजगी कर्मचारी

ब) लिंग प्रकार

1. स्त्री
2. पुरुष

2. परतंत्र परिवर्तके :

1. व्यावसायिक ताण

Research tools (संशोधन साधने / तंत्रे) :

1. व्यावसायिक ताण चाचणी :-

डॉ. ए. के. श्रीवास्तव आणि डॉ. ए. पी. सिंग यांनी ही तयार केली असून त्यात 46 विधाने आहे. चाचणी ही हिंदी व मराठी भाषेत उपलब्ध असून पाच बिंदूंच्या मापन श्रेणीद्वारे योग्य बिंदूश्रेणीवर मत नोंदवायचे आहे. चाचणीत 28 वाक्ये बरोबर असून 18 वाक्ये चुकीचे आहे. बरोबर वाक्यांना 1, 2, 3, 4, 5 अशी गुणांक असून चुकीच्या वाक्यांना 4, 3, 2, 1 अशी गुणांक देण्यात आले आहे. चाचणीची विश्वसनीयता प्रक्रिया 0.93 असून यर्थाथता 0.59 इतकी आहे. व्यावसायिक ताण चाचणी व्यावसायिक अभिवृत्तीचे व व्यावसायिक ताणांचे मापन करण्याकरता वापरले जाते.

Result and discussion (निष्कर्ष आणि चर्चा) :

संशोधनात सहकार्य क्षेत्र व खाजगी क्षेत्रातील स्त्री व पुरुष कर्मचाऱ्यांच्या व्यावसायिक ताणांचा अभ्यास करून मध्यमान, प्रमाणविचलन व 'T' मूल्य काढण्यात आले. सहकारी क्षेत्रात काम करणाऱ्या कर्मचाऱ्यांचे मध्यमान 31.80 व प्रमाणविचलन 20.87 तर खाजगी क्षेत्रात काम करणाऱ्या कर्मचाऱ्यांचे मध्यमान 36.89 व प्रमाणविचलन 11.32 दिसून आले. या दोन्ही गटांचे 'T' मूल्य 1.698 इतके दिसून आले. प्रस्तुत 'T' मूल्य 0.05 पातळीवर लक्षणीय फरक दर्शवीत नाही यावरून असे आढळून येते की सहकारी आणि खाजगी क्षेत्रातील कर्मचाऱ्यांच्या व्यावसायिक ताणांचे प्रमाण सारखे असते.



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व्यावसायिक ताण या घटकांचे स्त्री व पुरुष यांचे मध्यमान 32.01 व प्रमाण विचलन 8.98 तर पुरुष कर्मचाऱ्यांचे मध्यमान 37.42 व प्रमाणविचलन 22.32 दिसून आले. या दोन्हींचे 'T' मूल्य आहे 1.893 इतकी दिसून आले. प्रस्तुत 'T' मूल्य 0.05 पातळीवर लक्षणीय फरक दर्शवीत नाही. यावरून स्त्री व पुरुष कर्मचारी व्यावसायिक ताण सारखा असतो. स्त्री व पुरुषांच्या व्यावसायिक ताणात लिंगभेदाचा प्रभाव पडत नाही.

Conclusion (सारांश) :

प्रस्तुत संशोधन निष्कर्षानुसार सहकारी क्षेत्र व खाजगी क्षेत्रातील स्त्री व पुरुष कर्मचाऱ्यांच्या व्यावसायिक ताण बाबतीत फरक आढळून येत नाही. प्रस्तुत संशोधनासाठी 100 कर्मचारी निवडले असून स्त्री व पुरुष कर्मचारी हे सहकारी क्षेत्र व खाजगी क्षेत्रातील होते.

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1. Hitesh R. Vidhiya (2017). A Comparative Study & Occupational stress between Government Employees and Private Employees. *International Journal & Indian Psychological*, Volume 4, Issue 2, PP2349-3429.
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4. पंडित र. वि., कुलकर्णी अ. वि., गोरे च. वि (1999). मानसशास्त्र औद्योगिक आणि व्यावसायिक उपयोजन, पिंपळापुणे अँड कंपनी, नागपूर.

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किशोरवयीन मुलांमध्ये लवचिकता आणि भावनिक बुद्धिमत्ता

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सारांश:

किशोरांच्या जीवनात अनेक चढ उतार अनुभवास येतात. या काळात किशोरवयीन व्यक्तींना शारीरिक आणि मानसिक दृष्ट्या तणावाचा अनुभव येतो; त्यापैकी काहींमध्ये विपरीत परिस्थितींशी समायोजन करण्याची क्षमता विकसित होते, तर काही जण या आव्हानांना तोंड देऊ शकत नाहीत. किशोरवस्थेकडे अनेकदा अपरिहार्यपणे अशांत आणि अस्थिर प्रक्रिया म्हणून पाहिले जाते, ज्यात वारंवार नकारात्मक मनःस्थिती, पालकांशी समस्याग्रस्त संबंध आणि मादक पदार्थांचे सेवन यांसारखे उच्च जोखमीचे वर्तन आढळते. जेव्हा व्यक्ती जीवनातील चढ-उतारांना सामोरी जात असते, तेव्हा लवचिकता हा एक अत्यंत महत्त्वपूर्ण संरक्षणात्मक घटक ठरतो. भावनिक बुद्धिमत्ता म्हणजे "स्वतःच्या आणि इतरांच्या भावना ओळखण्याची, त्यांचे मूल्यांकन करण्याची आणि समजून घेण्याची जन्मजात क्षमता होय". प्रस्तुत संशोधनामध्ये संशोधकांनी किशोरवयीन विद्यार्थ्यांमध्ये लवचिकता आणि भावनिक बुद्धिमत्ता या घटकांचा अभ्यास केला. या अभ्यासासाठी शिरपूर शहरा मधील विविध महाविद्यालया मध्ये शिकणाऱ्या २०० किशोरवयीन विद्यार्थ्यांची नमुना म्हणून निवड करण्यात आली. या नमुन्यामध्ये १०० मुले आणि १०० मुलींचा समावेश आहे.

निष्कर्षानुसार किशोरवयीन मुलांमध्ये लवचिकता आणि भावनिक बुद्धिमत्ता यांच्यात सकारात्मक सहसंबंध आहे, तसेच लवचिकतेच्या बाबतीत किशोरवयीन मुलांमध्ये लिंग-आधारित फरक दिसून आला. मुलांच्या तुलनेत मुलींमध्ये लवचिकता आणि भावनिक बुद्धिमत्ता अधिक असल्याचे दिसून येते.

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प्रस्तावना:

किशोरवस्था हा मानवी विकासातील एक अत्यंत नाजूक आणि महत्त्वपूर्ण टप्पा आहे. या टप्प्यावर शारीरिक मानसिक, संज्ञानात्मक आणि सामाजिक-भावनिक स्तरावर मोठे बदल होत असतात. या वयात तरुणांकडून सामाजिक भूमिकांनुसार वागणे, समवयस्क आणि भिन्नलिंगी व्यक्तींशी संवाद साधणे, शालेय शिक्षण पूर्ण करणे आणि भविष्यातील कारकिर्दीसंबंधी महत्त्वपूर्ण निर्णय घेणे अपेक्षित असते. या अपेक्षांमुळे निर्माण होणारा तणाव दैनंदिन जीवनातील मागण्यांशी जुळवून घेणे

किशोरवयीन मुलांसाठी कठीण करतो, ज्यामुळे नकारात्मक शारीरिक आणि भावनिक परिणाम दिसून येतात (चंद्रा आणि बटाडा, २००६). विद्यार्थ्यांच्या जीवनातील तणावाचे परिणाम निकृष्ट कल्याणाकडे नेऊ शकतात. म्हणूनच, ते तणावपूर्ण घटनांचा कसा अनुभव घेतात, त्यावर कशी प्रतिक्रिया देतात, त्याबद्दल कसा विचार करतात आणि त्या आव्हानांवर मात कशी करतात, हे समजून घेणे त्यांच्या जीवनातील आनंद वाढवण्यासाठी आधार प्रदान करते.

भावनिक बुद्धिमत्ता :

भावनिक बुद्धिमत्ता म्हणजे एखाद्या व्यक्तीची भावना ओळखणे, संप्रेषण करणे, वर्णन करणे आणि समजून घेण्याची जन्मजात क्षमता होय. काही संशोधकांचा असा युक्तिवाद आहे की या प्रकारची बुद्धिमत्ता कालांतराने विकसित आणि बळकट केली जाऊ शकते, तर दुसऱ्या विचारसरणीनुसार हा एक जन्मजात गुणधर्म आहे. भावनिक बुद्धिमत्तेवर १९९० पासून अभ्यास होत आहेत.

व्याख्या:

मेयर आणि सॅलोवे (१९९०) यांच्या मते, भावनिक बुद्धिमत्ता ही "स्वतःच्या आणि इतरांच्या भावना व मनोवृत्तींचे निरीक्षण करण्याची, त्या भावनांमध्ये फरक ओळखण्याची आणि या माहितीचा उपयोग स्वतःच्या विचारांना व कृतींना मार्गदर्शन करण्यासाठी करण्याची क्षमता होय."

भावनिक बुद्धिमत्तेचे प्रमुख घटक :

गोलेमन (१९९५) यांनी भावनिक बुद्धिमत्तेमध्ये खालील पाच गुण समाविष्ट केले आहेत:

क्र.	क्षमता समूह	समाविष्ट असलेले घटक
१	वैयक्तिक क्षमता	आत्म-जागरूकता
		आत्म-नियंत्रण
		प्रेरणा
२	सामाजिक क्षमता	सहानुभूती
		सामाजिक कौशल्ये

भावनिक बुद्धिमत्तेचे प्रमुख आयाम :

भावनिक बुद्धिमत्तेचे प्रमुख आयाम दोन मुख्य सैद्धांतिक दृष्टिकोनांवर आधारित आहेत:

- क्षमता-आधारित मॉडेल – भावना ओळखणे, भावनांचा उपयोग करणे, भावना समजून घेणे, भावनांचे व्यवस्थापन करणे,
- मिश्र मॉडेल- वैयक्तिक क्षमता सामाजिक क्षमता

लवचिकता :

- **लवचिकतेची व्याख्या :**अमेरिकन सायकॉलॉजिकल असोसिएशन (APA)

लवचिकता म्हणजे "प्रतिकूल परिस्थिती, आघात, शोकांतिका, धोके किंवा तणावाचे महत्त्वपूर्ण स्रोत जसे की कुटुंब आणि नातेसंबंध समस्या, गंभीर आरोग्य समस्या किंवा कामाच्या ठिकाणी आणि आर्थिक ताणतणावांना तोंड देताना चांगल्या प्रकारे जुळवून घेण्याची प्रक्रिया."

लवचिकता म्हणजे आयुष्यातील कठीण प्रसंग आणि आव्हानांना तोंड देऊनही त्यातून बाहेर पडण्याची आणि पुढे जाण्याची क्षमता आणि प्रक्रिया होय.

- **लवचिकतेचे प्रकार**

लवचिकता ही केवळ प्रतिकूल परिस्थितीतून पुनर्प्राप्तीची क्षमता नाही, तर ती एक बहुआयामी आणि जटिल संकल्पना आहे. मानसशास्त्रज्ञ, समाजशास्त्रज्ञ आणि संशोधकांनी तिच्या प्रमुख प्रकारांना विविध श्रेणींमध्ये वर्गीकृत केले आहे ते.

१. शारीरिक लवचिकता
२. मानसिक लवचिकता
३. भावनिक लवचिकता
४. सामाजिक लवचिकता
५. सामुदायिक लवचिकता

इतर प्रकार: १.आर्थिक लवचिकता २. पर्यावरणीय लवचिकता

- **लवचिकतेच्या प्रमुख संकल्पना**

१. स्वयं-कार्यक्षमता २. संज्ञानात्मक मूल्यांकन आणि पुनर्रचना ३. भावनिक लवचिकता आणि धैर्य ४. कणखरता ५. चिकाटी

- **लवचिकतेचे प्रारूप - लवचिकतेच्या प्रारूप मागील दोन मुख्य दृष्टीकोन आहेत:**

१) चल-केंद्रित २) व्यक्ती-केंद्रित

- **किशोरवयीन मुलांवर लवचिकतेचे परिणाम करणारे घटक**

लवचिकता ही प्रकृती आणि पोषण यांच्यातील आंतरक्रियेतून विकसित होते, ज्याला आधार देणारे संबंध प्रोत्साहन देतात. लवचिकता संशोधनात पर्यावरणातील विविध आंतरक्रियात्मक घटकांचाही विचार केला जातो.

- **बाह्य जोखीम घटक :** कठीण स्वभाव ,निम्न बुद्धिमत्ता.

- **कौटुंबिक जोखीम घटक :** पालकांचे मनोविकार, बाल अत्याचार,पालकांचे विभक्त होणे,निम्न सामाजिक-आर्थिक स्थिती.

● **आंतरिक लवचिकतेचे घटक:**

आध्यात्मिक किंवा प्रेरक वैशिष्ट्ये,संज्ञानात्मक क्षमता, सामाजिक क्षमता,भावनिक स्थिरता आणि भावनिक व्यवस्थापन,शारीरिक कल्याण आणि शारीरिक क्षमता

साहित्य समीक्षा:

पूर्व संशोधनानुसार भावनिक बुद्धिमत्ता आणि लवचिकता यांच्यात प्रत्यक्ष संबंध आहे. आर्मस्ट्रॉंग, गॅलिंगन आणि क्रिचले (२०११) यांच्या मतानुसार, तणावपूर्ण परिस्थितीत भावनिकदृष्ट्या बुद्धिमान वर्तन हे अनुकूली असतेसॅलोवे आणि सहकाऱ्यांच्या (१९९९) सिद्धांतानुसार, उच्च भावनिक बुद्धिमत्ता असलेली व्यक्ती तणावाच्या भावनात्मक मागण्यांशी अधिक चांगल्या प्रकारे जुळवून घेते, कारण ती भावनांचे अचूक आकलन करू शकते आणि मनःस्थिती प्रभावीपणे नियंत्रित करू शकते. त्यामुळे, भावनिक स्व-जागरूकता, अभिव्यक्ती आणि व्यवस्थापन यांच्या माध्यमातून भावनिक बुद्धिमत्ता विपरीत घटनांचा प्रभाव कमी करते याव्यतिरिक्त, लवचिक व्यक्ती आशावादी आणि ऊर्जावान दृष्टिकोन ठेवणारी असते, तसेच ती उत्सुक आणि नवीन अनुभवांसाठी खुली असते (तुगडे आणि फ्रेडरिकसन, २००४). अशा लवचिक व्यक्ती विनोदाचा वापर, शिथिलीकरण तंत्रे आणि आशावादी विचारांनी त्यांच्या सकारात्मक भावनिकतेची जाणीवपूर्वक वाढ करतात. कामाच्या ठिकाणी केलेल्या संशोधनातही, कर्मचाऱ्यांची लवचिकता त्यांच्या कार्य-समाधान , प्रतिबद्धता आणि उत्कृष्ट कार्यप्रदर्शनाशी संबंधित असल्याचे सिद्ध झाले आहे (लुथन्स व इतर, २००५; युसूफ व लुथन्स, २००७).

पद्धती:

अ. उद्दिष्ट्ये :

- किशोरावस्थेतील विद्यार्थ्यांमध्ये लवचिकता आणि भावनिक बुद्धिमत्ता यामध्ये सहसंबंध अभ्यासणे.
- किशोरावस्थेतील विद्यार्थ्यांमध्ये लवचिकतेचा तुलनात्मक अभ्यास करणे.
- किशोरावस्थेतील विद्यार्थ्यांचे भावनिक बुद्धिमत्तेचा तुलनात्मक अभ्यास करणे.

आ. गृहितके

- किशोरावस्थेतील विद्यार्थ्यांमध्ये लवचिकता आणि भावनात्मक बुद्धिमत्ता यामध्ये कोणताही सहसंबंध नाही.
- मुलीच्या तुलनेत मुलामध्ये लवचिकता अधिक असण्याची शक्यता आहे.
- मुलाच्या तुलनेत मुलीमध्ये भावनात्मक बुद्धिमत्ता अधिक असण्याची शक्यता आहे.

इ. परिवर्तके

- परतंत्र परिवर्तके -भावनिक बुद्धिमत्ता ,लवचिकता
- स्वतंत्र परिवर्तके -महाविद्यालयीन विद्यार्थी,लिंग

निष्कर्ष आणि चर्चा :

टेबल क्र.१.- कीशोरातील भावनिक बुद्धिमत्ता आणि लवचिकता यांमधील सहसंबंध

परिवर्तक	भावनिक बुद्धिमत्ता
लवचिकता	०.६२

किशोरवस्थेतील लवचिकता आणि भावनिक बुद्धिमत्ता यांच्यातील संबंध ०.६२ (N = १०९) इतका आढळला. या निष्कर्षावरून असे दिसून येते की किशोरवस्थेतील लवचिकता आणि भावनिक बुद्धिमत्ता यांच्यात सकारात्मक संबंध आहे.या मूल्यांवरून हे स्पष्ट होते की जितकी लवचिकता जास्त, तितकी भावनिक बुद्धिमत्ता अधिक, काश्दान आणि रोटेनबर्ग यांनी २०१० मध्ये केलेल्या अभ्यासात लवचिकता आणि भावनिक बुद्धिमत्तेचे भावनिक नियंत्रण आणि कल्याण यासह विविध पैलू यांच्यातील संबंधांचा शोध घेतला त्यात लवचिकतेच्या मध्यक गुणांच्या आधारावर विषयांना कमी आणि अधिक लवचिक अशा दोन गटांमध्ये विभागले तेव्हा असे आढळून आले की ज्या किशोरवयीन मुलांची लवचिकता कमी होती, त्यांनी अधिक लवचिकता असलेल्या मुलांपेक्षा भावनिक नियंत्रणाच्या नुकसानीवर लक्षणीयरीत्या जास्त गुण मिळवले.

टेबल क्र.२.-किशोरवयीन मुले आणि मुली यांच्या लवचिकतेच्या तुलनात्मक अभ्यासासाठी केलेल्या टी-चाचणीचे मूल्य.

नमुना N	लिंग	लवचिकता		t-मूल्य	p-मूल्य
		सरासरी M	प्रमाण विचलन SD		
१००	मुले	१११.५९	१५.२३	२.५९	०.०४
१००	मुली	१३९.३६	१८.६६		

किशोरवयीन मुलीच्या लवचिकतेची सरासरी गुण=१३९.३६ प्रमाण विचलन SD=१८.६६ आहे. किशोरवयीन मुलाची सरासरी M=१११.५९ प्रमाण विचलन SD=१५.२३ आहे.p-मूल्य ०.०४ आहे या वरून असे सूचित होते की, मुले आणि मुली यांच्या लवचिकतेच्या पातळीत एक महत्त्वपूर्ण फरक दिसून आला.मुला पेक्षा मुलीमध्ये लवचिकता अधिक असल्याचे आढळून आले.

टेबल क्र.३-किशोरवयीन मुले आणि मुली यांच्या भावनिक बुद्धिमत्तेच्या तुलनात्मक अभ्यासासाठी केलेल्या टी-चाचणीचे मुल्य.

नमुना N	लिंग	भावनिक बुद्धिमत्ता		t-मूल्य	p-मूल्य
		सरासरी M	प्रमाण विचलन SD		
१००	मुले	१३६.२८	२.३३	४.२६	०.०००
१००	मुली	१०५.२४	४.६६		

किशोरवयीन मुले आणि मुली मधील भावनिक बुद्धिमत्तेची तुलना केली यात $t = ४.२६$, $p < ०.०१$ या गुणाकारावरून हे दिसून येते की किशोरवयीन मुलांमध्ये भावनिक बुद्धिमत्तेच्या बाबतीत महत्त्वपूर्ण लिंग-आधारित फरक दिसून येतो. सरासरी मूल्यांवरून असे दिसून येते की, मुलांच्या तुलनेत मुलींमध्ये भावनिक बुद्धिमत्ता अधिक अनुभवायला मिळते.

पटेल यांनी २०१५ मध्ये केलेल्या एका अभ्यासात, लिंग आणि निवास क्षेत्राच्या संदर्भात किशोरवयीन मुलांच्या भावनिक बुद्धिमत्ता आणि मानसिक कल्याणाचे अन्वेषण करण्यात आले. या अभ्यासात नमुना म्हणून १६० मुलांची निवड केली त्यात ४० मुले आणि ४० मुली याची निवड केली त्या पैकी ; ४० शहरी आणि ४० ग्रामीण किशोर होते निष्कर्षांवरून असे दिसून आले की, भावनिक बुद्धिमत्ता आणि मानसिक कल्याणाच्या संदर्भात मुले आणि मुली मध्ये महत्त्वपूर्ण फरक दिसून आला. भावनिक बुद्धिमत्ता आणि मानसिक कल्याणाच्या संदर्भात शहरी आणि ग्रामीण किशोरवयीन मुलांमध्येही महत्त्वपूर्ण फरक दिसून आला आहे. भावनिक बुद्धिमत्ता आणि मानसिक कल्याणाच्या संदर्भात लिंग आणि निवास क्षेत्र यांच्यातही महत्त्वपूर्ण आंतरक्रिया परिणाम दिसून आला आहे.

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कृत्रिम बुद्धिमत्ता आणि मानसशास्त्र

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सारांश:

कृत्रिम बुद्धिमत्ता (Artificial Intelligence – AI) आणि मानसशास्त्र हे आधुनिक विज्ञानातील दोन जलदगतीने विकसित होणारे शास्त्रविभाग आहेत. मानवाच्या विचारप्रक्रिया, वर्तन, भावना, निर्णयक्षमता आणि शिकण्याच्या पद्धती समजून घेण्यासाठी मानसशास्त्राचा वापर होतो, तर कृत्रिम बुद्धिमत्ता मानवी क्षमतांची संगणकीय अनुकरण प्रक्रिया तयार करण्याचा प्रयत्न करते. या दोन्ही शास्त्रांमध्ये परस्परपूरक नाते असून, मानसशास्त्रीय सिद्धांतांचा उपयोग करून बुद्धिमान प्रणाली अधिक मानवीसदृश, नैतिक आणि संवेदनशील बनवता येऊ शकतात. तसेच, कृत्रिम बुद्धिमत्ता आधारित मॉडेल्स मानसशास्त्रीय संशोधनात डेटा विश्लेषण, वर्तन भविष्यवाणी, भावनिक ओळख, मानसिक आरोग्य निदान आणि थेरपी यामध्ये नवीन संधी उपलब्ध करून देत आहेत. दुसरीकडे, कृत्रिम बुद्धिमत्तेच्या वाढत्या वापरामुळे गोपनीयता, पूर्वाग्रह, मानवी-यंत्र संबंध आणि भावनिक अवलंबित्व अशा मानसशास्त्रीय व नैतिक प्रश्नही उद्भवत आहेत. त्यामुळे कृत्रिम बुद्धिमत्ता आणि मानसशास्त्र यांचा अभ्यास एकत्रितपणे केल्यास अधिक मानवकेंद्रित, सुरक्षित आणि जबाबदार तंत्रज्ञान विकासास चालना मिळू शकते.

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प्रस्तावना:

मानवी मेंदू हे एक अतिशय गुंतागुंतीचे अद्भुत रसायन आहे. अनेक भावभावनांचं, स्वप्नांचं, विचारांचे, विश्लेषणात्मक बुद्धीचं, सार्पक्ष अनुभवांचं आणि या अनुभवांचे साहचर्य प्रस्थापित करणारे अद्भुत केंद्रस्थान म्हणजे मेंदू होय. मेंदूचे एक महत्त्वाचे वैशिष्ट्य म्हणजे बुद्धिमत्ता. 'बुद्धिमत्ता' हा एकमेव असा शब्द आहे की जो मानवाला अन्य सजीवांपासून वेगळा बनवितो. आजपर्यंत मानवाला बुद्धिमत्ता, बौद्धिक क्षमता, अंदाज बांधण्याची क्षमता, तर्कशक्ती आणि विश्लेषणाच्या ताकदीवरच जग जिंकणं शक्य झालं आहे. 21 व्या शतकातील पहिले 20 वर्षे संपतात तोवर मानवनिर्मित म्हणजे 'कृत्रिम बुद्धिमत्ता' असलेले संगणक आणि यंत्रमानव मानवाशीच स्पर्धा करू लागले आहेत. ही 'कृत्रिम बुद्धिमत्ता' विकसित केल्याने मानवजातीचा अंत होण्याची भीती जगप्रसिद्ध भौतिकशास्त्रज्ञ स्टीफन हॉकिंग आणि 'मायक्रोसॉफ्टचे संस्थापक बिल गेट्स यांनी व्यक्त केली आहे. 'कृत्रिम बुद्धिमते ची हि दुनिया रहस्यमयी आहे, अद्भुत आहे, तशीच ती भीतीदायक देखील आहे.

कृत्रिम बुद्धिमत्ता म्हणजेच Artificial Intelligence, ज्याला आपण कृत्रिम बुद्धिमत्ता म्हणतो, ही आजच्या युगातील सर्वात क्रांतिकारी तंत्रज्ञानांपैकी एक आहे. गेल्या काही दशकांपासून कृत्रिम बुद्धिमत्तेने आपल्या जीवनात प्रवेश केला आहे, आणि भविष्यात त्याचा प्रभाव आणखी वाढणार आहे. या तंत्रज्ञानाने केवळ वैज्ञानिक क्षेत्रातच नव्हे, तर मानवाच्या रोजच्या जीवनातही आमूलाग्र बदल घडवून आणले आहेत. स्मार्टफोनपासून ते स्वयंचलित वाहनांपर्यंत, कृत्रिम बुद्धिमत्तेचा वापर सर्वत्र दिसून येतो.

कृत्रिम बुद्धिमत्तेची वैशिष्ट्ये:

1. मानवी उणीवा आणि चुका दूर करून उत्पादकता वाढविले
2. निष्पक्ष निर्णय घेण्याची क्षमता
3. कोणत्याही व्यत्ययाशिवाय 24×7 कार्य करण्यास सक्षम
4. अचूक आणि जलदपणे कार्य करण्याची क्षमता
5. धोकादायक आणि प्रतिकूल परिस्थितीत काम करण्याची क्षमता
6. कंटाळा न करता पुनरावृत्ती कार्य करण्यास सक्षम

कृत्रिम बुद्धिमत्तेचा इतिहास:

मानवी बुद्धिमत्तेसारखे शिकण्याची क्षमता मशीन्समध्ये आणि त्या मशीनमधल्या सॉफ्टवेअर प्रोग्राम्समध्ये तयार करण्यासाठी वापरले जाणारे तंत्रज्ञान हे आर्टिफिशिअल इंटेलिजन्स म्हणजेच 'कृत्रिम बुद्धिमत्ता' माणसाच्या अचाट कल्पनाशक्तीचे आणि सातत्यपूर्ण प्रयोगशीलतेचे फलित आहे. 1943 मध्ये मॅकलॉक आणि पिट्स या संशोधकांनी मेंदूसारखे शिकणाऱ्या मेंदू-आधारित तंत्रज्ञानाची संकल्पना प्रस्तुत केली. आयझॅक आसिमोव्ह यांनी 1950 मध्ये 'आय रोबोट' कादंबरीत रोबोटिक तंत्रज्ञानाचा वेध घेतला होता. त्याच वेळी एलन ट्यूरिंग या संशोधकाने आपल्या 'कॉम्प्युटिंग मशीनरी अँड इंटेलिजन्स' या पहिल्या शोध निबंधामध्ये यंत्राची बौद्धिक कुवत आजमावून पाहणाऱ्या 'ट्यूरिंग टेस्ट'ची संकल्पना मांडलेली आढळते.

जॉन मॅकार्थी यांनी 1955 मध्ये 'कृत्रिम बुद्धिमत्ता' ही संकल्पना सर्वप्रथम जगासमोर मांडली. बुद्धिमान यंत्रे बनविण्यासाठी विज्ञान-तंत्रज्ञान आणि अभियांत्रिकीचा वापर करणे, अशी या कृत्रिम बुद्धिमत्तेची व्याख्या केली होती. कृत्रिम बुद्धिमत्तेच्या विकासाला खऱ्या अर्थाने चालना मिळण्यासाठी 1956 पर्यंत थांबावं लागलं. जैफ्री हिंटन यांना कृत्रिम बुद्धिमत्तेचे गॉड फादर म्हणून ओळखले जाते त्यांनी 1970 मध्ये केब्रिजमधून प्रायोगिक मानसशास्त्रात बीएची पदवी प्राप्त केली. आणि 1978 मध्ये त्यांनी कृत्रिम बुद्धिमत्ता या विषयात पीएचडी पदवी घेतली. यानंतर जेफ्री हिंटन यांनी अनेक विद्यापीठांमध्ये काम केलेले आहे. नंतर 'डार्टमाऊथ कॉन्फरन्स' मध्ये जगभरातील संशोधकांनी कृत्रिम बुद्धिमत्तेच्या विकासावर अधिक लक्ष केंद्रित



करण्याचा संकल्प केला. 'आयबीएम'ने तयार केलेल्या 'डीप ब्ल्यू कॉम्प्युटरने 1996 मध्ये जागतिक कीर्तीचा बुद्धिबळपटू गॅरी कास्पारोव्हना पराभूत केल्यानंतर कृत्रिम बुद्धिमत्ता या तंत्रज्ञानामध्येही कामाचे असल्याचं दिसून आलं.

कृत्रिम बुद्धिमत्ता आणि मानसशास्त्र:

आधुनिक जगात कृत्रिम बुद्धिमत्ता (Artificial Intelligence – AI) हे तंत्रज्ञान सर्वात वेगाने विकसित होणारे क्षेत्र मानले जाते. त्याच वेळी, मानवी मन, वर्तन, भावना आणि बोधनिक प्रक्रियेचा अभ्यास करणारे मानसशास्त्र (Psychology) हे मानवकेंद्रित विज्ञान आहे. प्रथमदर्शनी ही दोन्ही क्षेत्रे परस्परापासून भिन्न वाटतात; परंतु प्रत्यक्षात पाहिले तर त्यांचा परस्परसंबंध अत्यंत सखोल आणि अनिवार्य आहे. कृत्रिम बुद्धिमत्ता हे मूलतः “मानवी बुद्धिमत्तेचे यांत्रिकीकरण” करण्याचा प्रयत्न आहे, तर मानसशास्त्र हे “मानवी बुद्धिमत्ता कशी कार्य करते?” या प्रश्नाचे उत्तर शोधण्याचे विज्ञान आहे. म्हणूनच कृत्रिम बुद्धिमत्ता आणि मानसशास्त्र ही दोन्ही क्षेत्रे आज परस्परपूरक बनली आहेत.

मानसशास्त्र आणि कृत्रिम बुद्धिमत्ता या दोन्ही क्षेत्रांची मुळे मानवी बोधनिक प्रक्रियेच्या अभ्यासात आहेत. १९५० पासून बोधनिक मानसशास्त्र आणि कृत्रिम बुद्धिमत्ता या दोन्ही क्षेत्रांची प्रगती समांतरपणे घडत आली. मानसशास्त्रात मांडलेल्या सिद्धांतांवर आधारित गणितीय व संगणकीय मॉडेल्स वापरून कृत्रिम बुद्धिमत्ता प्रणाली विकसित केल्या गेल्या.

उदा.

न्यूरल नेटवर्क्स- हे मानवी मेंदूतील न्यूरॉन्सच्या जैविक रचनेवर आधारित आहेत.

समस्या सोडविण्याची प्रक्रिया (Problem Solving Models) - ही हर्बर्ट सायमन यांचे मानसशास्त्रीय मॉडेल अनुकरण करत विकसित झाली.

मानवी स्मरणशक्तीचे मॉडेल (Memory Models)- कृत्रिम बुद्धिमत्तेमधील माहिती साठवण व जलद पुनर्प्राप्ती प्रणालींना आधार देतात.

अवधानाची मानसशास्त्रीय तत्त्वे - मशीन लर्निंग मॉडेल्सची पायाभरणी करतात.

या सर्व प्रक्रियांवरून स्पष्ट होते की कृत्रिम बुद्धिमत्तेचे तर्कशास्त्र व मानसशास्त्रीय संकल्पनांवर आधारित असून मानसशास्त्र कृत्रिम बुद्धिमत्तेच्या प्रगतीसाठी अनिवार्य आहे.

कृत्रिम बुद्धिमत्ता आणि बोधनिक मानसशास्त्र:

बोधनिक प्रक्रिया म्हणजे माहिती ग्रहण करणे, प्रक्रिया करणे, निर्णय घेणे आणि त्यानुसार वर्तन करणे. AI मधील मॉडेल्स सुद्धा ह्याच प्रक्रियेची अनुकरणे आहेत.

१. अवधान (Attention) आणि कृत्रिम बुद्धिमत्ता

मानव एखादी माहिती निवडतो, त्यावर लक्ष केंद्रित करतो आणि इतर माहिती वगळतो. कृत्रिम बुद्धिमत्तेमधील Attention Mechanisms हीच प्रक्रिया अनुकरण करतात. आधुनिक भाषिक मॉडेल्स, प्रतिकृती कृत्रिम बुद्धिमत्ता आणि सर्च इंजिन्स या पद्धतीचा मोठ्या प्रमाणावर वापर करतात.

२. अध्ययन (Learning)

मानसशास्त्रात शिकणे म्हणजे अनुभवातून वर्तन किंवा ज्ञानात होणारे बदल. मशीन लर्निंगही डेटा आणि अनुभवातून पॅटर्न शोधते आणि आपल्या कामगिरीत सुधारणा करते.

३. स्मृती (Memory)

मानवाची अल्पकालीन (Short-term) आणि दीर्घकालीन (Long-term) स्मृतीची तुलना कृत्रिम बुद्धिमत्तेमधील डेटा स्टोरेज आर्किटेक्चरशी करता येते.

४. निर्णयप्रक्रिया (Decision-making)

मानव भावनिक, सामाजिक व तर्कशुद्ध घटकांचा विचार करून निर्णय घेतो. कृत्रिम बुद्धिमत्तेचे विश्लेषण, प्रॉबॅबिलिटी आणि मॉडेल्स वापरून तर्काधिष्ठित निर्णय देते. मानसशास्त्र निर्णयप्रक्रियेतील चुका, पूर्वग्रह (Biases) आणि भावनिक घटकांचा अभ्यास करते, जे कृत्रिम बुद्धिमत्तेला अधिक “मानवीसदृश” बनवण्यासाठी हे महत्त्वाचे आहेत.

वर्तनवादी मानसशास्त्र (Behaviorism) आणि रिइन्फोर्समेंट लर्निंग:

वर्तनवादी मानसशास्त्रानुसार (Skinner, Pavlov), जीव ‘उत्तेजन-प्रतिक्रिया’ (Stimulus-Response) आणि “बक्षीस-दंड” (Reward-Punishment) यांच्या आधारे शिकतो. कृत्रिम बुद्धिमत्तेमधील Reinforcement Learning (RL) हे अगदी ह्याच तत्त्वावर कार्य करते. हे मानवी शिकण्याच्या मूलभूत तत्त्वांचे यांत्रिकीकरण आहे. उदा.,

- रोबोट योग्य कृती केल्यास पॉझिटिव्ह रिवार्ड
- चुकीसाठी निगेटिव्ह रिवार्ड
- कालांतराने रोबोट सर्वोत्तम कृती शिकतो

भावनिक मानसशास्त्र आणि अफेक्टिव्ह कम्प्युटिंग:

मानवाला पूर्णपणे समजून घेण्यासाठी भावना हे सर्वात महत्त्वाचे घटक आहेत. कृत्रिम बुद्धिमत्तेमध्ये भावना समजून घेणाऱ्या तंत्रज्ञानाला अफेक्टिव्ह कम्प्युटिंग म्हटले जाते.

कृत्रिम बुद्धिमत्ता भावना कशा ओळखते?

- चेहऱ्यावरील भाव (Facial Recognition)
- आवाजातील बदल (Voice Analysis)
- भाषेतील भावनिक शब्द (Sentiment Analysis)
- हृदयगती किंवा शारीरिक संकेत

यामुळे कृत्रिम बुद्धिमत्ता आता तर्काधिष्ठितच नाही तर भावनिक संदर्भही समजू शकते. ग्राहकसेवा, रोबोटिक साथीदार, शिक्षण आणि थेरपीमध्ये याचा व्यापक वापर वाढत आहे.

मानसिक आरोग्यात कृत्रिम बुद्धिमत्तेचे क्रांतिकारक योगदान:

मानसिक ताण, नैराश्य, चिंता आणि भावनिक समस्या जगभरात वाढत आहेत. मानसोपचारतज्ञांची कमतरता लक्षात घेता कृत्रिम बुद्धिमत्ता आधारित मानसिक आरोग्यसेवा देखील काही ठिकाणी सुरू झाली आहे.

कृत्रिम बुद्धिमत्ता आधारित मानसिक आरोग्य उपयोजन

- चॅटबॉट थेरपी – प्राथमिक भावनिक आधार देणारे सहानुभूतीपूर्ण बॉट्स
- डिप्रेशन/एन्क्झायटी ओळख – भाषेतील टोन, शब्द, चेहऱ्यावरील भाव
- डेटा-आधारित थेरपी प्लॅन – रुग्णाच्या वर्तनातील बदलांचे विश्लेषण
- २४x७ उपलब्धता – कठिन परिस्थितीत तत्काळ मदत

आज आरोग्यसेवा सुधारण्यासाठी तंत्रज्ञानाचा विकास होण्याची गरज आहे. मानसिक आरोग्याच्या बाबतीत फेसबुक मैसेंजरवर 'वूबॉट (Woebot)' नावाचा एक चॅटबॉट आहे, तो लोकांच्या भावना आणि त्यांच्या वागणुकीचे पॅटर्न्स ओळखून 'कॉग्निटिव्ह बिहेवियरल थेरेपी (CBT)' ची पद्धत वापरून त्यांचे प्रश्न सोडवण्याचे प्रयत्न करतो. याकरता वूबॉट यूजरला काही सोपे प्रश्न विचारतो आणि मिळणाऱ्या उत्तरावरून वूबॉट त्याला काही व्हीडिओज /ऑडिओजच्या लिंक्स किंवा काही इतर खेळ किंवा कृती सुचवतो. स्टॅनफर्ड विद्यापीठात 'नैराश्य (डिप्रेशन)' आलेल्या माणसांवर या चॅटबॉटचा काय परिणाम होतो यावर संशोधन करण्यात आलं. त्यावेळी बहुतेकांना त्याचा फायदा झाला होता हे लक्षात आलं. वूबॉटबद्दल अनेकांना कृतज्ञता वाटत होती आणि तो त्यांना त्यांचा मित्रच वाटत होता. अर्थात, याला अपवाद होतेच. काही काळात हे चॅटबॉट्स आणखीन जास्त प्रगत होतील, आणि मनोरुग्णांशी जास्त चांगल्या तन्हेनं संभाषण करून त्यांना मनोविकारांमधून बाहेर पडायला मदत

करू शकतील. या चर्चेतून जर चॅटबॉटला परिस्थिती गंभीर आहे असं लक्षात आल तर मनोविकारतज्ज्ञाची अपॉइंटमेंट घ्यायचीही तो चॅटबॉट सूचना देईल.

हेच इतरही विकारांच्या बाबतीत होऊ शकेल. आतापर्यंत 'एक्स्पर्ट सिस्टिम' डायग्नोसिस (निदान) करायला मदत करत होत्या. आता या चॅटबॉट्समध्येच अशा शेकडो विकारांच्या 'डायग्नोसिसचे नियम (रूल्स)' असतील, आणि त्यामुळे खूप सौम्य/मध्यम विकारांचं निदान चॅटबॉट्सच करतील आणि परिस्थिती गंभीर वाटली तर मात्र ते आपली डॉक्टरशी अपॉइंटमेंट फिक्स करतील. यामध्ये प्रत्येकाचं 'हेल्थ रेकॉर्ड' सुरक्षितपणे क्लाऊडवर ठेवलं जाईल. त्यामुळे कुठल्याही डॉक्टरकडे गेलं की पासवर्ड वापरून त्यालाही ते वाचता येईल.

कृत्रिम बुद्धिमत्ता हे मानसशास्त्रातील निदान तत्वांचे अनुसरण करते, तर मानसशास्त्र कृत्रिम बुद्धिमत्तेला बोधात्मक व भावनिक निकष समजावून देते.

मानव-मशीन परस्परसंवाद (HCI) आणि मानसशास्त्र:

कृत्रिम बुद्धिमत्ता माणसाशी ज्या पद्धतीने संवाद साधते, तो संवाद किती प्रभावी आहे हे मानसशास्त्रावर अवलंबून असते. जसे की:

- विश्वास निर्माण करणे (Trust Building)
- सहानुभूतीपूर्ण भाषा
- सांस्कृतिक संदर्भ समजून घेतलेला संवाद
- वापरकर्त्यांच्या सवयी आणि वर्तन पॅटर्नशी सुसंगत प्रतिसाद

यामुळे कृत्रिम बुद्धिमत्ता अधिक मानवीकेंद्रित बनते.

नैतिक प्रश्न / कृत्रिम बुद्धिमत्तेचे मानसशास्त्रासंबंधी तोटे:

कृत्रिम बुद्धिमत्ता आणि मानसशास्त्राच्या संयोगामुळे अनेक नैतिक प्रश्न देखाल निर्माण होत आहेत.

१. गोपनीयतेचा प्रश्न (Privacy Issues)

मानसिक आरोग्याशी संबंधित डेटा अत्यंत संवेदनशील असतो. चुकीच्या हातात गेल्यास व्यक्तीचे नुकसान होऊ शकते.

२. बायस (Bias)

पक्षपाती डेटामुळे कृत्रिम बुद्धिमत्तेचे निर्णयही पक्षपाती होऊ शकतात. हे मानसशास्त्रीय, सामाजिक आणि राजकीय स्तरावर धोके निर्माण करते.

३. भावनिक नियंत्रण (Manipulation)

व्यक्तींच्या भावनांचा अभ्यास करून त्यांच्यावर प्रभाव टाकणे—जाहिरात, राजकीय मोहीम—ही धोकादायक बाब आहे.

४. सामाजिक एकाकीपणा

व्यक्ती कृत्रिम बुद्धिमत्ता साथीदारांवर अवलंबून राहिल्यास प्रत्यक्ष मानवी नातेसंबंध कमी होऊ शकतात.

५. नोकऱ्यांचा प्रश्न

थेरपी, काउन्सेलिंग, वर्तनांचे विश्लेषण करणाऱ्या काही नोकऱ्या कृत्रिम बुद्धिमत्तेमुळे बदलू शकतात. या समस्यांना तोंड देण्यासाठी नैतिक मानसशास्त्र अत्यंत आवश्यक आहे.

भविष्याचा वेध : कृत्रिम बुद्धिमत्ता आणि मानसशास्त्राचा समन्वय

येणाऱ्या दशकात कृत्रिम बुद्धिमत्ता आणि मानसशास्त्राचा संगम समाजातील प्रत्येक क्षेत्र बदलणार आहे.

१. भावनिकदृष्ट्या बुद्धिमान कृत्रिम बुद्धिमत्ता प्रणाली - ज्या मानवी भावना समजून योग्य प्रतिसाद देतील.
२. वैयक्तिकृत शिक्षण प्रणाली - विद्यार्थ्यांच्या मानसिक क्षमता, लक्ष पातळी आणि शिकण्याच्या शैलीनुसार अभ्यासक्रम बदलू शकतो.
३. मेंदू-मशीन इंटरफेस - मानसिक विकारांचे निदान आणि उपचार अधिक अचूक होऊ शकतात.
४. सामाजिक व्यवस्थापन - मानवी वर्तन व सामाजिक पॅटर्न समजून गुन्हेगारी, आरोग्य, वाहतूक यांचे चांगले व्यवस्थापन.
५. रोबोटिक थेरेपिस्ट - वाढत्या मानसिक आरोग्याच्या समस्यांना मदत करणारे कृत्रिम बुद्धिमत्तेवर आधारित भावनिक साथीदार.

निष्कर्ष:

कृत्रिम बुद्धिमत्ता आणि मानसशास्त्र ही दोन क्षेत्रे मानवी विचार, भावना आणि निर्णयप्रक्रियेचा अभ्यास करणारी आहेत—एक वैज्ञानिक, तर दुसरे तांत्रिक पद्धतीने. या दोघांचा संयोग मानवजातीसाठी अभूतपूर्व संधी निर्माण करतो. व्यावहारिकदृष्ट्या AI मानसशास्त्राला नवीन संशोधन साधने देते, तर मानसशास्त्र कृत्रिम बुद्धिमत्तेला मानवीसदृश बुद्धिमत्ता, भावना आणि नैतिकता प्रदान करते.

या संयोगाचा फायदा समाजाच्या सर्व स्तरांना मिळू शकतो—शिक्षण, आरोग्य, सामाजिक समता, न्यायव्यवस्था आणि मानवी कल्याण. परंतु या प्रगतीसोबत गोपनीयता, नैतिकता आणि मानवी मूल्यांचे रक्षण हे अत्यंत आवश्यक ठरते. कृत्रिम बुद्धिमत्ता आणि मानसशास्त्राचा संगम जितका सामर्थ्यशाली तितकाच संवेदनशील आहे. म्हणूनच भविष्यातील कृत्रिम बुद्धिमत्ता ही “मानवकेंद्रित, नैतिक आणि भावनिकदृष्ट्या सजग” असणे ही काळाची गरज आहे.

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परीक्षांना सामोरे जाताना मानसशास्त्रीय ज्ञानाचे उपयोजन

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प्रस्तावना :

बारावीची परीक्षा नुकतीच सुरु होत असून ही परीक्षा म्हणजे प्रत्येक विद्यार्थ्यांच्या शैक्षणिक आयुष्यातील महत्वाचा टप्पा असतो. या परीक्षेपूर्वी शाळा, खाजगी शिकवण्या, अभ्यासिकामधून मिळालेले मार्गदर्शन महत्वाचे ठरते. साहजिकच घराघरात सध्या अभ्यासाचे वातावरण निर्माण झाले आहे. आणि परीक्षा म्हणजेच प्रत्येक विद्यार्थ्यांच्या मनावर आलेले ते एक दडपण असते. परीक्षेचे कोणत्याही प्रकारचे दडपण न घेता सामोरे जाणे आवश्यक असते. परीक्षेपूर्वी दडपण आल्यामुळे विद्यार्थी हे अपेक्षित कामगिरी करू शकत नाहीत. त्यांच्या मनात परीक्षेविषयी वाटणारी भीती चिंता ताण तणाव दडपण दूर करण्यासाठी मानसशास्त्रीय ज्ञानाचे उपयोजन नक्कीच अनमोल ठरणार आहे. आपण वर्तमानपत्रात बातम्या यांसारख्या प्रसार माध्यमांद्वारे सतत ऐकत असतो, कि परीक्षेत नापास झाल्यामुळे एका विद्यार्थ्याची आत्महत्या किंवा परीक्षेत कमी गुण मिळाल्यामुळे घर सोडून निघून जाणे, यांसारख्या घटनेला विद्यार्थी सतत बळी पडत असतात. विद्यार्थ्यांच्या मनातील याच शंकांचे निरसन किंवा परीक्षेबद्दल त्यांच्या मनात असलेली भीती दूर करण्यासाठी मानसशास्त्रीय ज्ञानाच्या आधारे त्यांना मार्गदर्शन नक्कीच करता येणार आहे. मानसशास्त्र हे आज प्रत्येक क्षेत्रात आपली भूमिका बजावत आहे. तसेच मानसशास्त्रीय ज्ञानाचे उपयोजन ही संकल्पना खूप व्यापक झाली आहे. आपण पाहतो कि मानसशास्त्राच्या शाखा या प्रत्येक क्षेत्रात विद्यार्थ्यांना, व्यावसायिकांना, संशोधकांना चांगल्या प्रकारे मार्गदर्शन करत आहे. योग्य दिशा देत आहेत, विद्यार्थ्यांच्या बौद्धिक क्षमतेनुसार त्यांना अभ्यास कसा करावा, वाचलेले किंवा केलेला अभ्यास कसा लक्षात ठेवावा यासाठी काही तंत्रे नेहमीच सुचवीत असते. म्हणूनच परीक्षेस सामोरे जाताना मानसशास्त्रीय ज्ञानाचे उपयोजन हे नक्कीच योगदान असणार आहे

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● संशोधनाची उद्दिष्ट्ये :

- १) मानसशास्त्र हे उपयोजनात्मक शास्त्र म्हणून समजावून घेणे.
- २) परीक्षांना सामोरे जाताना मानसशास्त्रीय ज्ञानाचे उपयोजन जाणून घेणे.

● **संशोधनाचे महत्व :-**

प्रस्तुत संशोधन हे परीक्षांना सामोरे जाताना मानसशास्त्रीय ज्ञानाचे उपयोजन व महत्व यांवरील संबंधावर आधारित आहे. प्रस्तुत संशोधनातून विद्यार्थ्यांच्या परीक्षेबाबत असणाऱ्या समस्या, दडपण त्यांची पूर्तता तसेच केलेले अध्ययन लक्षात कसे ठेवता येईल, किंवा त्यासाठी तंत्रे कोणते वापता येतील, कोणतेही दडपण न ठेवता परीक्षेला कसे सामोरे जाता येईल, ते या संशोधनाद्वारे लक्षात येईल. या संशोधनातून विद्यार्थ्यांच्या गरजा, त्या गरजांची पूर्तता, वाचन कौशल्य, वाचनाची गती, परिणामकारक वेळेचे नियोजन, प्रत्यक्ष परीक्षा देण्याचे कौशल्य कसे विकसित करता येईल, हे या संशोधनातून लक्षात येईल. प्रस्तुत संशोधनाचे फायदा शिक्षक, विद्यार्थी, संशोधक, व्यावसायिक, नोकरदार, पत्रकार या सर्वांनाच होईल.

● **संशोधन पद्धती :**

प्रस्तुत संशोधनाचा विषय परीक्षांना सामोरे जाताना मानसशास्त्रीय ज्ञानाचे उपयोजन असून प्रस्तुत संशोधन हे चिंतनात्मक स्वरूपाचे असून त्यासाठी वर्णनात्मक पद्धतीचा वापर केला आहे. प्रस्तुत संशोधनासाठी कोणत्याही प्राथमिक साधनांचा वापर केलेला नसून दुय्यम माहिती संकलन साधनांचा वापर केला आहे. त्यासाठी विविध संदर्भ ग्रंथ, प्रकाशित साहित्य, इंटरनेट, संशोधन साहित्याचा आधार घेऊन परीक्षेस सामोरे जाताना मानसशास्त्रीय ज्ञानाचे उपयोजन, योगदान स्पष्ट केले आहे.

उद्दिष्ट्ये क्रमांक-१

मानसशास्त्र हे उपयोजनात्मक शास्त्र म्हणून समजावून घेणे.

प्राचीन काळी 'मानसशास्त्र हे आत्म्याचे शास्त्र आहे' असा समाज होता. मानसशास्त्रासाठी 'Psychology' हा शब्द वापरला जातो. ग्रीक भाषेतील 'Psyche' आणि 'Logos' या दोन शब्दांपासून 'Psychology' हा शब्द निर्माण झाला. Psyche याचा अर्थ 'आत्मा' असून 'Logos' याचा अर्थ 'विज्ञान' असा आहे. म्हणून आत्म्याच्या विज्ञानाला 'मानसशास्त्र' म्हटले गेले, परंतु मानसशास्त्रामध्ये महत्वाचा समजलेला 'आत्मा' हा विषय अमूर्त व अदृश्य होता. तसेच त्याची अभ्यासपद्धती तर्कशुद्ध किंवा शास्त्रीय स्वरूपाची नव्हती. त्यामुळे मानसशास्त्रज्ञांनी विचार भावना स्मरण कल्पना यांना मानवाची मानसिक कार्ये असे म्हणण्यास प्रारंभ केला. व मानसशास्त्र हे मनाचे शास्त्र आहे अशी व्याख्या करण्यात आली. विल्यम वूट आणि त्यांच्या सहकार्यांनी मानवाच्या वेदना किंवा व्यक्तीला होणाऱ्या परिस्थितीच्या जाणीवेचा वस्तुनिष्ठ पद्धतीने प्रयोग शाळेत अभ्यास करण्यास प्रारंभ केला. त्यावेळेस मानवाला त्याच्या वेदना प्राप्त होणाऱ्या इंद्रियांच्यामार्फत मिळणारा अनुभव हा मानवाच्या वर्तनाचा मुलभूत व महत्वाचा घटक आहे असे त्यांनी मानले. मनुष्यांच्या वेदनांचे किंवा जाणीवयुक्त अनुभवांचे



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नियंत्रित निरीक्षण करण्याची योजना करून त्यांचे मापन कार्याकरिता साधने निर्माण केली. त्यामुळे मानसशास्त्राला 'जाणीवपूर्वक अनुभवांचे शास्त्र' समाजण्यात येऊ लागले. व आजची मानसशास्त्राची नवीन व्याख्या निर्माण झाली. आज मानसशास्त्राच्या शाखा विविध आहेत. जैविक मानसशास्त्र, विकासात्मक मानसशास्त्र, अपसामान्य मानसशास्त्र, शरीर मानसशास्त्र, सामान्य मानसशास्त्र, बाल मानसशास्त्र, प्रयोगात्मक मानसशास्त्र, सामाजिक मानसशास्त्र, परामानसशास्त्र, चिकित्सा आणि सहमंत्रण मानसशास्त्र, औद्योगिक संघटन मानसशास्त्र, आणि मानवी अभियांत्रिकी मानसशास्त्र आणि शैक्षणिक मानसशास्त्र इ. शाखा आज मोठ्या प्रमाणात कार्यरत आहेत. त्यापैकी शैक्षणिक मानसशास्त्रज्ञानी जी अनेक संशोधने केली त्यात शिक्षणातील संशोधनांचेही महत्वपूर्ण योगदान आहे. मुलांच्या सर्वांगीण विकासाशी निगडित असलेली मानसशास्त्रीय तत्वे शिक्षकास माहिती असल्याशिवाय ये यशस्वी होऊ शकत नाहीत. शिक्षणविषयक सर्व अंगांमध्ये कशी सुधारणा घडवून आणता येईल, त्याशिवाय शिक्षणामध्ये शिक्षक-विद्यार्थी आणि ज्या गोष्टींना अनुसरून शिक्षण घ्यायचे त्या गोष्टी शिक्षण प्रक्रियेचे स्वरूप व शिकविण्याच्या पद्धतींचा एकूण शिक्षणप्रक्रियेत कसा व्यावहारिक उपयोग करता येईल यासंबंधीचा विचार या शाखेत केला जातो. अध्ययनाच्या संदर्भात विद्यार्थ्यांना पडणारे चिकित्सक व जीज्ञासुवृत्तीचे पाउल पाहून शैक्षणिक मानसशास्त्रज्ञ प्रत्येक विद्यार्थ्यांच्या निर्वर्तनात सुधारणा करण्याचा प्रयत्न करत असतात. विद्यार्थी -शिक्षक – पालक या त्रीसुत्रीना योग्य मार्गदर्शन करून विद्यार्थ्यांच्या संपादनात वाढ कशी करता येईल याचा नेहमी प्रयत्न करत असतात. विशेषतः शैक्षणिक मानसशास्त्र शाळेतील अध्ययनाची कार्यक्षमता कशी वाढविता येईल. त्यासाठीच्या अभ्यासक्रमामध्ये अध्ययनाविषयी मानसशास्त्रीय ज्ञानाचा अवलंब कसा करता येईल, प्रेरणा देऊन मुलांना प्रवृत्त कसे करता येईल इ. विषयाचे नवनवीन उपक्रम शैक्षणिक मानसशास्त्रज्ञ राबवीत असतात. त्यांचा सर्व दृष्टीकोनातून सर्वांगीण विकास घडवून आणण्याचा त्यांचा मानस असतो. उदा. विद्यार्थी नापास का होतो ? त्यांची मानसशास्त्रीय कारणे कोणती आहेत ? इ. अनेक महत्वपूर्ण समस्यांचा उहापोह करून ' अभ्यास कौशल्याचे प्रशिक्षण देऊन एका विद्यार्थ्याबरोबर संपूर्ण शाळेचा, महाविद्यालयाचा, व शैक्षणिक संस्थांचा गुणात्मक विकास घडवून आणण्यात त्यांची महत्वपूर्ण भूमिका असते. शाळा मानसशास्त्राचा शैक्षणिक मानसशास्त्रामध्ये सामावेश होतो. शाळेतील विद्यार्थ्यांच्या वार्तनिक समस्यांचे निराकरण करण्यासाठी शाळा मानसशास्त्रज्ञ आपली सेवा देतात. अध्ययन, सामाजिक संबंध, चाचण्या, हिंसा अस्वीकृती इ. सारख्या शालेय जीवनामध्ये निर्माण होणाऱ्या घटकाशी शाळा मानसशास्त्रज्ञांचा संबंध येतो. अध्ययनावर असलेल्या अडचणीवर मात करून त्यावर उपाय सुचविणे हे प्रमुख कार्य शाळा मानसशास्त्रज्ञांचे असते. वाचनवेग वाढविण्यासाठी ते उपाय सुचवितात, तर काहीजण व्यवसाय व अन्य बाबतीत मार्गदर्शन करतात. त्यांना शाळा सहमंत्रक असेही म्हणतात. आजकाल प्रत्येक शाळेमध्ये शैक्षणिक मानसशास्त्रज्ञ अध्ययन आणि अध्यापन पद्धतींच्या संदर्भात मानसशास्त्रीय तत्वांचा अवलंब करीत असतात. अध्ययन व अध्यापन पद्धतीद्वारे

गुणात्मक विकास घडवून आणणाऱ्या या शास्त्रास शैक्षणिक मानसशास्त्र म्हणतात. म्हणून मानसशास्त्र हे उपयोजनात्मक शास्त्र आहे.

उद्दिष्ट्ये क्रमांक :- २

परीक्षांना सामोरे जाताना मानसशास्त्रीय ज्ञानाचे उपयोजन जाणून घेणे.

मानसशास्त्र हे एक उपयोजनात्मक शास्त्र असून परीक्षेला सामोरे जात असताना काही तंत्रे वापल्यामुळे परिणामकारक अध्ययन घडून येते आणि वेळेचे नियोजन चांगल्या प्रकारे घडून येते. तुम्ही शालेय शिक्षण यशस्वीरीत्या पूर्ण करून महाविद्यालयीन जीवनात प्रवेश केला तेव्हा पूर्वीच्या अभ्यासाच्या काही सदोष सवयी बाजूला सारून तुम्हाला अभ्यासाची नवीन आणि प्रभावी पद्धत आत्मसात करावी लागणार आहे. त्यासाठी शैक्षणिक निर्वर्तन अधीक चांगले करण्यासाठी काही कौशल्यांच्या विकासावर लक्ष केंद्रित केले जाते.

● **वेळेचे परिणामकारक व्यवस्थापन :**

वेळेचे सुयोग्य आणि परिणामकारक व्यवस्थापन करणे खूप गरजेचे असते. अभ्यास कधी करायचा, किती वेळ करायचा, याबरोबरच मनोरंजनासाठी किती वेळ द्यायचा यासंबंधीचा विचार करणे अपेक्षित आहे. ती मार्गदर्शक तत्वे पुढीलप्रमाणे आहेत.

● **लेखी वेळापत्रक तयार करा**

कोणत्या गोष्टीसाठी नेमकी किती वेळ द्यायचा हे तुम्ही वेळापत्रक तयार करताना ठरवू शकता याचा एक फायदा कि तुमच्या अभ्यासाविषयीची बांधिलकी वाढते वेळापत्रक तयार करण्यासाठी तुमचा दिनक्रम तुमच्या डोळ्यासमोर असणे आवश्यक आहे सकाळी उठल्यापासून ते झोपेपर्यंत तुम्ही काय काय करता कोणत्या वेळेला तुम्हाला थकल्यासारखे वाटते अथवा कंटाळा येतो तुमच्या इतर जबाबदाऱ्या काय आहे याची सविस्तर नोंद करा एखादी आवडीची आनंददायी कृती करण्यापूर्वी समजावयास कठीण वाटतो अशा विषयाच्या अभ्यासाची योजना करा येथे अभ्यास केल्याबद्दलचे बक्षीस म्हणून या कृतीचा वापर करू शकतात.

● **तुमच्या कामाची क्रमावली तयार करा**

बहुतेक विद्यार्थ्यांची कठीण अभ्यासविषय पुढे ढकलण्याची सवय असते यामुळे होते काय कि हे विद्यार्थी परीक्षा जवळ येईपर्यंत फक्त सोप्या विषयांचा अभ्यासात वेळ घालवतात आणि जो विषय समजावयास कठीण आहे आणि त्याच्या अभ्यासासाठी जास्त वेळ द्यायची गरज आहे तो विषय मात्र शेवटपर्यंत अभ्यासासाठी राखून ठेवतात याचा त्यांच्या

परीक्षेतील गुणांवर परिणाम झाल्याशिवाय राहत नाही. स्वतःलाच प्रश्न विचारा 'सर्वात महत्वाचा आणि कठीण असा कोणता विषय आहे' त्याचा अभ्यास आधी पूर्ण करा त्याखालोखालचा महत्वाचा विषय त्यानंतर अभ्यासासाठी घ्या. अशा पद्धतीने परीक्षेआधी उजळणी करण्यास आवश्यक तेवढा वेळ ठेऊन सर्व विषयाचा अभ्यास पूर्ण करा.

● **मोठ्या अभ्यास पाठाचे लहान भागामध्ये विभाजन करा**

काही पाठ मोठे असतात त्यामुळे एकाच बैठकीत त्याचा अभ्यास करणे शक्य नसते अशा पाठाचे छोट्या भागात विभाजन करा वास्तवतेचे भान ठेऊन प्रत्येक भागासाठी किती वेळ लागेल हे ठरवा यासाठी दरदिवशी किती पाने वाचणार आहात किंवा कोणत्या मुद्द्यांचा अभ्यास करणार आहात याचे नियोजन करू शकता. प्रत्येक भाग ठरविल्याप्रमाणे पूर्ण करणे हे तुमाच्यासाठी एक प्रकारचे बक्षिसच असेल त्यामुळे तुमची अभ्यास कौशल्ये अधिक दृढ होतात. विषयावर प्रभुत्व संपादन केल्याची भावना तुमच्यात रुजेल आणि पुढील अभ्यासासाठी तुमचा हुरूप वाढेल.

● **परिणामकारक अभ्यास कौशल्ये**

एकदा अभ्यासाचे वेळापत्रक तयार केल्यानंतर त्याचे काटेकोरपणे पालन होणे आवश्यक आहे अभ्यासासाठी जागा निवडणे हा या ठिकाणी महत्वाचा टप्पा ठरतो. जेथे अवधान विचलन होणार नाही अभ्यास करण्यास पोषक वातावरण असेल अशी जागा अभ्यासासाठी निवडा. महाविद्यालयीन ग्रंथालय ही या दृष्टीने सर्वोत्तम जागा असेल प्रत्येक दिवशी जागा बदलल्याऐवजी एकाच जागी बसून अभ्यास करा, अभ्यासाचे एकदा का त्या जागेशी साधर्म्य प्रस्थापित झाले कि त्या जागी अभ्यास सुधार होतो, मन चटकन एकाग्र होते, वाचलेले लक्षातही राहते, तुम्ही अभ्यास कसा करावा हे परीक्षेतील यशस्वीतेच्या दृष्टीने खूपच महत्वाचे असते. वाचन हे अभ्यासातील खूपच महत्वाचे कौशल्य आहे किंबहुना वाचन कौशल्य हा अभ्यासाचा कणा असतो असे म्हटले तरी वावगे ठरणार नाही. निष्क्रिय वाचनापेक्षा सक्रीय वाचन हे स्मृतीस अधिक हितकारक ठरते. सर्वप्रथम प्रस्तुत पुस्तकातील प्रकरणाची रूपरेखा वाचा. त्यामुळे या प्रकरणात तुम्ही नेमके काय अभ्यासणार आहात याची तुम्हाला कल्पना येईल प्रकरणातील प्रत्येक भाग वाचून झाल्यानंतर त्यातील माहिती जीवनाशी कशी संबंधित आहे ते पहा. तिच्याशी निगडित घटना ,प्रसंग, वर्तन आठवण्याचा प्रयत्न करा. या प्रकारच्या माहिती प्रक्रियेमधील विषयात अंतर्दृष्टी तर प्राप्त होतेच त्याचबरोबर तो दीर्घकाळ लक्षात राहण्याची मदत होते.

● **परीक्षेची तयारी**

शालेय अभ्यासक्रमापेक्षा महाविद्यालयीन अभ्यासक्रमाची काठीण्य पातळी वरची असते तसेच त्यातील प्राविण्य विषयाच्या अपेक्षाही अधिक असते. एका निरीक्षणात असे आढळून आले कि अतिसामान्य विद्यार्थ्यांपेक्षा असामान्य

विद्यार्थी अभ्यासासाठी तीन पटीहून अधिक वेळ देतात. अभ्यासाचे लेखी वेळापत्रक विषयाच्या गरजेनुसार वेळ नेमून देण्यास मदत करते. तसेच शेवटच्या मिनिटाची घोकंपट्टी करण्यापासून परावृत्त करते. घोकंपट्टी ही नियमित अभ्यासाच्या तुलनेत कमी परिणामकारक असते. अशा अभ्यासाच्या स्मृतीनंतर ताण येतो आणि मानसिक व शारीरिक थकवा ही येतो, शिवाय परीक्षेच्या काळात अनावश्यक मानसिक ताण येतो. त्यामुळे ऐन परीक्षेत विद्यार्थ्यांची मती गुंग झाली असेही प्रकार घडतात. अभ्यास असा करावा कि ज्यामुळे परीक्षेच्या बऱ्याच आधी विषय पूर्णपणे समजवलेला असेल आणि परीक्षा जवळ आल्यावर एकदा धावती उजळणी करून विषय आणखी पक्का करता येईल परीक्षेच्या आधल्या दिवशी पाठ्यपुस्तकात दिलेले प्रश्न सोडविल्यास उजळणी तर होतेच त्याचबरोबर प्रश्न यशस्वीरीत्या सोडविता आल्यामुळे आत्मविश्वासही वाढतो.

● परीक्षा देणे

काही विद्यार्थ्यांना परीक्षा देण्याची नेमकी मेख समजलेली असते. वेगवेगळ्या प्रकारचे प्रश्न सोडविताना नेमका कसा विचार करावयाचा आणि अचूकपणे उत्तरे कशी लिहावयाची हे त्यांना चांगले माहित असणे. हे विद्यार्थी पुढील सोप्या युक्त्या वापरताना दिसतात.

- १) एकूण वेळेचा सुप्तपणे उपयोग करा. पेपर सोडवीत असताना मधून-मधून स्वतःची प्रगतीही तपासून पहा. एखादा प्रश्न मध्येच अवघड वाटला आणि पूर्णपणे सोडविता आला नाही तर निराश न होता तो प्रश्न तसाच अर्धवट ठेऊन पुढचे बाकीचे सर्व प्रश्न नीटपणे सोडवून झाल्यानंतर त्या प्रश्नाकडे वळा.
- २) दीर्घोत्तरी प्रश्न सोडविताना प्रथम संपूर्ण उत्तराची, त्यातील मुद्दे व उपमुद्दे त्यांची कच्ची रूपरेखा तयार करा, मगच त्यांचे टप्प्याटप्प्याने विस्तारीकरण करा.
- ३) बहुविध पर्यायी प्रश्न सोडविताना प्रत्येक प्रश्न वाचल्यावर दिलेला पर्याय वाचण्यापूर्वी तूमच्या दृष्टीने त्याचे उत्तर काय असायला पाहिजे त्याचा प्रथम विचार करा. तुमच्या मनातील उत्तराशी जुळणारे उत्तर जर दिलेल्या पर्यायामध्ये असेल तर तेच निवडा. बहुतेक वेळा अशा प्रकारचे उत्तर बिनचूक असते अर्थात तुमचे उत्तर निश्चित करण्यापूर्वी बाकीचेही पर्याय वाचा. बऱ्याचदा एकमेकांशी साधर्म्य असलेले आणि परीक्षार्थींना गोंधळात टाकणारे पर्याय प्रश्नाखाली दिलेले असतात. थोडक्यात वेळेचे व्यवस्थापन, अभ्यासकौशल्ये, परीक्षेची तयारी आणि परीक्षा देणे या सर्व कौशल्यांचा विकासनावर परीक्षेतील यश अवलंबून असते.

निष्कर्ष :

- १) मानसशास्त्र हे उपयोजनात्मक शास्त्र असून मानसशास्त्रामध्ये जैविक मानसशास्त्र, विकासात्मक मानसशास्त्र, अपसामान्य मानसशास्त्र, शरीर मानसशास्त्र, सामान्य मानसशास्त्र, बाल मानसशास्त्र, प्रयोगात्मक मानसशास्त्र, सामाजिक मानसशास्त्र, परामानसशास्त्र, चिकित्सा आणि सहमंत्रण मानसशास्त्र, औद्योगिक संघटन मानसशास्त्र, मानवी अभियांत्रिकी मानसशास्त्र आणि शैक्षणिक मानसशास्त्र इ. शाखा आज मोठ्या प्रमाणात कार्यरत आहेत. या शाखा समाजाला प्रबोधन मार्गदर्शन, करण्याचे काम सतत करत असतात. यांमध्ये विद्यार्थ्यांच्या अभ्यास सवयी, अभ्यास कौशल्य, परिणामकारक अध्ययन पद्धती, परीक्षेला निर्भीडपणे सामोरे जाण्याचे कौशल्य शिकवीत असते. त्यामुळे मानसशास्त्र हे उपयोजनात्मक शास्त्र आहे असे म्हणता येते.
- २) परीक्षांना सामोरे जाताना मानसशास्त्रीय ज्ञानाचे उपयोजन खूप महत्वाचे असते. स्मृती सुधार तंत्रे, वाचन कौशल्य, वेळेचे परिणामकारक नियोजन, लेखी वेळापत्रक तयार करणे, कामांची क्रमावली तयार करणे, मोठ्या अभ्यासक्रमाचे लहान भागांमध्ये विभाजन करणे. परिणामकारक अभ्यास कौशल्य परीक्षेची तयारी, परीक्षा देणे यांसारख्या मानसशास्त्रीय ज्ञानाचे उपयोजन करणे शक्य झाले. म्हणून मानसशास्त्रीय ज्ञानाचे उपयोजन खूप महत्वाचे असते.

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महिला सबलीकरणातील मानसिक अडथळे

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गोष्टवारा:

महिला सबलीकरण ही एक सामाजिक प्रक्रिया असून त्यामध्ये समाजाच्या सकारात्मक मानसिकतेची गरज असते. सशक्तीकरण म्हणजे निर्णय घेण्याच्या प्रक्रियेच्या बाहेरील बाजूने असलेल्या लोकांना (स्त्रिया) स्विकारणे आणि त्यांना परवानगी देणे. स्त्रियांचे सक्षमीकरण करत असतांना त्यांना आपण पुरुषांच्या तुलनेने मान असतो तेव्हा समाजामध्ये असणारे स्त्रियांचे पूर्वाग्रह त्यांच्यामध्ये अडसर निर्माण करतात. ह्या अभिवृत्ती जेव्हा उच्च टोकाच्या असतात, तेव्हा पूर्वाग्रह आणि साचेबद्ध धारणा निर्माण होत असतात. स्वतःचे निर्णय घेण्यास पात्र असल्याचा भास केल्याने सबलीकरणाची भावना निर्माण होते. सक्षमीकरणामध्ये शिक्षणाद्वारे महिलांचा दर्जा वाढविणे, जागरूकता, साक्षरता वाढवणे आणि प्रशिक्षण दिले जाते.

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प्रस्तावना :

स्वातंत्र्योत्तर काळात महिलांच्या विकासासाठी जाणीवपूर्वक प्रयत्न केले असले तरी, अपेक्षित यश प्राप्त झालेले नाही. सर्व यशापयश आर्थिक समस्यांच्या स्वरूपावर अवलंबून असते. सर्व समस्यांचे मूळ आर्थिक असते. समाजात आर्थिक सुबत्ता आली तर समाजात स्थान प्राप्त होते. परंतु समाजात महिला घटक उपेक्षित आहे. त्यांच्या गुणांची, कष्टाची कदर घ्यावीशी वाटत नाही. ती आयुष्यभर मुलगी, पत्नी, आई या स्वरूपात जीवन कंठीत असते. ती अहोरात्र काबाडकष्ट करते, लहान मोठ्यांची काळजी करण्यात आयुष्य घालवते. परंतु स्त्री घटकाचा मान कोणीही ठेवत नाही, याचे मूळ कारण आर्थिक आहे. म्हणून महिलांना आर्थिकदृष्ट्या स्वावलंबी बनवून समाजात पैशाला महत्व देण्याची प्रवृत्ती बदलून गुणांना महत्व देण्याचे पर्व निर्माण झाले पाहिजे. महिला सबलीकरण म्हणजे काय ? हे जाणण्या अगोदर महिलांची आजची आर्थिक, सामाजिक, शैक्षणिक, राजकीय, आरोग्य, संविधानिक स्थिती पाहणे उचित ठरेल. महिलांचे अर्थव्यवस्थेतील स्थान वैशिष्ट्यपूर्ण सांगता येईल.

● **संशोधनाची उद्दिष्ट्ये**

- १) महिला सबलीकरण संकल्पना समजावून घेणे.
- २) महिला सबलीकरणातील अडथळ्यांच्या मनोवृत्ती जाणून घेणे.

● **संशोधनाचे महत्व**

प्रस्तुत संशोधनाचा विषय महिला सबलीकरणावर आधारित आहे. या संशोधनातून स्त्रियांचा स्वतःकडे पाहण्याचा दृष्टीकोन, समाजाचा स्त्रियांकडे पाहण्याचा दृष्टीकोन, त्यांच्यामध्ये आत्मविश्वास वाढ होण्यासाठी क्षमता वृद्धी, सामाजिक जाणीव, स्वतः आत्मसन्मानाने जगणे, आत्मनिर्भर व वित्तीय संस्थांबरोबर जोडणी करून घेणे यासंदर्भात सदरील शोध निबंधाचा उपयोग होणार आहे. महिला सबलीकरणात कोणकोणते अडथळे येतात? आणि ते कसे दूर करता येतील? याचीही माहिती प्रस्तुत शोध निबंधातून होईल. राष्ट्रीय विकासात महिलांचे स्थान फार महत्त्वाचे आहे, त्यांची मानसिकता योग्य असल्याशिवाय राष्ट्रीय विकासात योगदान देऊ शकणार नाहीत. प्रस्तुत संशोधनाचा फायदा महिला सबलीकरणाचे अभ्यासक, शिक्षक, विद्यार्थी, संशोधक व्यावसायिक, नोकरदार पत्रकार या सर्वांनाच होईल.

● **संशोधन पद्धती:**

प्रस्तुत संशोधन महिला सबलीकरण संदर्भात असून चिंतनात्मक स्वरूपाचे आहे. त्यासाठी वर्णनात्मक संशोधन पद्धतीचा वापर केला आहे. ह्या संशोधनासाठी कोणत्याही प्राथमिक साधनांचा वापर केलेला नसून दुय्यम माहिती संकलन साधनांचा उपयोग केला आहे. त्यासाठी विविध संदर्भ ग्रंथ, प्रकाशित साहित्य, इंटरनेट, संशोधन साहित्याचा आधार घेतला आहे.

उद्दिष्ट्ये क्रमांक-१ महिला सबलीकरण संकल्पना समजावून घेणे.

सन २००१ महिला सबलीकरणाचे वर्ष मानले जात असले तरी स्वातंत्र्यपूर्व काळात महिलांचे सबलीकरण करण्यासाठी छत्रपती शाहू महाराज, महात्मा ज्योतिबा फुले, सावित्रीबाई फुले अशा मान्यवरांनी मुलींच्या शिक्षणासाठी शाळा सुरु करून महिलांचे सबलीकरण करण्याचा प्रयत्न केला आहे. सबलीकरणाच्या दृष्टीने समर्पक अशी व्याख्या करता येत नसली तरी काही अभ्यासकांनी व्याख्या करण्याचा प्रयत्न केला आहे. 'स्त्रीने, स्वतःच्या क्षमतांची ओळख करून घेऊन क्षमतांचा विकास करावयाच्या घरगुती व सामाजिक निर्णयांच्या प्रक्रियेत सहभागी होण्याचा प्रयत्न करणे म्हणजे सबलीकरण होय.'

सबलीकरणाचे घटक :

महिलांचे सबलीकरण अनेक घटकांनी अपेक्षित असले तरी सबलीकरणाचे मुख्य घटक खालील प्रमाणे आहेत.

अ) स्वतः साठी व्यक्तिविकास

१. आरोग्य :

स्त्रियांच्या आरोग्याबाबत फार मोठी हेळसांड होत आहे. स्त्री सुदृढ असेल तर कौटुंबिक मानसिकता अबाधित राहते. म्हणून स्त्री आरोग्य सुदृढ ठेवण्यासाठी सकस आहार व वैद्यकीय सुविधा नियमित मिळाव्यात. त्यामुळे जीवनमान उंचावून सामाजिक सौख्य नांदते. म्हणून सुदृढ आरोग्य हा सबलीकरणाचा महत्वाचा घटक आहे.

२. शिक्षण :

महिलांच्या सर्वांगीण सबलीकरणासाठी शिक्षण हे महत्वाचे साधन आहे. शिक्षणामुळे व्यावहारिक कौशल्य, उद्योजकता, संवाद, सामाजिक जडणघडण असे विविध गुण अंगीकृत होतात. म्हणून महिलांना उच्च शिक्षण, तांत्रिक शिक्षण, प्रशिक्षण मिळाल्यास त्या रोजगाराभिमुख होतील, त्यातून सबलीकरण होईल.

३. आर्थिक स्वावलंबन :

महिलांचे खऱ्या अर्थाने सबलीकरण हे आर्थिक स्वावलंबन झाल्यानंतरच होईल. या कमावत्या झाल्या, चार पैसे मिळवत्या झाल्या, तर त्यांचे आर्थिक स्वावलंबन होईल, त्यामुळे कौटुंबिक निर्णयात सहभाग वाढेल, त्यासाठी स्वयंसहाय्यता गट आवश्यक आहे.

ब) समाजाभिमुख व्यक्तिविकास :

१) जाणीव व जागृती :

अ) कर्तव्याची जाणीव :

महिलांना कन्या, माता, पत्नी या भूमिकेतून कर्तव्ये पार पदवी लागतात त्याचबरोबर स्वतःचे गुण, क्षमता, कौशल्य याची जाणीव होऊन ते विकसित करण्याचे कर्तव्य पार पडावे लागते. तसेच कौटुंबिक, सामाजिक कर्तव्ये अशी दुहेरी भूमिका पार पाडता आली पाहिजे.

ब) अधिकाराची जाणीव :

स्त्रीने स्वतःच्या अधिकारकक्षा ओळखून अधिकारवाणीने काम केले पाहिजे. स्वतःचे आरोग्य सांभाळणे, त्यासाठी उत्पन्नातून काही भाग खर्च करून स्वास्थ्य टिकविणे, मतदान निर्णय हे अधिकार बजावणे शक्य आहे तेव्हाच सबलीकरण होईल.

क) कायद्याची जाणीव :

शासकीय पातळीवर महिलांसाठी जे कायदे केले आहेत, त्या कायद्याची जाणीव व अंमलबजावणी केली तर

सबलीकरण होईल. महिलांसाठी असणाऱ्या कायद्याची अंमलबजावणी करून स्वतःवरील अन्याय दूर केल्यास सबलीकरण होईल. उदा. हुंडाबळी, विवाह वय, द्विभार्या प्रतिबंध कायदा, पोटगी कायदा यासाठी जाणीवपूर्वक काम करण्याची गरज आहे. त्यासाठी नेतृत्व धैर्य असले पाहिजे.

२) नेतृत्व विकास :

नेतृत्व विकास होणे म्हणजे इतरांबरोबर पुढाकाराने काम करणे. तसेच स्वतःच्या प्रयत्नाने परिस्थितीवर अनुकूल परिणाम घडवून आणण्यासाठी पुढाकाराने कार्य केले तरच सबलीकरण होते.

१. निर्णयक्षमता वृद्धिंगत :

नेतृत्व विकासाचा महत्वाचा गुण म्हणजे निर्णय घेण्यासाठी जबरदस्त आत्मविश्वास. अशा गुणांची जाणीव झाल्यास महिला अचूक निर्णय घेऊ शकतात.

२. क्षमता विकास :

प्रत्येक मानवाला शिक्षण व प्रशिक्षण यातून सबलता वाढविता येते. नेतृत्व करण्यासाठी संवाद कौशल्य, नियोजन, व्यवस्थापन इ. कौशल्यांची क्षमता विकसित केली तरच महिलांचे सबलीकरण होईल.

३. संपत्ती ठेवा :

महिलांच्या सबलीकरणाला निर्णय क्षमता विकासाबरोबर संपत्ती ठेवा आवश्यक असतो. त्याद्वारे त्या सबला होतात. सामाजिक साबलीकरणाबरोबर वित्तीय सबलीकरण सोपे असते. त्यामुळे सबलीकरणाबाबत हा घटक महत्वाचा आहे.

३) संघटन :

महिला सबलीकरणामधील महत्वाचा घटक म्हणजे महिलांचे संघटन होय. संघटन केल्यास सामूहिक विकास होतो. संघटीतपणा खालीलप्रमाणे केला जातो.

१. संघटित करण्याचे कौशल्य :

महिलांना एकत्रित करण्याचे मोठे कौशल्य आत्मसात करावे लागते. हे कौशल्य शिक्षण व प्रशिक्षण आणि अनुभवाने प्राप्त होत असते. त्यासाठी कठोर परिश्रम घ्यावे लागतात.

२. संघटित काम करण्याची वृत्ती :

सर्वाना विविध कौशल्य वापरून संघटित केल्यानंतर सामूहिक कृती आराखाडा तयार करून त्याची अंमलबजावणी कसोशीने केली पाहिजे. सबलीकरणाचे घटक आत्मसात करण्यासाठी शिक्षण, अनुभव, जबाबदाऱ्या, संघर्ष, समाजाचे

वातावरण या प्रक्रियेतून टप्याटप्याने करावे लागेल. त्यामुळे महिला सबलीकरण ही संकल्पना समजावून घेणे महत्वाचे ठरते.

उद्दिष्टे क्रमांक - २ महिला सबलीकरणातील अडथळांच्या मनोवृत्ती जाणून घेणे.

१. महिलांविषयी पूर्वग्रह :

समाजामध्ये असणारा पूर्वग्रह हा अभिवृत्तीचा खास प्रकार आहे. न्युकोब यांच्या मते, पूर्वग्रह हे शक्यतो नकारात्मक असतात. आपण अनेक व्यक्ती, समूह, वस्तू यांच्याविषयी नकारात्मक अभिवृत्ती बाळगतो यालाच पूर्वग्रह म्हणतात. तसेच समाजामध्ये स्त्रियांच्या मानसिक, शारीरिक, बौद्धिक क्षमतांविषयी असणारे पूर्वग्रह अनेक आहेत, ते प्रत्येक समाजामध्ये असतात आणि याचाच स्त्रियांच्या सक्षमीकरणावर परिणाम होत असतो. कारण स्त्रियांचे सक्षमीकरण करत असतांना त्यांना आपण पुरुषांच्या तुलनेने मानत असतो तेव्हा समाजामध्ये असणारे स्त्रियांचे पूर्वग्रह त्यांच्यामध्ये अडसर निर्माण करतात. ह्या अभिवृत्ती जेव्हा उच्च टोकाच्या असतात, तेव्हा पूर्वग्रह आणि साचेबद्ध धारणा निर्माण होत असतात. पूर्वग्रह हे जन्मजात नसून अर्जित स्वरूपात असतात. महिलांच्या बाबत सुरुवातीपासूनच चुकीच्या धारणा, कल्पना समजुती, या समाजामध्ये प्रचलित आहेत. मुळातच आपली पुरुषप्रधान संस्कृती असल्यामुळे महिलांना कमी लेखले जाते. त्यांचा दर्जा हा कमी मानला जातो. दैनंदिन जीवनात साध्या निर्णयात देखील त्यांना विचारले जात नाही. फक्त 'चूल आणि मुल', महिलांनी फक्त घर सांभाळावे याच उद्देशाने त्यांच्याकडे पहिले जाते. परिणामी स्त्रियांची मानसिकता देखील हळूहळू याच प्रकारे तयार होते. अशा प्रकारच्या चौकटीतून बाहेर पडणे त्यांना अशक्य होते.

२. महिलांविषयी नकारात्मक अभिवृत्ती :

अभिवृत्ती या दोन प्रकारच्या असतात. जेव्हा त्या सकारात्मक असतात तेव्हा स्त्रियांच्या सक्षमीकरणामध्ये हातभार लावतात. अशा अभिवृत्ती समाजात फारच कमी असतात. समाजामध्ये स्त्रियांविषयी असणारे नकारात्मक अभिवृत्तीचे टोक जास्त आहे. याचा परिणाम स्त्रियांच्या सक्षमीकरणाच्या प्रक्रियेत अडसर निर्माण करतो. स्त्रियांच्या बाबतीत देखील काही साचेबद्ध धारणा निर्माण झाल्या आहेत. त्या इतक्या पक्या आहेत की त्या न बदलणाऱ्या आहेत, आणि त्याचे सार्वत्रिकीकरणच जास्त होते. आज आपण प्रत्येक ठिकाणी पाहतो की पुरुषांचेच वर्चस्व दिसते. महिलांना त्यांच्या मानाने कमी लेखले जाते. म्हणजे स्त्रियांविषयी नकारात्मक धारणाच जास्त आहेत. त्यामुळे सक्षमीकरणाच्या प्रक्रियेत अडथळा निर्माण करतात.

३. स्व-आदरभाव लिंगभेद :

स्व-आदरभाव लिंगभेद हे स्त्रियाच मानत असतात. स्त्रियांविषयी समाजामध्ये अनादिकालापासून असणारे पूर्वग्रह

असणाऱ्या नकारात्मक अभिवृत्ती, साचेबद्ध धारणा यांच्यामुळे स्त्रिया स्वतःचे नकारात्मक मूल्यांकन करीत असतात. अनेक समाजामध्ये अनेक स्त्रिया ह्या स्वतःचे मूल्यमापन करत असतात. जेव्हा त्या स्वतःचे मूल्यमापन करीत असतात तेव्हा पुरुषांशी तुलना करून स्वतःला कमी लेखतात. कमी मानतात, स्त्रियांचा स्वतः बाबत असणारा स्व-आदरभाव नीचतम दर्जाचा आहे. ज्यावेळी आपण स्त्रियांचे सक्षमीकरण करत असतो त्यावेळी स्त्रियाच स्वतःला पुरुषांच्या बरोबरीने मानत नाहीत. अनेक प्रथा, प्रश्नांच्या बाबतीत त्या स्वतःला कमी लेखतात. किंवा समाज तसे मानत असतो. स्त्रिया जेव्हा स्वतःचे मूल्यमापन नकारात्मक धारणेतून करतात तेव्हा तो निम्नतम स्व-आदरभाव असतो. जेव्हा सकारात्मक किंवा धनात्मक करीत असतात तेव्हा तो उच्चतम स्व-आदरभाव असतो. त्यामुळे आजही ग्रामीण भागातील स्त्रिया स्वतःला पुरुषांच्या तुलनेत कमी लेखतात. म्हणजेच स्त्रियांचा स्वतःविषयी असणारा नकारात्मक दृष्टीकोन हाच त्यांच्या सक्षमीकरणात अडथळा निर्माण करतो. वेगवेगळ्या समाजात स्त्रियांना दिली जाणारी वागणूक देखील सक्षमीकरणात महत्वाची ठरते. तर काही समाजात स्त्री हे फक्त उपभोगाचे साधन मानले जाते. 'चूल आणि मूल' ह्याच पार्श्वभूमीवर आहे. सक्षमीकरण म्हणजे फक्त समान मानने असे नव्हे तर त्यांना संधी निर्माण करून देणे होय. माझ्या मते पुरुषांचा संकुचित दृष्टीकोन हे तिला जमू शकणार नाही, किंवा ती हे करूच शकणार नाही, असा संकुचित दृष्टीकोन असतो. पुरुष हा स्वतःला स्त्रियांपेक्षा वरचढ श्रेष्ठ मानत आला आहे, आणि हा देखील एक सक्षमीकरणातील अडथळा आहे. जर तुम्हाला उपरोक्त अडथळ्यांना बदलावयाचे असेल तर केवळ समानता हा मुद्दा न धरता समान संधी उपलब्ध करून देणे गरजेचे आहे. संधी उपलब्ध करून देण्यासाठी अभिवृत्ती, पूर्वग्रह, साचेबद्ध धारणा, वेगवेगळ्या संकुचित वृत्ती यांसारख्या असणाऱ्या मानसिक गोष्टींची बंधने तोडायला पाहिजे. तेव्हाच त्यांना बरोबरीने येण्याची संधी उपलब्ध होईल. जर संधी उपलब्ध करू दिली तरच त्यांचे सक्षमीकरण झाले असे म्हणता येईल.

निष्कर्ष :

- 1) महिला सबलीकरण ही एक काळाची गरज निर्माण झाली आहे. कारण जोपर्यंत महिला सबलीकरण होणार नाही तोपर्यंत महिला सबलीकरण प्रक्रिया घडणार नाही, समाजाच्या प्रगतीमध्ये हातभार लागणार नाही. सबलीकरण म्हणजे त्यांना फक्त स्त्री-पुरुष समानता असे मानून चालणार नाही तर त्यासाठी त्यांना संधी उपलब्ध करून देणे महत्वाचे आहे. आपल्या चुकीच्या आणि साचेबद्ध धारणा, विचार आपले पूर्वग्रह यांमध्ये बदल घडवून आणणे महत्वाचे असते. तेव्हा स्त्रिया समाजाच्या प्रगतीमध्ये निर्भीडपणे हातभार लावतील. त्यामुळे महिला सबलीकरण संकल्पना समजून घेणे महत्वाची ठरते.
- 2) महिला सबलीकरणातील अडथळ्यांच्या मनोवृत्ती जाणून घेणे खूप गरजेच्या आहेत. कारण जोपर्यंत समाजाला किंवा आपल्याला हे मानसिक अडथळे कोणते आहेत? हे समजणार नाहीत तोपर्यंत सबलीकरण प्रक्रियेला अडसर निर्माण

होईल. समाजामध्ये स्त्रियांच्या बाबतीत मानसिक, शारीरिक, बौद्धिक क्षमता विषयी असणारे पूर्वग्रह प्रत्येक समाजात आहेत. समाजामध्ये दोन प्रकारच्या अभिवृत्ती आहेत, त्या जर सकारात्मक असतील तर सबलीकरणाला हातभार लावतात. नकारात्मक असतील तर सक्षमीकरणात अडथळा निर्माण करतात. स्व-आदरभाव लिंगभेदामध्ये स्त्रिया पुरुषांशी तुलना करताना स्वतःला कमी लेखतात, त्यांच्यामध्ये असणारा स्व-आदरभाव हाच नीचतम दर्जाचा आहे. आणि तो देखील महिला सबलीकरणात अडथळा निर्माण करतो. स्त्रियांच्या बाबतीत असलेली ऐतिहासिक पार्श्वभूमी ही देखील महिला सक्षमीकरणात अडथळा निर्माण करते. म्हणजे स्त्रिया या पुरोगामी चौकटीतून, मानसिकतेतून बाहेरच पडणार नाहीत. त्यामुळे महिला सबलीकरणातील मानसिक अडथळे जाणून घेणे महत्वाचे ठरते.

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अॅथलेटिक्ससाठी मानसिक कौशल्य प्रशिक्षण (Mental Skills Training for Athletes)

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प्रस्तावना:

आजच्या आधुनिक क्रीडा जगतात फक्त शारीरिक ताकद पुरेशी नसते; तर मानसिक स्थैर्य, आत्मविश्वास आणि भावनांवर नियंत्रण हे यशाचे खरे घटक ठरतात. प्रत्येक खेळाडू शारीरिक तयारी सोबत मानसिक तयारी देखील करतो. त्याच बरोबर मनावर ताबा असावा लागतो. आणि आपल्याला क्षेत्र कोणतेही असू देत तरी त्यात यश संपादन करू असा आत्मविश्वास असावा लागतो. यासाठी अनेक, शाळा कॉलेज स्तरावर प्रयत्न केले जातात. आणि खेळाडूंना प्रेरणा दिली जाते. त्याच बरोबर त्यांचे मानसिक आरोग्य कसे चांगले राहिल याकडे लक्ष केंद्रीत केले जाते. आज शारीरिक आरोग्य बरोबर मानसिक आरोग्य कसे चांगले रहावे याकडे लक्ष दिले जाते. तसेच अनेक क्रीडा क्षेत्रात मानसिक कौशल्य प्रशिक्षण (Mental Skills Training) हे अशा तयारीचा एक महत्त्वाचा भाग आहे, ज्यामुळे खेळाडू आपली कामगिरी सातत्याने सुधारू शकतात आणि आव्हानांना समर्थपणे सामोरे जाऊ शकतात क्रीडा हा केवळ शारीरिक कार्याचा एक भाग नाही. तर यशस्वी खेळाडू होण्यासाठी शारीरिक क्षमतेसोबतच मानसिक दृढता देखील महत्त्वाची आहे. खेळातील कार्यक्षमता वाढवण्यासाठी मानसिक कौशल्यांचे प्रशिक्षण अत्यंत आवश्यक आहे.

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मानसिक कौशल्य प्रशिक्षणामुळे खेळाडू त्यांच्या मानसिक स्थितीवर नियंत्रण ठेवू शकतात आणि त्यांचा आत्मविश्वास व एकाग्रता वाढवू शकतात. शारीरिक प्रशिक्षणासोबतच मानसिक ताकद सुद्धा महत्त्वाची आहे, जे खेळाडूंना त्यांच्या सामर्थ्याचे योग्यता चा उपयोग करण्यास मदत करते.

या प्रशिक्षणाचा मुख्य उद्देश म्हणजे खेळाडूंच्या एकाग्रता, आत्मविश्वास, प्रेरणा, सकारात्मक विचार, ताणनियंत्रण, भावनिक संतुलन आणि आत्मशिक्षण, विकसित करणे. खेळाच्या मैदानावर ताणतणाव, स्पर्धात्मक दबाव, अपयशाची भीती, प्रेक्षकांचा प्रतिसाद अशा अनेक मानसिक गोष्टींना तोंड द्यावे लागते. अशा वेळी योग्य मानसिक कौशल्यांचा वापर केल्यास खेळाडू आपली सर्वोत्तम कामगिरी देऊ शकतात या क्षेत्रा काही तंत्राचा सुद्धा वापर केला जातो. मानसिक कौशल्य प्रशिक्षणामध्ये

काही तंत्रांचा समावेश असतो जसे की उद्दिष्ट निर्धारण, कल्पना शक्तीचा वापर, आत्मसंवाद, विश्रांती आणि ध्यान तंत्रे, भावनांवर नियंत्रण खेळाडूंनी आपल्या क्षमतेनुसार स्पष्ट आणि साध्य होणारी उद्दिष्टे निश्चित करणे.

संशोधनाचा उद्देश:

1. अॅथलीट्ससाठी मानसिक कौशल्य प्रशिक्षणाची महत्त्वाची भूमिका काय आहे हे समजून घेणे.
2. अॅथलीट्ससाठी मानसिक कौशल्य प्रशिक्षण.

हे आपण पुढील मुद्द्यांच्या आधारे समजून घेऊ.

- कल्पनाशक्तीचा वापर - आपण जे काही कार्य करू त्यात यशस्वी होवू ही सकारात्मकता निर्माण होते
- आत्मसंवाद – मी हे करू शकतो किंवा करू शकते सकारात्मक संवाद निर्माण झाला कि आत्मविश्वास वाढतो.
- विश्रांती आणि ध्यान तंत्रे - मनात जे विचार येतात यावर नियंत्रण करण्यासाठी आणि ताण तणाव कमी करण्यासाठी
- भावनांवर नियंत्रण - राग, भीती, चिंता यांवर संयम ठेवणे.
- उद्दिष्ट निर्धारण - खेळाडूंनी आपल्या क्षमतेनुसार स्पष्ट आणि साध्य होणारी उद्दिष्टे निश्चित करणे.
- एकाग्रता आणि लक्ष केंद्रित ठेवणे
- अपयशाशी सामना करण्याची क्षमता पराभव किंवा चुकांनंतर मानसिक पुनर्प्राप्ती वाढवते.
- सातत्यपूर्ण कामगिरी (Consistency) राखणे.

या सर्व तंत्रांच्या सरावामुळे खेळाडूंच्या विचारांमध्ये स्पष्टता, एकाग्रतेत वाढ आणि कामगिरीत सातत्य दिसून येते. शारीरिक प्रशिक्षण शरीर मजबूत करतं, तर मानसिक प्रशिक्षण मन मजबूत करतं. मन आणि शरीर यांचा संतुलित विकास झाला की खऱ्या अर्थाने खेळाडू “संपूर्ण” बनतो. मानसिक कौशल्य प्रशिक्षणामुळे खेळाडू स्पर्धेतील दबाव, अपयश, प्रेक्षकांचा प्रतिसाद, प्रशिक्षकांच्या अपेक्षा यांना सकारात्मकपणे सामोरे जाणे शिकतात. तसेच, अपयशानंतर पुन्हा उभे राहण्याची ताकद आणि आत्मविश्वास या प्रशिक्षणातून मिळतो. म्हणूनच, खेळाडूंनी फक्त शारीरिक तयारीपुरते मर्यादित न राहता मानसिक कौशल्य प्रशिक्षणालाही समान महत्त्व द्यायला हवे. हे प्रशिक्षण खेळाडूंच्या एकूण व्यक्तिमत्त्व विकासासाठी, ताणतणाव नियोजनासाठी आणि आत्मविश्वास वृद्धीसाठी अत्यंत आवश्यक ठरते.

संशोधन पद्धती :

या अभ्यासात विविध प्रकारच्या खेळांतील खेळाडूंचा एक सर्वेक्षण करण्यात आले. यामध्ये मानसिक कौशल्य प्रशिक्षणाचे त्यांच्यावर होणारे परिणाम विश्लेषण केले. डेटा संकलनासाठी "Sports Mental Skills Questionnaire (SMSQ)" यामध्ये सहा घटक चा समावेश करणात आला. या संशोधनात खेळाडूंच्या मानसिक कौशल्यांचे मूल्यांकन करण्यासाठी 20 प्रश्नांचा "Sports Mental Skills Quiz" वापरला गेला. 6 मानसिक कौशल्यांचा समावेश करण्यात आला. लक्ष केंद्रीकरण, आत्मविश्वास, प्रेरणा, भावनिक नियंत्रण, ध्येय निर्धारण, ताण नियंत्रण यावर प्रश्न विचारली होते. आणि त्यावरून आलेले उत्तरांवरून त्यांचा Score काढण्यात आला. Mean Score: ३.९९. होता. सहभागींनी मानसिक तयारीचा चांगला स्तर प्रदर्शित केला. या अभ्यासातील सहभागी खेळाडूंनी एकूणच मानसिक तयारीचा चांगला स्तर दाखविला. त्यांच्याकडे आत्मविश्वास, लक्ष केंद्रीकरण आणि प्रेरणा या घटकांमध्ये सकारात्मक वृत्ती दिसून आली, ज्यामुळे ते स्पर्धेतील ताणतणाव हाताळण्यात आणि आपल्या कामगिरीत सातत्य राखण्यात सक्षम असल्याचे सूचित होते. हा परिणाम दर्शवितो की या खेळाडूंमध्ये मानसिक स्थैर्य आणि तयारीचे समाधानकारक प्रमाण आहे, ज्याचा थेट परिणाम त्यांच्या खेळातील कार्यक्षमतेवर होतो.

परिणाम :

- 1) मानसिक कौशल्य प्रशिक्षण घेत असलेले खेळाडू अधिक आत्मविश्वासाने खेळतात.
- 2) लक्ष केंद्रीकरण व भावनिक नियंत्रण हे खेळाडूंच्या कार्यक्षमतेवर थेट परिणाम करत आहेत.
- 3) नियमित मानसिक प्रशिक्षण घेतल्यावर खेळाडू अधिक ताणमुक्त, एकाग्र, आणि प्रेरित होतात.
- 4) मानसिक कौशल्य प्रशिक्षणामुळे खेळाडूंमध्ये मानसिक स्थितीची सुधारणा झाली आहे, आणि त्यांचा खेळ अधिक स्थिर व संतुलित झाला आहे.

या अभ्यासातील सहभागी खेळाडूंनी एकूणच मानसिक तयारीचा चांगला स्तर दाखविला. त्यांच्याकडे आत्मविश्वास, लक्ष केंद्रीकरण आणि प्रेरणा या घटकांमध्ये सकारात्मक वृत्ती दिसून आली, ज्यामुळे ते स्पर्धेतील ताणतणाव हाताळण्यात आणि आपल्या कामगिरीत सातत्य राखण्यात सक्षम असल्याचे सूचित होते. हा परिणाम दर्शवितो की या खेळाडूंमध्ये मानसिक स्थैर्य आणि तयारीचे समाधानकारक प्रमाण आहे, ज्याचा थेट परिणाम त्यांच्या खेळातील कार्यक्षमतेवर होतो.

निष्कर्ष :

अॅथलीट्ससाठी मानसिक कौशल्य प्रशिक्षण हे त्यांच्या खेळातील कार्यक्षमतेसाठी अत्यंत महत्त्वाचे साधन आहे. शारीरिक ताकद, तांत्रिक कौशल्य आणि रणनीती यांसोबतच मानसिक तयारी हा यशाचा निर्णायक घटक ठरतो. या प्रशिक्षणाद्वारे

खेळाडूंमध्ये आत्मविश्वास, लक्ष केंद्रीकरण, भावनिक नियंत्रण, ताण व्यवस्थापन आणि प्रेरणा यांचा विकास होतो. अशा कौशल्यांमुळे खेळाडू स्पर्धेतील दबाव आणि तणावावर प्रभावीपणे मात करू शकतात व सतत उच्च दर्जाची कामगिरी राखू शकतात संशोधनातून असे स्पष्ट होते की मानसिक कौशल्य प्रशिक्षण नियमित आणि योजनाबद्ध रितीने दिल्यास खेळाडूंची एकूण मानसिक स्थिरता, आत्मविश्वास आणि खेळातील यशाची पातळी लक्षणीयरीत्या वाढते. मानसिक तयारी हीच खेळातील खरी ताकद आहे. त्यामुळे अॅथलीट्सनी शारीरिक तयारीबरोबरच मानसिक कौशल्य प्रशिक्षणालाही तितकाच प्राधान्य द्यावे.

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अल्बर्ट एलिस अल्बर्ट एलिस यांचे मानसशास्त्रातील योगदान

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अमेरिकन प्रसिद्ध मानसोपचारतज्ज्ञ डॉ. अल्बर्ट एलिस यांचा जन्म 27 सप्टेंबर 1913 साली झाला. 75 पेक्षा जास्त ग्रंथ! 800 च्या वर शोधनिबंध! 400 लेख! 200 च्या वर ऑडिओ आणि व्हिडिओ कॅसेट्स! ही त्यांची आयुष्यभराची कमाई होती. त्यांनी विवेकनिष्ठ मानसोपचारशास्त्राला यश देऊन मानसशास्त्रात मोठी क्रांतीच घडविली नाही, तर बोधात्मक मानसशास्त्राची व्याप्ती मोठ्या प्रमाणात वाढविली. आपले सर्वस्व अर्पूण 40 वर्षांपेक्षाही जास्त काळ मानसोपचार शास्त्राचा अभ्यास केला. यांना नेफ्रायटीस नावाचा आजार लहानपणी झाला होता. अनेक आजारांनी ते ग्रस्त होते. प्रत्येकाचे आई-वडील मुलांना भेटायला यायचे पण यांना कुणीच घरातील व्यक्ती भेटायला यायचे नाही. त्यामुळे ते खुप रडायचे हॉस्पिटलचे वातावरण अशांत व्हायचे, मनाला होणारा मनस्ताप वेगळाच, इतरांची बोलणी खावी लागायची यातुन वयाच्या नवव्या वाढदिवसाच्या दिवशी यांनी एक महत्वाचा धडा आत्मसात केला आणि स्वताःला पटवून देखिल दिला. त्यांच्या आई-वडिलांना बदलन जरी त्यांच्या हातात नसलं तरी त्यांच्याबद्दल कुठले विचार करावेत, हे मात्र बहुतांशी माझ्याच हातात आहे हे मनाशी त्यांनी ठरवलं कारण आई-वडीलांचे एकमेकांशी पटत नव्हते. माझे विचार, ते किंवा इतर कुणीही ठरवू शकणार नाहीत. सध्याची परिस्थिती नक्कीच अप्रिय आहे; तरी देखील ती हातपाय गाळून बसण्याइतकी भयंकर नाही. त्या परिस्थितीतून काही चांगलं निघू शकतं, हा विचार परत मनात सखोल मुक्काम कमी करणं हातात नाही. म्हणुन इथे राहायला लागतं म्हणुन रडत का बसायचं? इथे राहण्याचा जमेल तितका फायदा करून घ्यायचा. ते विचार इतर मुलांना पण खेळाच्या माध्यमातून शिकविले. आपल्याला आवडत नसणा-या परिस्थितीतही अनेक चांगल्या गोष्टी लपलेल्या असतात, त्यामुळे तशा परिस्थितीचेही काही फायदे होऊ शकतात. हे फायदे आणि चांगल्या गोष्टी शोधण्याचं काम इतरांनी करायचं जो हे काम चांगल्या पध्दतीने करेल तो खेळाचा विजेता ठरेल. यातुन फायदा हा झाला की, हॉस्पिटलचे वातावरण सकारात्मक झाले. आवडत नसणा-या परिस्थितीतून काही चांगलं निघू शकतं हे सगळ्यांना समजायला लागलं यामुळे सर्व मुल आणि एलिस पटकण आजारातून बाहेर पडू शकले. इतकं सुंदर त्यांच जिवन तत्वज्ञान होत.

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अल्बर्ट एलिस यांची मानसशास्त्र या विषयात असणारी अभ्यासाची तत्परता, जिज्ञासा मानसशास्त्र या विषयावर असणारे प्रेम वाखानण्याजोगे आहे. यांनी कोलंबिया विद्यापीठामध्ये मानसशास्त्राची पदवी घेऊन ते प्रथम आले. सुरुवातीला जेव्हा ते एम. ए मानसशास्त्र या विषयासाठी प्रवेश घ्यायला गेले तेव्हा त्यांना नकार मिळाला. पण जेव्हा त्यांच्यासाठी एक अट ठेवली की प्रथम प्रवेश परीक्षेमध्ये जर त्यांनी उत्तम गुण जर मानसशास्त्रात मिळवले तर त्यांना प्रवेश मिळावा. त्यांनी प्रथम परीक्षा दिली आणि मानसशास्त्र विषयांमध्ये त्यांचा निकाल शंभर टक्के लागला. महत्त्वाचं म्हणजे बी.बी.ए मध्ये त्यांनी पूर्वीचे शिक्षण केलेले होते. त्यांना पूर्वीचा कुठलाही मानसशास्त्र विषयाच्या अभ्यासाचा पाया नव्हता तरीही त्यांच्या प्रथम प्रयत्नामध्ये त्यांनी शंभर टक्के गुण मिळविले. त्यांच्या जीवन प्रवासातून प्रत्येक गोष्टीत नवीन शोध घेण्याची तत्परता जाणवते. अल्बर्ट एलिस यांच्या अंतःकरणात विवेकनिष्ठ विचारांची तत्व लहानपणापासूनच रुजलेली होती. जेव्हा त्यांचं मन अविवेकी विचारांकडे धाव घ्यायचं तेव्हा, यावर मात करण्यासाठी तीन कार्ड तयार केली. त्यावरचा संदेश वाचला की, त्यांचे अविवेकी विचार नाहीसे व्हायचे. पहिल्या कार्डवर लिहीले होते की, काही मिळवायचं असेल, तर श्रमाला पर्याय नाही. हे कार्ड सांगायचं, की, कठीण परिस्थिती नकोशी वाटत असली तर दुरच्या हितासाठी अटळ आहे. त्यामुळे भविष्य सुंदर होईल. नजीकचे कष्ट थोडे तरी सुसह्य व्हायचे. दुस-या कार्डवर लिहीले होते की, प्रतिकूल परिस्थिती हे आपल्याला मिळालेलं छुप वरदान असतं. हे कार्ड त्यांनी पाहिल्यावर असं सांगायचं की, प्रतिकूल परिस्थिती वरवर जरी कितीही कठीण वाटली, तरी ती कणखर बनण्याचं प्रशिक्षण देते. त्या परिस्थितीला तोंड देऊन आपला विकास होतो. त्यामुळे त्यांची जिद्द वाढायची. तिस-या कार्डवर लिहीले होते की, हेही दिवस जातील. हे कार्ड सांगायचे की, आताच्या परिस्थितीत कष्ट सोसावे लागले, तरी कोणतीच परिस्थिती आहे तशीच राहत नसते. तिच्यात बदल होतचं असतो. आजची कठीण परिस्थिती उदया नक्कीच बदलेल. आता घेतलेले कष्ट कायमस्वरूपी राहत नाही. तर कधी तरी त्यातून मुक्तता होईल या आशेने त्यांना उभारी यायची.

वैफल्य सहन करण्याची क्षमता हळूहळू वाढत नेली. जगाचा आणि इतरांचा मुक्त स्वीकार करण्यासाठी हाच एकमेव उपाय होता. त्यासाठी धीर बाळगायला ते शिकले. यांचे विचार मुळापासून अभ्यासतांना हे विचार फक्त मानसशास्त्रापुरतेच मर्यादित नाहीत, तर या विचारांत जीवनाच्या सर्व पैलुंन पर्यंत पोहचणार मूलभूत जीवन-तत्त्वज्ञान सामावलेलं आहे. अल्बर्ट एलिस हे शारीरिक दुर्बलतेवर मात करून मृत्यूपर्यंत नियमित कार्यरत राहिले. अशा या महान मानसोपचार शास्त्रज्ञांचा मृत्यू 2007 साली झाला असला तरी विवेकी विचारांच्या रूपात आज ते जिवंत आहेत.

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कृत्रिम बुद्धिमत्तेची मानसशास्त्रातील भूमिका

(Exploring the Role of Artificial Intelligence in Psychology)

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सारांश:

मानवी बुद्धिमत्तेला पूरक म्हणून कृत्रिम बुद्धिमत्ता (AI) मानवी मेंदूची कार्यक्षमता वाढविण्यास मदत करते. मानसशास्त्र क्षेत्रात AI-आधारित साधनांचा वापर वाढत असल्याने मानसिक आरोग्य, बोधात्मक प्रक्रिया, निदान, उपचार आणि संशोधन या सर्व क्षेत्रांमध्ये नव्या शक्यता निर्माण झाल्या आहेत. सिम्युलेशन, संगणक आधारित मानसोपचार, मशीन लर्निंग-आधारित संकेत विश्लेषण, AI सक्षम निदान प्रणाली, तसेच therapeutic computer games सारख्या तंत्रज्ञानांनी मानसिक आरोग्य सेवा सुधारण्यास मोठा हातभार लावला आहे. प्रस्तुत लेखामध्ये मानसशास्त्र क्षेत्रातील AI चा वापर, त्याचे फायदे, आव्हाने आणि भविष्यातील दिशा यांचे सविस्तर विश्लेषण करण्यात आले आहे.

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प्रस्तावना:

मानवी बुद्धिमत्तेला पूरक म्हणून संगणक आधारित बुद्धिमत्ता (AI) मानवी मेंदूचा प्रभावीपणे विस्तार करते आणि त्याची बुद्धिमत्ता वाढवते. कृत्रिम बुद्धिमत्ता आणि मानवी मेंदू एकमेकांशी संबंधित आहेत आणि एकमेकांना पुढे जाण्यास मदत करत असतात. AI मानसशास्त्र क्षेत्रात मानवी सर्जनशीलतेचा अभ्यास करण्यासाठी पूर्णपणे नवीन मार्ग खुले करत आहे. मानसशास्त्र हे वर्तनाचे शास्त्र आहे. मानसिक प्रक्रियांचा त्यामध्ये अभ्यास केला जातो. मानसशास्त्रामध्ये बोधावस्था आणि अबोधावस्था घटना, तसेच भावना आणि विचार यांचा अभ्यास समाविष्ट आहे. मानवी अनुभवाच्या सर्व पैलूंना सामावून घेते असे अमेरिकन सायकियाट्रिक संघटनेचे म्हणणे आहे. बोधनिक मानसशास्त्र ही मानसशास्त्राची मुख्य शाखा आहे जी प्रत्यक्ष मशीन लर्निंग कृत्रिम बुद्धिमत्तेशी संबंधित आहे. या कार्यक्षेत्रातील उपयोगीतामध्ये सिम्युलेशनवर आधारित पद्धतींचा समावेश आहे (सिम्युलेशन म्हणजे एखादी गोष्ट किंवा प्रक्रिया कृत्रिमरीत्या तयार केली जाते. तेव्हा त्याला सिम्युलेशन म्हणतात.) म्हणजे संगणक प्रणालीचा वापर करून विशिष्ट परिस्थितीची नक्कल किंवा अनुकरण करणे.

Simulation — संगणक व तंत्रज्ञानाचा वापर करून एखादी वास्तविक परिस्थिती तयार करणे, ज्याचा उपयोग प्रशिक्षण व संशोधनासाठी होतो. या कार्यक्षेत्रातील उपयोगीतामध्ये सिम्युलेशन आधारित पर्यावरण शिक्षण, संगणक आधारित भावना ओळख, आंतरगट समुह संवाद सिम्युलेशन, बोधनिक वार्तनिक मानसोपचार, संगणक आधारित मानसोपचार पद्धत, इलेक्ट्रॉनिक चौकशी तसेच स्वयंचलित आउटपुट निर्मिती इत्यादीचा समावेश होतो.

बोधात्मक मानसशास्त्र व्यक्तीच्या माहितीचा प्रोसेसर म्हणून उपयोग करते. त्याचप्रमाणे संगणक माहिती घेतो व आउटपुट तयार करण्यासाठी प्रोग्रामचे अनुसरण करतो. दैनंदिन जीवनात बोधात्मक कार्य खूप महत्त्वपूर्ण भूमिका बजावते. अशाप्रकारे बोधात्मक दोष व्यक्तीच्या दैनंदिन जीवनावर, शैक्षणिक, व्यावसायिक, आंतरवैयक्तिक क्षेत्रांमध्ये मोठ्या प्रमाणात परिणाम करत असतो. (Goldberg, 2009)

बोधात्मक कार्यातील कमतरता/दोष हे विविध मानसिक विकारांमध्ये दिसून येतात, जसे की छिन्नमनस्कता, द्विध्रुवीय विकृती, अवसाद विकृती, अवधान कमतरता दोष, अतिक्रियाशीलता विकृती (ADHD), आघातानंतरचा ताण विकार (PTSD), Obsessive Compulsive विकृती (OCD). (Milan, 2012)

कृत्रिम बुद्धिमत्ता (Artificial Intelligence) हा शब्द जॉन मॅकार्थी यांनी मशीनच्या त्या कार्याची अंमलबजावणी करण्याची क्षमता स्पष्ट करण्यासाठी विकसित केला ज्यामध्ये ती कार्ये मानवानं केली तर ती बुद्धिमान समजली जातील. जसे की तर्क करणे, शिकणे, निर्णय घेणे, जुळवून घेणे, नियंत्रण व आकलन करणे.

रसेल व नॉरविंग (2009) यांनी कृत्रिम बुद्धिमत्तेची व्याख्या केली आहे — अशा एजंटची रचना करणे व तयार करणे की जे पर्यावरणातून ज्ञान प्राप्त करतात आणि अशा कृती करतात की पर्यावरणावर त्याचा परिणाम होतो. 1990 च्या काळात कृत्रिम बुद्धिमत्तेकडे शास्त्रज्ञांचे लक्ष तर्कावर आधारित होते, विशेषतः ज्ञान प्रातिनिधिकतेवर (Knowledge Representation). पण आजचे लक्ष मशीन लर्निंग व सांख्यिकीय कार्यप्रणालीवर (Algorithm) आहे.

अलिकडच्या काळात कृत्रिम बुद्धिमत्तेला खूप महत्त्व प्राप्त झाले आहे. प्रत्येक क्षेत्रात कृत्रिम बुद्धिमत्तेचा वापर केला जात आहे. त्याची उपयोगिता मोठ्या प्रमाणात आहे. (Fast & Horvitz, 2017) व्यवसाय विश्लेषण, औषध, वाणिज्य, प्रशासन, शिक्षण क्षेत्रात तसेच कामाच्या ठिकाणी व दैनंदिन जीवनात कृत्रिम बुद्धिमत्तेचा वापर केला जात आहे.

कृत्रिम बुद्धिमत्ता आणि वैद्यकीय क्षेत्र:

कृत्रिम बुद्धिमत्ता व तंत्रज्ञानाला प्रत्यक्ष/थेट मानवी मेंदूशी जोडणे. वैद्यकीय क्षेत्रात मानवी बोधात्मक किंवा संवेदनिक कारक कार्याची दुरुस्ती आणि सहाय्य करण्याचा मार्ग म्हणून कृत्रिम बुद्धिमत्ता उदयास आली आहे. जसे की कृत्रिम अवयव (Prosthetic Limbs) नियंत्रित करण्यासाठी (Walpaw, 2002) आणि जन्माने मिळालेल्या अंधत्वावर उपचार

करण्यासाठी (Naam, 2010) प्रत्यक्ष मेंदू इम्प्लॉन्टचा वापर केला आहे.

कृत्रिम बुद्धिमत्ता आणि स्मार्टफोन:

आपल्या स्मार्टफोनमध्ये कृत्रिम बुद्धिमत्ता संचलित अनेक क्षमता आहेत. यामध्ये चेहरा ओळख समाविष्ट आहे, जी तुमचा फोन तुमच्या चेहऱ्याने अनलॉक करते. यामध्ये Voice Assistant आहे, जो नैसर्गिक भाषेत ऐकतो आणि बोलतो. Predictive Text कृत्रिम बुद्धिमत्ता जो नैसर्गिक भाषेत लिहितो.

कृत्रिम बुद्धिमत्ता आणि मानसिक आरोग्य:

मानसशास्त्र विशेषतः मानसिक आरोग्य हे कृत्रिम बुद्धिमत्तेसाठी अलीकडे लक्ष केंद्रित केलेले एक महत्त्वाचे क्षेत्र आहे. मानसशास्त्रज्ञ, मानसोपचारतज्ज्ञ व सल्लागारांसाठी मानसिक आरोग्य सेवेमध्ये बदल घडवून आणण्यासाठी तंत्रज्ञानाची अद्ययावत क्षमता आणि भविष्यातील शक्यता समजून घेणे महत्त्वाचे ठरले आहे.

लक्स्टन (Luxton, 2014) यांनी नमूद केले की कृत्रिम बुद्धिमत्ता एका व्यावसायिकाचे (Practitioner) अनुकरण करू शकते, ज्यामध्ये मानवी प्रातिरूपाच्या पलीकडील क्षमता असू शकतात. कृत्रिम बुद्धिमत्ता मानसोपचार सत्रे, e-therapy सत्रे आणि मूल्यांकन स्वायत्तपणे आयोजित करू शकते. तसेच ती व्यावसायिकाला सत्रापूर्वी, दरम्यान किंवा नंतर सहाय्य करू शकते. आव्हानात्मक प्रश्नांना दिलेला प्रतिसाद म्हणून वाढलेली हृदयगती व शरीरातील तापमानातील बदल यासारखे शारीरिक मूल्यांकन चिकित्सातज्ज्ञांना महत्त्वपूर्ण माहिती देऊ शकतात.

डेटा रेकॉर्ड करणे, रेकॉर्ड व्यवस्थापित करणे आणि स्वयंचलित फॉलो-अप क्रिया सुरू करणे यामुळे मौल्यवान वेळ वाचू शकतो.

मानसशास्त्र क्षेत्रातील कृत्रिम बुद्धिमत्तेचा वापर:

1. Detection व Computational Analysis of Psychological Signals

मानवी त्रासाचे (Human Distress) संकेत ओळखण्यासाठी भाषा, शारीरिक हावभाव आणि सामाजिक संकेतांचे विश्लेषण करण्यासाठी मशीन लर्निंग, संगणक दृष्टी आणि नैसर्गिक भाषा प्रक्रिया वापरली जाते.

2. Computer Science & Artificial Intelligence — MIT

MIT च्या Computer Science and Artificial Intelligence Laboratory ने डिजिटल व्हिडिओचे विश्लेषण करण्यासाठी व अशाब्दिक संकेत ओळखण्यासाठी कृत्रिम बुद्धिमत्तेचा यशस्वी वापर केला आहे. ते रुग्णालयातील ट्रॉमा रुग्णांच्या श्वासोच्छ्वासाच्या गतीवर किंवा त्रासात असलेल्या लहान बाळांवर देखील लक्ष ठेवू शकतात. (Hardesty, 2012)

3. Watson Health — IBM

वाटसन हेल्थ हे IBMचे कृत्रिम बुद्धिमत्ता सक्षम विश्लेषण साधन आहे, ज्याचा उद्देश माहिती, तंत्रज्ञान आणि कौशल्य एकत्र आणून व्यावसायिकांना शारीरिक व मानसिक आरोग्यसेवेत पूरक ठरणे, निदान करणे आणि उपचार सुचविणे हा आहे. (IBM, 2020)

4. R.P. VITA

रोबोट रुग्णांच्या वैद्यकीय नोंदींमध्ये प्रवेश करून त्यांच्या आरोग्यावर अल्प प्रमाणात दूरस्थपणे लक्ष ठेवतो. ही बहुविद्याशाखीय प्रणाली मानवशास्त्रीय, मज्जासंस्था, हृदय व रक्तवाहिन्या आणि अतिदक्षता काळजी मूल्यांकनांसाठी उपयुक्त आहे.

5. Mental Health Diagnostic Expert System

ही प्रणाली मानसिक आरोग्य विकारांच्या तंत्रज्ञानाला कोडमध्ये रूपांतरित करण्यासाठी प्रगत कृत्रिम बुद्धिमत्ता तंत्रज्ञानाचा वापर करते, ज्याचा उपयोग निदान व उपचारांची रूपरेषा तयार करण्यासाठी केला जातो. (Masri & Mat Jani, 2012)

6. Clinical Diagnostics & Decision Making

मानसशास्त्रीय समस्यांवर उपचारासाठी विविध संगणक-सहाय्यित मानसोपचार पद्धती वापरल्या जातात. संगणकाचा वापर वार्तनिक उपचारांसाठी थेट कार्यक्रमाद्वारे किंवा इंटरनेटद्वारे रुग्णांपर्यंत पोहोचण्यासाठी केला जातो. मानसशास्त्रज्ञ अनेक आव्हानांना सामोरे जातात (Luxton, 2014). Luxton यांनी संगणकीय चिकित्सालयीन पद्धती मांडल्या.

Mogoase (2011) यांनी आत्महत्येचा धोका असलेल्या व नसलेल्या गटांचा डेटा मायनिंग तंत्राचा वापर करून अभ्यास केला. हे तंत्र मोठ्या डेटासेटमधून नमुने व सहसंबंध शोधण्यासाठी मशीन लर्निंग, सांख्यिकी व डेटाबेस प्रणालींचा वापर करते.

ग्लोमन व सहकारी (2019) यांनी एक application वर्णन केले आहे, जे चिकित्सात्मक निदान झालेल्या आणि मानसिक विकारांनी ग्रस्त रुग्णांसाठी सतत सोबती म्हणून काम करते.

आजपर्यंत मानसिक विकार आणि वर्तनात्मक आरोग्य समस्यांसाठी 100 पेक्षा जास्त संगणक-सहाय्यित मानसोपचार कार्यक्रम विकसित झाले आहेत. (Marks, 2007)

Cognitive Remediation (CR) — बोधात्मक उपचार:

ही अलीकडच्या काळात आलेली संगणक आधारित मानसोपचार पद्धत आहे. बोधात्मक उपचाराची व्याख्या 2005 व 2012 मध्ये अद्ययावत केली गेली आहे. हा उपचार अवधान, स्मृती, सामाजिक बोधन यांसारख्या बोधात्मक कमतरतांवर

लक्ष केंद्रित करतो आणि अंतिम ध्येय कार्यात्मक परिणामांमध्ये सुधारणा करणे हे आहे.

Attention Bias Modification (ABM) — अवधान पूर्वग्रह सुधारणा:

हा एक बोधनिक पुनर्रचना कार्यक्रम आहे. यात व्यक्तींना नकारात्मकतेवरून तटस्थ किंवा सकारात्मक उत्तेजनांकडे लक्ष देण्यासाठी संगणकाद्वारे प्रशिक्षण दिले जाते. हा कार्यक्रम घरून किंवा हॉस्पिटलमध्ये ऑनलाइन दिला जातो. उद्देश — रुग्णाचे नकारात्मक पूर्वग्रह कमी करून चिंता लक्षणे कमी करणे.

Artificial Intelligence Multi-Agent:

ही संकल्पना कृत्रिम मनांना एकत्रितपणे निर्णय घेण्यासाठी आणि चिकित्सकीय सराव व संशोधनातील समस्यांवर उपाय शोधण्यासाठी वापरते. ही प्रणाली डेटा माहितीतील गुंतागुंत हाताळते, अनिश्चिततेचा सामना करून निर्णय त्वरित घेण्यास मदत करते. त्यामुळे कर्मचाऱ्यांचा वेळ कमी लागतो आणि मानवी त्रुटी कमी होऊ शकतात.

Therapeutic Computer Games:

संगणक खेळांचा वापर मानसिक आरोग्यासाठी केला जाऊ शकतो.

किशोरवयीन मुलांचा आत्मविश्वास, आत्मनिर्भरता व समस्या सोडवण्याची कौशल्ये यामुळे वाढतात. AI तंत्रज्ञानाचा वापर अनेक ऑनलाइन व सामाजिक नेटवर्क खेळांमध्ये केला जात आहे. मशीन लर्निंग संकल्पना खेळांना रुग्णांच्या गरजेनुसार जुळवून देण्यास मदत करतात.

रुग्णांना आभासी वातावरणात AI एजंटद्वारे प्रशिक्षण दिले जाऊ शकते.

मानसशास्त्रात कृत्रिम बुद्धिमत्तेचा वापर तुलनेने नवीन असला तरी स्मार्टफोन तंत्रज्ञानाच्या उपलब्धतेमुळे AI-आधारित मानसशास्त्रीय ॲप्स (Woebot, Biobase, Youper, Replika) सहज वापरता येतात.

कार्यपद्धती:

प्रस्तुत लेखात गुणात्मक (Qualitative) पद्धतीचा वापर केला असून विविध संशोधन लेख, तांत्रिक अहवाल, AI प्रणालींची माहिती, मानसोपचार कार्यक्रम आणि मानसिक आरोग्य ॲप्स यांचा अभ्यास व तुलनात्मक विश्लेषण करण्यात आला आहे.

मुख्यतः खालील क्षेत्रांचा अभ्यास करण्यात आला:

1. AI-आधारित संकेत ओळख (Language, gestures, physiology)
2. संगणक-आधारित मानसोपचार
3. AI सक्षम निदान प्रणाली
4. AI therapeutic games

5. Multi-agent AI systems

6. सिम्युलेशन आधारित मानसशास्त्रीय प्रशिक्षण

चर्चा:

मानसशास्त्रात कृत्रिम बुद्धिमत्तेचा वापर करण्याचे अनेक फायदे आहेत—निदानाची अचूकता वाढणे, रुग्णांचे अखंड निरीक्षण करणे, वैयक्तिकृत उपचारांची रचना करणे आणि मोठ्या प्रमाणातील डेटामधील लपलेले नमुने शोधणे यांसारख्या क्षमतांमुळे मानसिक आरोग्यसेवा अधिक प्रभावी बनू शकते. तथापि, या क्षेत्रात काही महत्त्वाची आव्हानेदेखील आहेत, जसे की गोपनीयता आणि डेटा सुरक्षेचे भक्कम संरक्षण, संवेदनशील मानसिक आरोग्य माहितीची सुरक्षित हाताळणी, AI मॉडेलची नैतिकता, पारदर्शकता आणि संभाव्य पूर्वग्रह यांचा विचार, तसेच मानसिक आरोग्य व्यावसायिकांना तंत्रज्ञानाचे प्रशिक्षण देण्याची गरज. याशिवाय, मानवी सहानुभूती, भावनिक समज आणि मानवी संवादाच्या गुणवत्तेची पूर्णपणे भरपाई AI करू शकत नाही. म्हणूनच, AI मानसिक आरोग्यसेवा अधिक सक्षम आणि प्रभावी बनवू शकते, परंतु ती मानवी चिकित्सकाचे स्थान घेऊ शकत नाही; उलटपक्षी, ती त्यांच्या व्यावसायिक क्षमतेला पूरक ठरते.

निष्कर्ष:

कृत्रिम बुद्धिमत्ता मानसशास्त्र क्षेत्रात एक क्रांतिकारी परिवर्तन घडवून आणत आहे. निदान, उपचार, मानसोपचार, बोधात्मक पुनर्रचना, निर्णय सहाय्य प्रणाली, आणि therapeutic gaming यांसारख्या क्षेत्रांमध्ये AI वापरल्यामुळे मानसिक आरोग्य सेवा अधिक प्रभावी, उपलब्ध आणि वैयक्तिकृत होत आहेत.

भविष्यात मानसशास्त्रज्ञ, मानसोपचारतज्ज्ञ आणि मानसिक आरोग्य व्यावसायिकांनी AI तंत्रज्ञानाचे आकलन, वापर आणि जबाबदार मार्गदर्शन करणे अत्यावश्यक आहे, ज्यामुळे रुग्ण, व्यवसाय आणि समाजाच्या फायद्यासाठी अधिक परिणामकारक मानसिक आरोग्य सेवा निर्माण होतील.

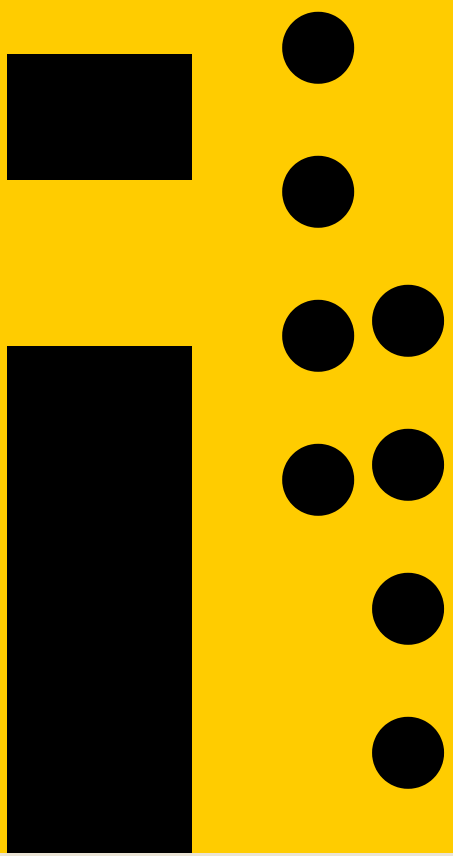
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