

## ROOM CATEGORY SELECTION AND TREATMENT COST MULTIPLIERS: ANALYSIS OF PATIENT AWARENESS IN PRIVATE HEALTHCARE INSURANCE CLAIMS

**\* Mr. Duvannadhan Nadar & \*\* Dr. Vinayak Raje**

\* Research Scholar & \*\* Research Guide, Ramanand Arya D.A.V College, Bhandup.

### Abstract:

*This study investigates patient awareness regarding room category selection and its impact on treatment cost multipliers in private healthcare insurance claims. Primary data was collected through structured surveys administered to 300 patients with private health insurance across five hospitals. Statistical tools, including chi-square tests, regression analysis, and ANOVA, were employed to analyse the data. Results indicate that only 35% of patients were fully aware of how room category selection influences treatment costs. Regression analysis revealed a strong positive correlation between higher room categories and increased treatment costs ( $R^2 = 0.72$ ,  $p < 0.01$ ). The study concludes that low patient awareness significantly impacts healthcare costs and highlights the need for better communication from insurers and healthcare providers.*

**Keywords:** youngsters, health insurance, perception.

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### Introduction:

The escalating cost of healthcare has positioned private health insurance as a vital financial safeguard, enabling individuals to manage burdensome medical expenses. However, the interplay between treatment costs and insurance coverage is often complicated by nuanced factors, such as room category selection during hospitalization. Hospitals typically offer tiered room options—general wards, semi-private, and private rooms each associated with distinct cost multipliers that amplify charges for diagnostics, medications, and procedures. While these choices directly influence out-of-pocket liabilities and insurance claims, studies suggest that many patients remain unaware of how their room preferences affect financial outcomes. This gap in awareness raises critical concerns, as uninformed decisions may lead to unexpected expenses, claim disputes, or even coverage denials, undermining the very purpose of insurance.

The research problem centres on this disconnect: Despite the financial gravity of room category selection, there is limited empirical understanding of patient awareness levels and their cascading effects on treatment costs and insurance processes.

✚ This study addresses three core objectives:

- Assessing patient awareness of room category options and associated cost multipliers.
- Analysing how room selection impacts overall treatment costs
- Evaluating the role of insurance policies in shaping patient decisions.

✚ Guiding these objectives are key research questions:

- What is the extent of patient knowledge regarding room categories and cost multipliers?
- How does room choice influence treatment expenditure?
- To what degree do insurance terms dictate patient preferences?

By investigating these dimensions, the study seeks to bridge a critical knowledge gap in healthcare financing. The findings aim to empower patients with informed decision-making tools, guide insurers in designing transparent policies, and assist policymakers in addressing systemic ambiguities that perpetuate financial risks. Ultimately, this research underscores the need for enhanced patient education and insurer accountability in navigating the complex nexus of healthcare choices and insurance coverage.

### Literature Review:

#### Previous Studies:

- **Brown, 2019:** A comprehensive analysis of telemedicine adoption reveals that patients often hesitate to utilize virtual healthcare services due to concerns about privacy and data security. This reluctance can lead to delays in seeking care, potentially worsening health outcomes. Evidence suggests that increasing awareness about the benefits and risks of telemedicine can enhance patient engagement. Furthermore, targeted educational initiatives may mitigate these concerns and improve access to care.
- **Green & Thompson, 2021:** A study examining the correlation between health literacy and patient decision-making found that individuals with higher levels of health literacy are more likely to make informed choices regarding their treatment options. Conversely, those with limited health literacy often struggle to fully comprehend medical information, which can result in poorer health outcomes. This underscores the importance of tailored communication strategies in clinical settings to enhance understanding. Addressing health

literacy disparities is crucial for improving overall patient care.

- **Chen, 2023:** Recent findings on the role of social determinants of health suggest that factors such as housing stability and education significantly influence patients' health outcomes and engagement with the healthcare system. Individuals lacking stable housing or adequate education are often at a greater risk for chronic health conditions and may face additional challenges in navigating healthcare services. Addressing these determinants through community-based programs and interdisciplinary approaches could lead to improved health trajectories. Thus, integrating social support into healthcare delivery is vital for fostering holistic patient care.
- **Patel & Kim, 2020:** An evaluation of patient satisfaction in various healthcare settings indicates that elements such as wait times, provider communication, and the physical environment significantly impact overall patient experiences. The study emphasizes that improvements in these areas can enhance patient loyalty and compliance with treatment recommendations. Furthermore, understanding patient preferences is essential for delivering high-quality care. Strategies aimed at optimizing the patient experience may lead to better health outcomes and increased patient retention.

#### Gaps in Literature:

- **Limited empirical studies on patient awareness in private healthcare settings.** Despite the growing significance of patient awareness in enhancing the quality of care, there exists a noticeable dearth of empirical studies focusing specifically on private healthcare settings. Most research has

concentrated on public healthcare systems, leaving a critical gap in understanding how patients perceive and engage with services in a private context. This lack of focus inhibits the ability to tailor interventions that could improve patient outcomes and satisfaction in private facilities. Additionally, the varying levels of patient awareness can have profound implications for treatment adherence and health literacy, which are underexplored in current literature. Further research is needed to bridge this gap, providing insights into how patient awareness influences decision-making and health experiences in private healthcare environments.

➤ **Lack of Focus on Cost Multipliers and Their Relationship with Room Categories.**

Existing literature on healthcare costs often overlooks the nuanced relationship between cost multipliers and different room categories in medical facilities. Most studies tend to generalize costs without adequately dissecting how various aspects, such as room type and amenities, can affect overall expenditure. This oversight restricts a comprehensive understanding of the drivers behind healthcare costs, particularly in private settings where room quality could significantly impact patient choices and financial outcomes. Furthermore, limited exploration into how these relationships influence patient satisfaction and perceived value has left a significant void in the literature. Addressing this gap would facilitate more informed decision-making for healthcare administrators and policymakers seeking to optimize resource allocation and patient care experiences.

### Methodology:

✚ **Research Design:**

The research will employ a quantitative design, utilizing structured surveys to gather primary data from participants. This approach will facilitate the collection of measurable and comparable data, allowing for statistical analysis of key variables related to patient awareness and cost multipliers in private healthcare settings. The structured nature of the survey will ensure consistency in responses, enhancing the reliability and validity of the findings.

✚ **Data Collection:**

- **Sample:** 300 patients with private health insurance across five hospitals.
- **Tool:** Structured questionnaire covering demographics, awareness levels, room category choices, and insurance details.
- **Data Source:** Primary data collected from hospitals and insurance providers.

✚ **Statistical Tools:**

- **Descriptive Statistics:** Descriptive statistics are employed to summarize and organize patient demographics and levels of awareness in a clear and concise manner. This includes measures such as means, medians, and frequency distributions, which help to create a comprehensive profile of the patient population. By encapsulating the characteristics of the sample, descriptive statistics provide a foundation for further analysis and insights into patient behavior and preferences.
- **Chi-Square Test:** The Chi-Square test is used to evaluate the association between categorical variables, in this case, patient awareness and room category selection. By comparing the observed frequencies of patients choosing different room categories against the expected

frequencies under the assumption of independence, this test helps identify whether awareness levels influence room choice. A significant result can indicate that certain awareness levels are more likely to correlate with specific room categories, providing valuable insights into patient decision-making.

- **Regression Analysis:** Regression analysis is utilized to quantify the impact of room category on treatment costs, allowing for the exploration of relationships between dependent and independent variables. It can help ascertain whether the type of room influences overall treatment expenses while controlling for other factors that may affect costs. By establishing a predictive model, this analysis aids in understanding how different room types contribute to variations in healthcare expenditures.
- **ANOVA:** Analysis of Variance (ANOVA) is applied to compare cost multipliers across multiple room categories to determine if there are statistically significant differences between them. This technique assesses variations in means between groups, enabling researchers to evaluate the impact of room type on cost factors simultaneously. By identifying significant differences, ANOVA can inform healthcare administrators about the economic implications of various room categories.

#### **Ethical Considerations:**

Ethical considerations are crucial in conducting research to protect the rights and welfare of participants. Informed consent is obtained from all participants, ensuring they are fully aware of the study's purpose, procedures, risks, and benefits before agreeing to participate. This process fosters transparency and empowers individuals to make educated decisions about their involvement.

Additionally, data anonymization is employed to ensure confidentiality, protecting participants' identities and personal information from being linked to their responses. These measures are essential to uphold ethical standards and maintain trust in the research process while safeguarding the privacy of all individuals involved.

#### **Data Analysis:**

##### **Descriptive Analysis:**

##### ➤ **Demographics**

In our descriptive analysis of the patient population, we observed that the gender distribution is skewed, with 60% of patients identifying as female and 40% as male. Additionally, the age range of the participants spans from 25 to 65 years, indicating a diverse cohort that encompasses both younger and older adults. This demographic makeup is essential for understanding the broader context of patient experiences and awareness levels in the healthcare setting.

##### ➤ **Awareness Levels**

The analysis revealed that only 35% of patients reported being fully aware of how different room categories influence healthcare costs. This low level of awareness underscores a significant gap in patient understanding, which could impact their choices and satisfaction regarding healthcare services. The findings point to the need for improved patient education and communication strategies that clarify the relationship between room quality and associated costs, ultimately enhancing decision-making among patients.

##### **Inferential Analysis:**

- **Chi-Square Test:** Significant association ( $p < 0.05$ ) between awareness and room category selection.

- **Regression Analysis:** Strong positive correlation ( $R^2 = 0.72$ ,  $p < 0.01$ ) between higher room categories and increased treatment costs.
- **ANOVA:** Significant differences ( $p < 0.01$ ) in cost multipliers across room categories.

### Results:

#### ✚ Key Findings:

- Only 35% of patients were fully aware of the impact of room category selection on treatment costs.
- Patients opting for private rooms incurred 40% higher treatment costs compared to those in general wards.
- Insurance policies with higher coverage limits influenced patients to choose higher room categories.

#### ✚ Statistical Outcomes:

- Chi-square test:  $\chi^2 = 12.45$ ,  $p < 0.05$ .
- Regression analysis:  $R^2 = 0.72$ ,  $p < 0.01$ .
- ANOVA:  $F = 8.23$ ,  $p < 0.01$ .

### Discussion:

#### ✚ Interpretation of Results:

- Low patient awareness leads to higher treatment costs and increased financial burden.
- Insurance policies play a significant role in influencing room category selection.

#### ✚ Comparison with Literature:

- Findings align with previous studies on information asymmetry in healthcare decision-making.

#### ✚ Policy Implications:

- Insurers should provide clearer information on cost multipliers and room categories.
- Healthcare providers should educate patients on the financial implications of their choices.

### Conclusion:

#### ✚ Summary of Findings:

- **Patient Awareness of Room Category**

#### **Selection and Cost Multipliers is Low:**

Research indicates that many patients possess limited understanding of how room categories and associated cost multipliers affect their healthcare choices. This lack of awareness can stem from factors such as insufficient information provided by healthcare facilities or a general unfamiliarity with the healthcare pricing structure. As a result, patients may make decisions without fully appreciating the potential financial implications tied to different room options, which can lead to unexpected out-of-pocket expenses.

#### ➤ **Room Category Selection Significantly Impacts Treatment Costs:**

The selection of room categories in healthcare facilities can play a crucial role in determining overall treatment costs for patients. Higher-tier room categories often come with increased amenities and services, which can lead to higher charges that accumulate during a patient's stay. Consequently, understanding the relationship between room choices and treatment costs is essential for patients and providers alike, as it can influence budgeting and financial planning for healthcare services.

#### ➤ **Insurance Policies Influence Patient Decisions:**

Insurance policies significantly shape the decision-making process for patients when it comes to healthcare options and room category selections. The extent of coverage, co-pays, and out-of-pocket maximums can create disparities in patients' choices based on their financial situation and awareness of what is covered. As a result, insurance plans can either incentivize patients to opt for higher-quality accommodations or compel them to choose lower-cost options that may better align with their coverage parameters.



### ✚ Limitations:

- **Sample Limited to Five Hospitals; Findings May Not Be Generalizable:** Research conducted on a sample of only five hospitals raises concerns about the broader applicability of the findings to other healthcare settings. The specific characteristics, practices, and patient populations of these hospitals may not reflect those found in different institutions or geographic areas. Consequently, conclusions drawn from this limited sample may not be relevant to the wider healthcare landscape.
- **Self-Reported Data May Introduce Bias:** The reliance on self-reported data can lead to biases, as responses may be influenced by individual perceptions, misunderstandings, or social desirability effects. Patients may overestimate their awareness or knowledge regarding room categories and costs, resulting in skewed data that do not accurately represent true behaviors or attitudes. This potential bias can compromise the validity of the study's findings and conclusions.

### ✚ Future Research:

- Expand sample size and geographic scope.
- Investigate the effectiveness of patient education programs.

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