NURSING PRACTICE WORK ENVIRONMENT IN PUBLIC HOSPITALS: ESSENTIAL CRITERIA FOR SAFE AND QUALITY NURSING CARE

Swati S.Rane,

PhD Scholar, Centre for Hospital Management, School of Health Systems Studies Tata Institute of Social Sciences, Mumbai. Email: swati.rane@tiss.edu,swati_gem@yahoo.com

M. Mariappan,

Professor and Chairperson - Centre for Hospital Management, School of Health Systems Studies Tata Institute of Social Sciences, Mumbai. Email: marim@tiss.edu

Abstract

Aims: The aim of the study is to report perception of nurses, on practice work environment in public hospitals based on the selected 28 items out of 31 items of Practice Environment Scale of the Nursing Work Index (PES-NWI).

Background: The concept of nursing practice work environment became popular after WHO's initiatives on improving work environment of nurses in 2007-2010 in healthcare organizations across the world. There have been a numerous of studies conducted on nursing work environment across the world, however, very limited number of studies have been conducted in India. Indian healthcare has been evolving rapidly with right systems and high teachnological transformation. It is important to study this area at present. This study was one of studies conducted at Government hospitals in Maharashtra state in India.

Methodology: The data was collected from overall 4 district hospitals of selected four circles of Maharashtra States in India. A structured interview schedules was used to collect the data from nurses. And also a observation check list and personal observations were made during the data collection period. The data was analysed by the SPSS programme.

Results:

The PES-NWI scale was shown to be reliable demonstrating internal consistency with a Cronbach's alpha of the total scale of 0.9. Based on this study it is evident that nurse's perception is mixed, no clarity of favorable and unfavorable environment, composite score is 3.1 on Likert scale of 1 – 5 range. Observation shows nurses were more with paper work than nursing care at bedside, no availaibity of computers and telephone in work areas and they were found to be more stressed due to high patient strength. In evening shift it was observed that one nurse was providing nursing care to 40 -50 patients/shift.

Conclusion: This study indicates that the nurses need more autonomy and empowerment at all level that is from bedside to boardroom.

INTRODUCTION

Work environment plays crucial role in the life of a person ,1/3rd of waking hours are spent at work (Danna, K., & Griffin, R. W.1999). Work environment has various dimensions, in this current study, researcher has attempted to study practice work environment and physical work environment. Work environment has to be healthy, which is to be accepted by all and numerous studies are done on work environment and its impact on various variables like psychological wellbeing, physical wellbeing, performance, job satisfaction, employees' job behaviour and organizational effectiveness etc. (Birner2000, A.K Srivastava 2008).

In hospitals, healthy work environment has gained importance as services provided are directly linked with wellbeing of patients where errors are not acceptable .The two crucial reports which challenged the healthcare system, by Institute of Medicine (IOM)- a leader and respected analytical body providing leadership and guidance to the healthcare system in the United States: To Err Is Human: Building a Safer Health System (1999) and Crossing the Quality Chasm: A New Health System for the 21st Century (2001) (Berwick, Donald M 2011). The vital indicators patient safety and care quality are recognized in these two reports, which can be achieved by having a stable nursing work force in a healthy work environment. American Nurses Credentialing Center (ANCC) with IOM promote the healthy work environment. A report in 2004 was issued by IOM: Keeping Patients Safe: Transforming the Work Environment of Nurses (Simpson. L.2004). According to the report, the problem isn't the nature of nurses, but rather the lack of nurture of nursing, it calls for substantial transformation of nurses 'work environment to better protect patients from errors of healthcare.

BACKGROUND

In this study, the researcher has narrowed down, the healthy work environment to a specific profession and hospital setting to deeply understand the Nurses(employee) perception of their work environment. Nurses are the backbone of healthcare and we all are aware of shortage of nurses world-wide. Nurses are the numerous contributors to patient care (Brewer, &Verran, J. A. etal 2013). As a profession it is crucial that we advance our understanding of nursing role in contributing to patient outcomes.

Nightingale's with statistical knowledge in Nursing Notes1820-1910 contributed to the healing of patients, in her research has demonstrated that a healthy work environment leads to both improved patient outcomes and increased nursing satisfaction (Attewell, A.1998). In contrast unhealthy work environments have been linked with medical errors, ineffective delivery of care, conflict, and stress among health professionals (Kanai-Pak et al, M.2008, Hayes, B., Douglas2015).

In literature review it was noticed that, healthy nurse work environment is recommended in developed nations, international organisations like WHO, professional bodies like IOM, JCI etc. In United States,

work environment improvement is strongly recommended by: nursing organizations, the American Hospital Association, the Joint Commission on Accreditation of Healthcare Organizations, the IOM, The Robert Wood Johnson Foundation, Sigma Theta Tau International, and others (Wei, H.et al 2018).In Canada, the Government of Ontario and Health Canada hired Registered Nurses' Association of Ontario(RNAO) for preparing Guideline "Workplace Health, Safety and Well-being of the Nurse" which strongly recommends healthy work environment. Indian healthcare is undergoing transformation; public hospital is having ambitious goals to meet quality standards at world level.

In India, The High Level Expert Group (HLEG) on Universal Health Coverage (UHC) was constituted by the Planning Commission of India in October 2010, with the mandate of developing a framework for providing easily accessible and affordable health care to all Indians. Later Higher Power Committee was set up for improving nursing and a directive was given to respective State to have State Nursing Directorate, which is not yet implemented except West Bengal and Gujrat. Due to poor leadership structure in India Nursing work condition are poor (Varghese J.et al 2018, Bagga R etal 2009/2015). A healthy work environment is a practice setting that maximizes the health and well-being of nurses, quality patient/client outcomes, organizational performance and societal outcomes (Aiken, Linda H Sloane, Douglas MClarketal 2011 pg357-364,)

Healthcare in India is responsibility of respective State. All Government Public Hospitals come under the State. The current study is done in the State of Maharashtra in the District hospitals. In District hospitals' environment, nurses are responsible for the delivery of care, which has increasingly involved coordinating the care activities provided by other health care providers. Nursing staff are working in public hospitals in an unhealthy environment to the large extent. Public hospital nurses also compromise various things which include the working conditions, facilities, socio-psychological support to manage just day to day work which affects their work efficiency, performance and satisfaction (Mariappan, 2013). In fact, majority of the nurses in their mid-age get number of illness due to above issues.

Hence, improvements in nurses' practice environments are essential to retain productive nurses and keep patients safe. The pace of improvements in District hospitals and nurse's work environment can accelerate if evidence is translated clearly for researchers, administrators, and policymakers in both hospital set-ups and the ministry of health. Government of India has been taking interest and initiatives like "Kayakalp[1]" to bring radical changes in health sector but none are manifesting at user end. It is therefore important to get at grassroots of the problems so nursing work environment both practice work environment and physical work environment are studied. The Prime Minister of India introduced the

[1] *http://www.nhm.gov.in/publications/nhm-guidelines.html*

Swachh Bharat Abhiyan on 2nd of October, 2014 to promote cleanliness in public space. Cleanliness and hygiene are good for healthy living, but it becomes a need when we talk about health care facilities. Cleanliness not only prevents the spread of infection but also provides the patients and the visitors a positive experience.

RESEARCH METHODOLOGY

1. Study type

The study used a descriptive survey design to explore the perceptions of nurses in Indian Public hospitals regarding their nursing practice environments.

2. Study population and sample

The study population consisted of nurses working in district hospitals that provide general diagnosis, treatment and care services in Maharashtra State, India. The selected four hospitals had 700 nurses. It was decided to cover all the nursing staff for the study. However, it was possible to distribute 500 questionnaires as per the availability of the nurses and 342 interview schedules were received from the respondents. It was found that 40 forms not suitable due to missing data. Total Number of samples were 302

3. Data collection instruments

Nursing Work Index-Practice Environment Scale (PES-NWI) (Aiken et al., 2007) has been shown to be a reliable tool for the measurement of the hospital nursing practice environment. It comprises subscales of from three to ten items each. The nurse rates each item on a scale of 1 (strongly disagree) to 5 (strongly agree) to indicate whether the feature is "present in the current job." The subscales describe the nature of professional nursing practice in the original magnet hospitals:

1. Nurse participation in hospital affairs (9 items)
2. Nursing Foundations for Quality of Care (10 items)
3. Nurse Manager, ability, leadership and support of nurses (5 items)
4. Staffing and resource adequacy (4 items)
5. Collegial Nurse-Physician relations (3 items)

The first two dimensions reflect the hospital wide environment and the remaining three are inpatient ward specific

The subscale score is the average of the subscale item responses. A single "composite" score is calculated as the mean of the subscale scores. The potential score range is 1 through 5. Higher scores indicate more agreement that the subscale items are present in the current job situation. Values above 3.1 indicate agreement/Favourable Environments; values below 3.1 indicate disagreement/Unfavourable

Environments. An additional open ended question on the nurses' thoughts on their work environment was used to collect further information for discussion.

Using the PES-NWI tool, the influence of the physical ward environment in which nurses work and on overall nurse-reported nursing care outcomes and commitment is examined. In the current study 28 items were selected of the 31 items of PES-NWI tool to reduce the fatigue of nurses and addition of one item Nursing care is as per medical model, to understand nurse's awareness of nursing knowledge to differentiate and use, nursing model and medical model while providing nursing care.

Data collection

The data were collected by the investigator through face-to-face interviews with the nurses in the said hospitals after explaining the purpose of the study to them. The data collection instruments were distributed to the nurses, and they were submitted on the same day and/or after a few days.

Ethical consideration

Ethics approval for the study was received from the Research Ethics Committee of Tata Institute of Social Sciences University(IRB) and National Health Mission of India as part of PhD study. The respondents were explained that participation in the study was voluntary, withthe return of the completed questionnaire with filled consent form to participate by theindividual respondent. Respondents were assured of anonymity.

Reliability of The Scale

The PES-NWI in the present study demonstrated good internal consistency, with a Cronbach alpha coefficient of 0.9. All corrected item-total correlations are above 0.3 and the Cronbach's alpha would not increase if any of the items were deleted.

Subscales

Each of the subscales of PESNWI identified by (Lake 2002) was assessed for internal consistency with Cronbach's alpha. Each subscale had a Cronbach's alpha greater than 0.7 which indicates internal consistency and for each subscale corrected item-total correlations are greater than 0.3.

- Nurse participation in hospital affairs had a Cronbach's alpha of 0.8,
- Nursing foundations for quality of care had a Cronbach's alpha of 0.7,
- Nurse manager ability, leadership and support of nurses had a Cronbach's alpha of 0.8,
- Staffing and resource adequacy had a Cronbach's alpha of 0.7
- Collegial nurse-physician relations had a Cronbach's alpha of 0.8.

There is no increase in Cronbach's alpha by deleting any of the items of each of these subscales.

Alpha 0.9 and all the constructs are significantly correlated.

RESULT

Table -1			
Dimensions(Code/Number of Items)	Mean	SD	*3.1
Nurse Participation in Hospital Affairs(A/8)	2.44	0.79	Disagreement
Nursing Foundations for Quality Care(B/10)	3.92	0.63	Agreement
Nurse Manager Leadership, Ability, & Support (C/4)	3.63	0.96	Agreement
Adequate Staffing & Resources (D/2)	1.95	1.03	Disagreement
Collegial Nurse-Physician Relationships (E/3)	3.35	1.14	Agreement
*Values above 3.1 indicate agreement; values below 3.1 indicate disagreement. N (302)			

Table-2		
Nurse Participation in Hospital Affairs	Mean	S D
Staff nurses are involved in hospitals policy decisions making, processes	*1.90*	1.27
Opportunities exist for staff to participate in hospitals policy decisions	*2.10*	1.29
Opportunities for Career advancement are present. Like BSc Nursing,	*3.62*	1.42
Administration that listens and responds to employee concerns is present.	*2.84*	1.38
Matron is visible and accessible to staff for any official activities	3.62	1.37
Opportunities for promotions, growth are present	*2.95*	1.48
Matron is in equal power and authority with Civil Surgeon	*2.50*	1.41
Staff nurses have the opportunity to serve on hospital and nursing committees.	*2.75*	1.40
Nursing Foundations for Quality Care		
Nursing care plan is allowed to practice particularly nursing diagnoses	*1.85*	1.19
Nurses Actively participant Quality assurance program / study is present in my ward	4.32	1.07
A hand holding process in planned for newly employed nurses in my ward	4.53	0.96
Nursing care is as per medical model	3.76	1.41
Nursing care is as per nursing model	4.27	1.11
Patient care assignments that help continuity of care.	*3.04*	1.41

A clear philosophy of nursing is help the patient care environment exists on my ward.	3.59	1.32
Written, up-to-date nursing care plans for all patients.	*1.88*	0.93
Hospital Administration expects high standards of nursing care	4.22	1.10
Regular Active staff development or continuing education for nurses are present	3.75	1.37
I work with nurses who clinically very at their work and knowledge	4.03	1.13
Nurse Manager Leadership, Ability, & Support		
My head nurse / Superior is a good manager and leader.	4.06	1.21
My head nurse/Superior allows nurses to take decisions and supports nurses any conflict with physician	4.01	1.19
Nurses able to report near miss errors or mistake to superiors without criticism	3.32	1.34
Nurses get recognition for the good work	3.11	1.44
Adequate Staffing & Resources		
There are enough staff nurses to provide quality patient care.	*1.95*	1.26
Adequate housekeeping ,ward clerk support and provide quality time with patients	*1.96*	1.19
Collegial Nurse-Physician relations		
There is a lot of team work between nurses and doctors.	3.15	1.37
Doctors and nurses have good working relationships.	3.63	1.23
Doctors respect nurses and take opinions to practice jointly patient care.	3.26	1.42

Subscale analysis of the PES-NWI A mean composite score of each subscale and an overall composite score was calculated. Lake, E. T. (2002) considers 2.5 is the neutral midpoint for a 4-point response set, with values above 2.5 indicating agreement and a favourable environment and below 2.5 disagreement or an unfavourable environment. But in the current study to keep the instrument standard Likert scale was used in 5-point response set ,1 was strong disagreement and 5 strong agreements so neutral midpoint was 3.1. (Lake, E. T., &Friese, C. R. 2006) have developed a three level classification (favourable, mixed and unfavourable) to assist in interpreting the composite subscale scores. Favourable settings were those where subscale scores were greater than 3.1 5 for four or five subscales. Mixed settings had two or three subscales with scores greater than 3.1 and unfavourable settings none or one subscale. Composite score is 3 which shows mixed response and no clarity on favorable or unfavorable perception which could be due to bureaucratic structure in District Hospitals.

Quantitative:

Table 1 displays the PES-NWI subscale and composite means of hospital sample. The means indicate

that for two subscales, nurses on average disagreed that these characteristics were present

1. Nurse Participation in Hospital Affairs, mean = (2.44), SD = (.79)
2. Staffing and Resource Adequacy, mean = (1.95), SD = (1.03)

For other three subscales, nurses agreed that these characteristics were present

3. Nursing Foundations for Quality of Care, mean = (3.92), SD = (.63)
4. Nurse Manager Ability, Leadership, and Support of Nurses, mean = (3.63), SD = (.96)
5. Collegial Nurse/Physician Relations, mean = (3.35), SD = (1.14)

Composite Score is 3 which shows perception is mixed. PES NWI five constructs show significant correlation and coefficient is on lower side between r (0.30) and higher side between r (0.50).

Discussion and Implications

- **Nurses Disagreements /Unfavourable Environments**

The item in this construct Staff nurses are involved in hospitals policy decision making process Mean = 1.90 SD (1.27), which is lowest among all items in this construct. the scores on the subscales of Nurse Participation in Hospital Affairs and Staffing and Resource Adequacy were lower than 3.1,suggesting that nurses in Maharashtra District hospitals do not have enough opportunities to participate in hospital affairs to advocate to improve their staffing and resource adequacy issues .Participation in decision making by staff nurses is important because it is the staff nurse who is closest to the bedside and can affect positive patient and professional outcomes.

(Mark, B. A., Lindley, L., & Jones, C. B. 2009) findings suggest that efforts to improve working conditions for nurses, by developing organizational policies that support autonomy, participation in decision-making and relational coordination may be an economically viable means to accomplish such an objective.

Environments in which nurses are empowered to have decisional involvement have also been shown to impact positively on recruitment and retention of nurses as well as on job satisfaction(Krairiksh, M.2001) Poor staffing and fewer nursing hours per patient day has been associated higher patient fall rates and Hospital acquired pressure ulcers in a study using a linear mixed model with data from 1,751 hospital units in the National Database of Nursing Quality Indicators (NDNQI) database. The results of this study underscore the importance of including multiple characteristics of the nursing workforce to promote quality of care by incorporating all three characteristics, i.e., nursing hours, skill mix, and experience in hiring and unit staffing decisions (Dunton, Gajewski, 2007).

A study by Needlem an, Buerhaus, Stewart, Zelevinsky, and Soeren (2006) demonstrated the business case, i.e. the cost effectiveness, for increasing the proportion of nursing hours supplied by RNs, without increasing total nursing hours. The cost of increasing RN's proportion of nursing hours was less than the

cost that would have resulted from adverse events, such as failure to rescue, urinary tract infections, hospital-acquired pneumonia, upper gastrointestinal bleeding, shock, and cardiac arrest. More than 90 percent of the cost savings was associated with reduced length of stay.

Needleman, J., Buerhaus, P., Mattke, S., Stewart, M., &Zelevinsky, K. (2002) emphasized only increasing levels of staff is an incomplete measure of the quality of nursing care in hospitals, other factors such as effective communication between nurses and doctors and a positive healthy work environment have been found to influence patient's outcome. It is important to assess and track the quality of nursing care at the patient care ward level. The odds of an adverse event occurring vary by ward type, reflecting differing patient populations.

- Nurses agreements /favourable Environments

Nursing Foundations for Quality of Care, mean = (3.92), as per the survey analysis, but maintaining it without good staffing ratio is a challenge. Nurse Manager Ability, Leadership, and Support of Nurses, mean = (3.63), here again nurses are under leadership of Civil Surgeons due to which Matrons cannot take directly control of nursing care, staff ratio, equipment's and infrastructure needed by nurses. Collegial Nurse/Physician Relations, mean = (3.35).Due to bureaucratic hierarchy nurses are more into following Doctors orders . Matron is directly reporting to civil surgeon so doesn't have much powers in administrative decision-making was evident in response asked in open ended questions ,where nurses revealed that due to irregularity in promotions many experienced nurse had retired as staff nurses. Overall composite score is 3 which is mixed setting which shows nurses need more autonomy and empowerment.

Qualitative Analysis

Field Observation: It was observed that lack of nurse's direct involvement in hospital administration activities in District hospitals. Matrons were not given opportunities to participate in decision making in hospital administration, but were just following given orders of CivilSurgeons. It shows nurses in wards were more with paper work than nursing care at bedside, no availaibity of computers and telephone in work areas and they were found to be more stressed due to high patient strength. Duplication of information was seen; each ward has 30-35 books to filled by nurses daily. In evening shift it was observed that one nurse was providing nursing care to 40 -50 patients/shift.

DISCUSSION

The practice environment aids to understand provides opportunity to evaluate areas in which change may be required to retain or attract nurses in the workplace. Results from this survey of district hospitals of Maharashtra nurses indicates that the nursing practice environment as rated by the PESNWI was rated overall as favourable in the areas of – Nursing foundation for quality of care, Nurse manager ability,

leadership and support of nurses and Collegial nurse-physician relations. However less favourable ratings were found for - Nurse participation in hospital affairs and Staffing resource and adequacy. Government of Maharashtra have called of strikes many times due to poor working conditions pays, etc. Staff nurses had very less opportunities in a participatory role even on unit level related to decision making. They have to do non nursing administrative jobs like collecting fees from patients, high amount of paper work and duplicate documentation these clerical and logistics activities leads to stress. Due to this many said they feel left out and stressed. Studies shows Lake, E. T. (2007). that this directly impacts on their commitment and nurse and patient outcomes.

Limitation

The study was conducted in selected hospitals. Evary hospital is unique in their nature of practice work environment, therefore it is not possible generalize the findings.

RECOMMENDATION

1. There is a need of reviving nursing leaders to take up issues that have an impact on the environments in which nurses practice. Nursing Profession should be managed by nursing leaders and Nurses should be strategical positioned by Health Policy Makers at Central and State levels.
2. There is urgent need of structural reforms in nursing field at Central and State levels.
3. Nursing Working environments should be healthy and safe both for nurses and patients.
4. Accountability and Responsibility of patient care should be made active in appraisal of nurse.
5. Autonomy and empowerment should be given to nurses at all levels from bedside to boardroom.

BIBLIOGRAPHY

1. Aanna, K., & Griffin, R. W. (1999). Health and well-being in the workplace: A review and synthesis of the literature. Journal of Management. https://doi.org/10.1177/014920639902500305
2. Briner, R. B. (2000). Relationships between work environments, psychological environments and psychological well-being. Occupational medicine, 50(5), 299-303.
3. Srivastava, A. K. (2008). Effect of perceived work environment on employees' job behaviour and organizational effectiveness. Journal of the Indian Academy of Applied Psychology, 34(1), 47-55.
4. Berwick, D. M. (2002). A user's manual for the IOM's 'Quality Chasm'report. Health affairs, 21(3), 80-90.
5. Simpson, R. L. (2004). Technology and the IOM: Making the work environment safer. Nursing management, 35(2), 20-23.
6. Attewell, A. (1998). Florence nightingale (1820-1910). Prospects, 28(1), 151-166. doi:http://dx.doi.org/10.1007/BF02737786

7. Bronwyn Hayes, R. N., MHlthSci, C. D., & Ann Bonner, R. N. (2015). Work Environment, Job Satisfaction, Stress and Burnout AmongHaemodialysis Nurses. Journal Of Nursing Management, 23(5), 588-598.
8. E. T. (2007). The nursing practice environment. Medical Care Research and Review, 64(2_suppl), 104S-122S.
9. Kanai-Pak, M., Aiken, L. H., Sloane, D. M., &Poghosyan, L. (2008). Poor work environments and nurse inexperience are associated with burnout, job dissatisfaction and quality deficits in Japanese hospitals. Journal of clinical nursing, 17(24), 3324-3329.
10. Wei, H., Sewell, K. A., Woody, G., & Rose, M. A. (2018). The state of the science of nurse work environments in the United States: A systematic review. International Journal of Nursing Sciences.
11. Varghese, J., Blankenhorn, A., Saligram, P., Porter, J., & Sheikh, K. (2018). Setting the agenda for nurse leadership in India: what is missing. International journal for equity in health, 17(1), 98. doi:10.1186/s12939-018-0814-0
12. Bagga, R., Jaiswal, V., & Tiwari, R. (2015). Role of Directorates in Promoting Nursing and Midwifery Across the Various States of India: Call for Leadership for Reforms. Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine, 40(2), 90
13. Mariappan, M. (2013). Analysis of nursing job characteristics in public sector hospitals. Journal of Health Management, 15(2), 253-262.
14. Aiken, L. H., Sloane, D. M., Clarke, S., Poghosyan, L., Cho, E., You, L., &Aungsuroch, Y. (2011). Importance of work environments on hospital outcomes in nine countries. International Journal for Quality in Health Care, 23(4), 357-364.
15. Lake, E. T. (2002). Development of the practice environment scale of the nursing work index.
16. Mark, B. A., Jones, C. B., & Lindley, L. (2009). An Examination of Technical Efficiency, Quality and Patient Safety in Acute Care Nursing Units. Policy PolitNursPract, 10(3), 180-186.
17. Lake, E. T., &Friese, C. R. (2006). Variations in nursing practice environments: relation to staffing and hospital characteristics. Nursing research, 55(1), 1-9.
18. Krairiksh, M., & Anthony, M. K. (2001). Benefits and outcomes of staff nurses' participation in decision making. Journal of Nursing Administration, 31(1), 16-23.
19. Dunton, N., Gajewski, B., Klaus, S., & Pierson, B. (2007). The relationship of nursing workforce characteristics to patient outcomes. Online J Issues Nurs, 12(3).
20. Needleman, J., Buerhaus, P. I., Stewart, M., Zelevinsky, K., &Mattke, S. (2006). Nurse staffing in hospitals: is there a business case for quality? Health Affairs, 25(1), 204-211.

21. Needleman, J., Buerhaus, P., Mattke, S., Stewart, M., &Zelevinsky, K. (2002). Nurse staffing and quality of care in hospitals in the United States. Policy, Politics, & Nursing Practice, 3(4), 306-308.
22. Lake, E. T. (2007). The nursing practice environment: Measurement and evidence. Medical Care Research and Review, 64(Suppl. 2), 104S-122S.
23. Shirey, M. R. (2006). Authentic leaders creating healthy work environments for nursing practice. American journal of critical care, 15(3), 256-267.
24. Li, Y. F., Lake, E. T., Sales, A. E., Sharp, N. D., Greiner, G. T., Lowy, E., ...&Sochalski, J. A. (2007). Measuring nurses' practice environments with the revised nursing work index: evidence from registered nurses in the Veterans Health Administration. Research in nursing & health, 30(1), 31-44.
25. Kohn, L., Corrigan, J., & Donaldson, M. (1999). To Err is Human. Building a Safer Health System. Committee on Quality of Health Care in America. Washington, DC: Institute of Medicine.
26. Committee on Quality of Health Care in America; Institute of Medicine (2001). Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, D.C.: National Academy Press.
27. Negi, Y., &Bagga, R. (2015). Burnout among nursing professionals in tertiary care hospitals of Delhi. Journal of Health Management, 17(2), 163-177.
28. Kohli, S., &Bagga, R. Job satisfaction amongst contractual and regular nursing staff in two government hospitals of Delhi: A comparison. Health and Population-Perspectives and Issues, 36, 98-107.