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Infection Prevention Control Linking to the Enhancement of Hospital Efficiency and Hospital Internal Reputation

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Abstract
Perception of Infection Prevention and Control practice among 250 hospital staff members out of which there are 113 females and 137 males in various areas of the institution both clinically and non-clinically was assessed using a structured questionnaire. The hospital efficiency and internal reputation are hampered by Infection Prevention and Control measures for which this study was conducted. Statistical analysis with SPSS indicated that critical care procedures like sputum suction care and tracheal intubation have a strong correlation to pose an increased risk for infection, while basic nursing and physical examination were not so risky. Conversely, the study found that perceptions of Infection Prevention and Control are not at all influenced by demographic factors such as age and gender. Overall, such findings point out the importance of putting more focus on high-risk activities by hospitals coupled with continued training of staff in infection control practices. Future research-based recommendations for this study are sample size and the role of advanced technologies for Infection Prevention and Control.
Keywords: *Infection Prevention Control · Hospital efficiency · Hospital Internal Reputation · SPSS · hospital staff perceptions · Infection risks*

1. INTRODUCTION

According to the CDC (2022), at least one in 31 hospital patients and one in 43 nursing home residents develops a healthcare-associated infection (HAI), which increases patient morbidity, mortality, and hospital costs. Common HAIs include urinary tract infections, surgical site infections, bacteraemia, and pneumonia, as highlighted by Haque et al. (2018). These infections extend hospital stays and burden staff, reducing efficiency, as shown by Jia et al. (2019), while also negatively impacting internal reputation due to decreased employee satisfaction, as stated by Cakir et al. (2014). Infection prevention and control (IPC), as defined by WHO (2016), is an evidence-based approach that protects both patients and staff. Key initiatives include surveillance systems like NNIS and NHSN, as well as standards from NABH and QCI. Despite these, loopholes persist, as declared by Bearman et al. (2019). The NIOSH hierarchy of controls—elimination, substitution, engineering, administrative controls, and PPE—provides a structured model for IPC assessment, especially during crises like COVID-19, as mentioned by Li et al. (2022).
Hospital efficiency and IPC are closely linked, with studies showing that poor planning and high workload reduce performance, as highlighted by Weigl et al. (2011) and Colombi et al. (2017), while technological adoption enhances it, as shown by Shahi et al. (2021a). Internal reputation is also influenced by IPC practices, as employees assess organizational values through visible commitments to safety and care, as mentioned by Harvey et al. (2021). Compliance with basic measures—masks, sanitization, and waste disposal—further supports staff engagement and institutional credibility, as stated by Desai & Mehrotra (2020) and Roberge (2016). Since infection control, efficiency, and reputation are interrelated, this research explores their connection using the hierarchy of controls as a guiding framework. Therefore, this research will try to seek answers to the following questions:
RQ1 To explore the factors that collectively improve the Infection Prevention and Control in Indian Hospitals?
RQ2 How Infection Prevention and Control factors effect hospital efficiency in India?
RQ3 How hospital efficiency effects hospital internal reputation in Indian hospitals?

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Theoretical underpinnings

2.1.1. Infection Prevention Control

The concept of sustainable development emerged from efforts to conserve and protect the environment, culminating in the 2030 Agenda for Sustainable Development in 2016, which outlined 17 global goals, as shown by Nunes et al. (2016). Among these is the goal of ensuring healthy lives and promoting well-

being for all. According to the UN (2016), quality healthcare and accessible treatment can reduce mortality and morbidity while ensuring sustainable use of resources. Infection Prevention and Control (IPC) directly aligns with UNSDG 3, which focuses on health for all. Studies have shown that federated learning-enabled AI systems can support decentralized, data-driven IPC practices that enhance hospital efficiency and internal reputation, as mentioned by Shahi & Mittal (2024). Indicators generated by UNSDGs guide health policies, while poor sanitation and limited access to care increase disease burdens and hinder development goals, as Hak et al. (2016) and Sweileh (2020) stated.

Infection risk control begins with elimination—the most effective yet hardest to implement—followed by engineering and administrative controls that reduce risk at the source and shape behavior through policies and training. These have proven effective in airborne infection control and improving hospital efficiency, as highlighted by Archana & Amit (2021). Personal protective equipment (PPE), while less effective on its own due to reliance on compliance, still plays a vital role. As Cinaroglu (2014) notes, patients often evaluate hospital quality based on perceived reputation—shaped in part by visible IPC measures—especially in a healthcare sector marked by asymmetric information.

2.1.2. Hospital Efficiency

Hospital efficiency involves providing quality care, optimizing resources, and managing healthcare costs effectively. To prevent hospital-acquired infections, operations must follow well-defined protocols, as HAIs increase morbidity, mortality, hospital stays, and economic burden, as explained by Jia et al. (2019). Effective control requires surveillance, isolation, outbreak management, hygiene, and staff education. Vokes et al. (2018) emphasized that pay-for-performance systems enhance infection control through quality care and sanitation practices. Incorporating NIOSH's hierarchy of controls—elimination, substitution, engineering, administrative measures, and personal protective equipment—provides a structured approach. Studies by Coia et al. (2013), Ghafur et al. (2013), and Lai et al. (2020) confirm these measures are crucial for limiting disease spread, especially airborne infections, as shown by Morawska et al. (2020). Hospitals applying such frameworks improve patient safety, reduce preventable costs, and optimize resource use.

2.1.3. Hospital Internal Reputation

Hospital internal reputation significantly influences employee engagement, performance, and retention. When supported by transparent communication, ethical practices, and a positive work environment, it fosters trust, encouraging staff to align with organizational values and deliver better patient care. Research shows that a strong internal reputation attracts and retains professionals, promotes collaboration, and improves job satisfaction—factors that contribute to a motivated and effective workforce, as expressed by Harvey et al. (2021) and Men (2014). It also serves as a source of resilience during crises, as valued employees remain committed under pressure. Building internal reputation involves regular feedback, recognition, and inclusivity, ultimately strengthening patient trust and institutional credibility.

2.2 Hypothesis development

This section addresses various research questions concerning infection prevention and control in Indian hospitals. The literature is classified under two subtopics: the former discusses critical factors affecting Infection Prevention and Control, while the latter describes the relationship between these factors and hospital performance.

2.2.1 Factors Influencing Infection Prevention and Control (IPC)

Infection prevention and control is a multidimensional strategy essential for ensuring patient safety and improving the quality of care in hospitals. Researchers have identified several critical factors influencing IPC practices, emphasizing their role in preventing nosocomial infections and reducing healthcare costs. A key component is the removal of infection-containing particles. According to Phan et al. (2019), effective cleaning procedures—such as frequent surface disinfection and proper waste disposal—significantly reduce the risk of hospital-associated infections. Their study showed that hospitals with strict cleaning protocols experienced a substantial decline in infection rates. Thus, hypothesis one would be:

H1(a) Highly effective eradication of infected particles contributes to hospital productivity.

Installation of engineering controls is another factor that affects Infection prevention and control. Appropriate ventilation and air filtration in health settings are quite essential. The researchers noted that bettered atmospheric quality with enhanced ventilation diminished the airborne pathogens, and this improved the outcome of Infection prevention and control.

H1(b) The engineering controls put in place in hospitals are positively correlated with the productivity of a hospital.

Staff training and following guidelines are also crucial administrative controls in Infection prevention and control. The training of health care personnel correlates with the improvement of Infection prevention and control compliance followed by the decrease in outbreak cases of infection. Therefore, administrative measures play a direct role in deciding the effectiveness of the implemented Infection prevention and control measures followed by increased efficiency in hospitals.
H1(c) The impact of administrative controls by hospitals on efficiency in the hospital is very positive.
Another area is the role played by personal protective equipment in protecting healthcare staff and patients. According to Colombi et al. (2017), "PPE kits provide a vital barrier to prevent pathogen transmission in the hospitals." Indeed, their study found that infection rates both among the healthcare staff and patients were significantly lower when such facilities emphasized PPE use.
H1(d) The environmental controls, such as using PPE kits, have a very positive impact on efficiency in hospitals.
The substitution of dangerous substances by safer ones is another important factor in Infection prevention and control. The implementation of safer materials facilitates a health environment for both healthcare providers and patients. Their research showed that hospitals implementing greener practices possessed better Infection prevention and control results.
H1(e) Substitution of harmful chemicals has a positive effect on the efficiencies in hospitals.
Together, these hypothesis inform the key drivers that influence Infection prevention and control and, in turn, their resultant impact on hospital efficiency. These relationships are significant in the formulation of strategic Infection prevention and controls that foster improved health care in general.

2.2.2 The Effect of Hospital Efficiency on Hospital Internal Reputation

Such efficiency is not only important in a hospital for patient care, but it also describes how people portray the hospitals regarding their reputation among their personnel and other stakeholders. Improving hospital efficiency seems to go with a better hospital internal reputation, which is caused by factors like low percentages of infections, impeccable patient care, and high satisfaction levels of staff.
H2: Hospital efficiency has a significant and positive impact on the hospital internal reputation of the hospitals within India.
Hospitals with effective Infection prevention and control measures and better operational efficiencies have a better reputation in the community in which they operate. Hospital internal reputation is significant to develop because it could enhance the morale of the employees and bring in talent into the institution in a notable study.
Another reason to invest in Infection prevention and control strategies is that there is a link between in-hospital efficiency and reputation. A hospital that sets up effective Infection prevention and control not only drops its infection rates but also increases its overall efficiency and reputation.

2.3 Summary of Hypothesis

From the above discussions, the following hypothesis were derived:
H1a: Elimination of infected particles has a positive effect on hospital efficiency.
H1b: Engineering controls in hospitals installed have a positive relation with efficiency in hospitals.
H1c: The hospital efficiency has been found to be significantly positively influenced by administrative controls in hospitals.
H1d: Environmental controls, for example, PPE kits installation, have some significant positive impacts on the efficiency of hospitals.
H1e: The substitution with hazardous substances has significant positive influences on hospital efficiency.
H2: Efficient hospitals have a considerably strong positive association with hospital internal reputation in India.
This series of hypothesis covers an extensive framework to explain the interrelationship among the variables of Infection Prevention Control, hospital efficiency, and hospital internal reputation. Through the empirical validation of these relationships, healthcare administrators can design strategies that improve infection prevention and control practice to enhance patient outcomes and the overall reputation of the health care delivery system in India.

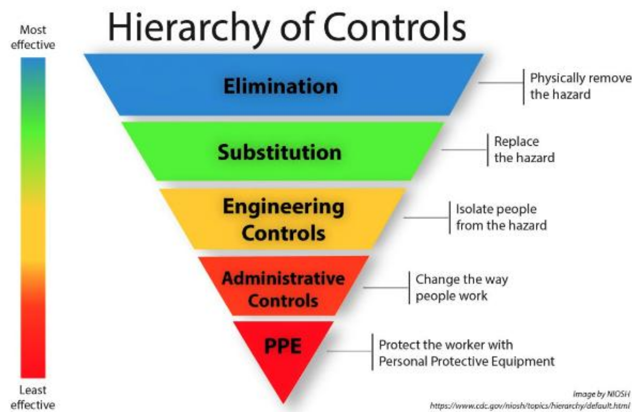

Figure 1 CDC Hierarchy of Controls

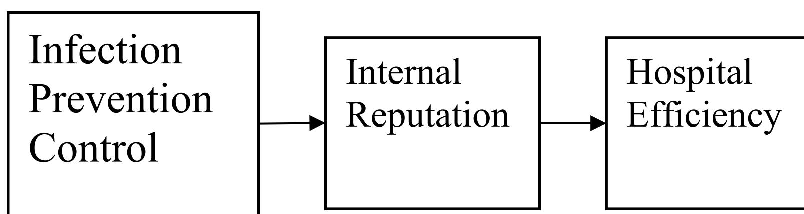

Figure 2 Conceptual Framework

3. METHODOLOGY

This section covers sampling strategy, instrumentation, data collection techniques, and pre-liminary data quality checks.

3.1 Sampling strategy

The sampling technique used in the study was purposive sampling in which 250 participants from the staff of the hospital involved in this study were selected mainly because they had direct experience in dealing with infection control measures. The participants were selected purposively and they had adequate knowledge of infection prevention and control practices in their various settings. This way the sample included both clinical and non-clinical personnel having knowledge about infection prevention and control to identify what kind of infection prevention and control measures are perceived as effective and ineffective and how those measures positively or negatively influence the hospital's efficiency and hospital internal reputation.

3.2 Instrumentation

A structured survey was adopted as the major data collection technique. Basic demographic questions were asked, and the rest of the questions were on a Likert Scale with values running from Strongly Disagree to Strongly Agree. Some of these responses were given numerical codes for analysis in the SPSS software for statistical analysis. Survey questions were aimed at the identified infection prevention and control practices, the perceived risk of infection from these practices, and the consequences on the functioning of the hospital.

3.3 Data Collection

The survey was carried out in the hospital organization on Tuesday focusing on the workers in the sectors that have a higher probability of getting infected such as ICUs, operating units and emergency. This study used questionnaires where the participants were given either online questionnaires if they were available online or face-to-face questionnaires. To obtain a higher response rate, the process of data collection was done over two weeks.

3.4 Initial Data Screening

During data cleaning, the categorical responses (Action, Agree, Disagree, Neutral, and Strongly Agree) were first transformed into a numerical form a total of 5 (ranging from 1-5). By using SPPS, the presence of any missing or outlier values in the result was discovered. Subsequently, the mean values and the standard deviation were computed for all the variables to make the assessments for inter-reliability to

establish the accuracy of the data obtained for subsequent analysis.

3.5 Common method bias

Primarily, the data were examined to check the common method bias (CMB). Harman'single factor test was performed by Harman (1976). This procedure involves "constraining all the scale items into a single unrotated factor in exploratory factor analysis, with the assumption that if a substantial amount of common method variance exists, a single factor will emerge or one general factor will account for the majority of the covariance among the measures.

3.6 Demographic Profile

The demographic demographics of participants are diverse. The gender distribution of the respondents was 113 females and 137 males, giving a 45.2% and 54.8 % response rate in respect of gender in the sample. Based on marital status 181 participants were married and 69 were unmarried. In terms of their age, 163 of the participants were between 23 and 38 years, 82 participants were between 39 and 54 years, and 5 participant was between 55 and 73 years of age. This profile gave a clear insight into the beliefs of a wide range of hospital staff, including demographic categories about infection prevention perception.

4. RESULTS AND FINDINGS

4.1 Statistical **Analysis**

Based on the above literature review, statistical analysis was conducted to analyze how infection prevention and control affects the efficiency and reputation of the hospitals. As revealed earlier, SPSS software analysed the 250 responses of all the staff members in the hospital. The structured survey produced categorical responses regarding whether the respondents agree or disagree with the existing infection prevention and control practices. Such categorical responses are converted into numerical codes, for example, "Agree" is coded as 1, "Strongly Agree" as 5, so that comprehensive statistical analysis and presentation of the results can be made about the outcome.

To validate the accuracy and reliability of the data, the mean values and standard deviations were obtained on all variables. The composite reliability was also ascertained.

Using the same methodology, the correlation also revealed some statistically significant associations of infection risks with some medical care such as sputum suction care and tracheal intubation. Some however, such as physical examination have less strength of association with infection risks. These associations proved to form a basis for improvement of infection prevention and control strategies, in turn improving hospital efficiency and hospital internal reputation(Result SPSS (2)).

SPSS software the mean value and standard deviation are acquired based on all the responses. First of all, there has been converting all the text data into statistical data and after that the analytical procedure. The text responses such as **"Agree, Disagree, Neither Agree nor Disagree, Strongly Agree and Strongly Disagree"** into **"1, 2, 3, 4 and 5"**. The N value is 250 which indicates that the number of observations for the analysis is 250.

The frequency of Females and Males is 113 and 137 and the percentage of Females and Males is 45.2 and 54.8. The frequency of married and unmarried participants is 181 and 69. On the other hand, the frequency of participants between the ages of 23 to 38 is 163, between 39 to 54 is 82 and 55 to 73 is 5. The other demographic analysis all been represented through all the model above.

4.2 Structural model

The presented data indicate the following high standard means for controllable infection causes in hospitals: sputum suction care with 1.370, inadequate provision of protective equipment with 1.442. Most of the variables have an acceptable level of composite reliability over 1.5. The results also indicate that there are strong inter-relations between perceived causes of hospital infections. "Sputum suction care and basic nursing" have a small to moderate positive relationship, and "physical examination and pharyngeal swab collection" have a strong positive relationship. Indeed, tracheal incubation appeared to have a closer association with basic nursing (r =.280) and collection of pharyngeal swabs (r =.471). The highest value of the correlation, equal to 0.682, is observed between the perceived risk of infection between patients during manual ventilation on one hand and the physical examination of the patient on the other hand. The data also confirms that several activities in a hospital setting including "sputum suction care, tracheal intubation, manual ventilation before incubation and others" are supported as

sources of infection by having high C.R and where the p-values are greater than .05. However, the activities like basic nursing, pharyngeal swab collection, and physical examination are not backed up as the sources of infection as the C.R values are very high. Thus, infection risks are pointed to only several important procedures.

Table 1: Structure Table
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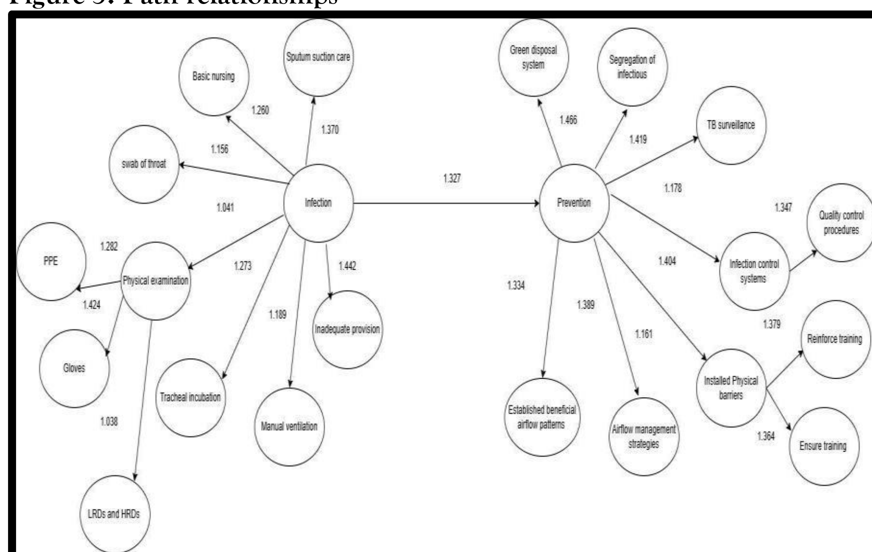
	S.E	Std. estimate	C.R	P	Result
I think Sputum suction care is a significant cause of infection among people in the hospital	.087	1.370	31	.128	Supported
I think Basic nursing is a significant cause of infection among people in the hospital	.080	1.260	25	.235	Supported
I think Pharyngeal swab collection (swab of throat) is a significant cause of infection among people in the hospital	.073	1.156	21	.195	Supported
I think Physical examination is a significant cause of infection among people in the hospital	.066	1.041	20	.243	Supported
I think Tracheal incubation is a significant cause of infection among people in the hospital	.081	1.273	19	***	Not-Supported
I think Manual ventilation before incubation is a significant cause of infection among people	.075	1.189	15	.136	Supported

in the hospital					
Inadequate provision of protective equipment is a significant cause of infection among people	.091	1.442	14	.175	Supported
Insufficient protection provided by the personal protective equipment (PPE) is a significant cause of infection among people in the hospital	.081	1.282	20	***	Not-Supported
Types, layers, and lengths of gloves used by all participants is a significant cause of infection among people in the hospital	.090	1.424	18	.178	Supported
Working in LRDs (Low-risk departments) and HRDs (High-risk departments) percentage in their routine work is a significant cause of infection among people in the hospital	.066	1.038	17	.257	Supported
Our hospital has adopted a green disposal system for controlling infections	.093	1.466	21	***	Not-Supported
We do segregation of infectious cases at our hospital	.090	1.419	22	***	Not-Supported

Our hospital does TB surveillance from time to time in health care workers at all levels	**.075**	**1.178**	**20**	**.440**	**Supported**
Infection control committees are in place	**.089**	**1.404**	**13**	**.293**	**Supported**
Physical barriers have been installed in hospital to reduce between-patient and patient-visitor	**.073**	**1.161**	**14**	**.494**	**Supported**
Airflow management strategies are in place to reduce direct transfer of infectious aerosol	**.088**	**1.389**	**17**	**.127**	**Supported**
The hospital has established beneficial airflow patterns to reduce infections	**084**	**1.334**	**25**	***	**Not-Supported**
We ensure training of all healthcare workers at all levels with role-specific practical instruction	**.086**	**1.364**	**18**	**.474**	**Supported**
We reinforce training to provide frequent reminders of key points	**.087**	**1.379**	**25**	***	**Not-Supported**
Quality control procedures are in place to assess adherence to policies and procedures	**.085**	**1.347**	**27**	**476**	**Supported**

set for Infection Prevention Control					
I am confident that our patients can differentiate us from another hospital	**.084**	**1.327**	**33**	**.25 3**	**Supporte d**
We have seen that our patients are happy with our services	**.086**	**1.352**	**29**	*******	**Not-Supporte d**

Figure 3: Path relationships



The above relationship demonstrates the estimated value between all the variables and their relationship. The research proposed the following hypothesis to be tested in the study: There was an analysis done about the effects of infection prevention and control (IPC) and efficiency of the hospitals and internal hospital reputation. The fact is that core care, like sputum suction care, tracheal intubation, and manual ventilation had the highest infection rates with moderate to strong associations. Simple nursing care and physical examination that are said to carry with them some infection risks were not quantified with statistics. Neither age, gender, nor marital status contributed significantly towards the perception of infection. The overall level of composite reliability was satisfactory with most of the variables and the discriminant validity showed the existence of interrelationships between perceived infection sources. Therefore, more research should be conducted to identify and address the infection prevention and control strategies that might improve efficiency and the internal image of the hospital as well as to target risky procedures.

5. DISCUSSIONS AND CONCLUSIONS

The study throws light on the relationship between infection prevention and control practices and their outcomes on the effectiveness of a hospital and its hospital internal reputation. It was based on purposive sampling of 250 clinical and non-clinical staff within a hospital having knowledge about infection prevention and control to find out which practices of infection prevention and control are considered the most effective in improving outcomes within a hospital. Thus, it may be observed that the conclusions of this study reflect the requirement for improvement in high-risk infection transmission practices such

as sputum suction care and tracheal intubation. Since these procedures involve direct contact with bodily fluids from patients, these procedures are considered to carry a significant risk of infection, which is compatible with the strong positive correlations present between infection risks and these procedures as expressed by Ghafur et al. (2013); Fernando et al. (2017).

Other procedures, like physical examination and general nursing care, which were conceptualized theoretically to be related to infection risks, had less statistical correlations. This means that through high p values and C.R values, all these variables statistically held no significance, and further research has to be done as to whether they, in fact, represent a really significant source of infection or whether this actually depicts better deficiencies in staff awareness or procedural accuracy as stated by Salah et al. (1997) and Schaffzin et al. (2020).

The research went ahead to elucidate demographic attributes, like gender, marital status, and age, that did not affect perceptions of infection prevention and control effectiveness as shown by Smith et al. (2008). In this regard, it could be one of the merits because the message brought out that infection control is such a shared service which really was equally understood by different staff who were in various hospital departments in terms of demographics.

Aside from this, utilizing data analysis techniques SPSS, the study revealed moderate reliability in terms of measurement variables of basic nursing and pharyngeal swab collection. Such a finding reflects that when applied to questioning, most of the infection prevention and control measures are recognized to be slightly reliable. It is seen that the Cronbach's alpha scores established moderate to weak reliability for many infection prevention and control practices shown by World Health Organization (2016); Weigl et al. (2011).

The interrelation between perceived infection risks, as depicted by the high correlation between manual ventilation and physical examination, suggests further that the staff may be aware of very few infection risk situations while grossly underestimating others as expressed by Şanliöz et al. (2022); Roberge (2016). Some correlation patterns point further to a perception of staff that some high-risk procedures, such as tracheal intubation, seem to have stronger associations with infections than typical nursing practices.

This study's findings, therefore, further suggest that infection prevention and control is an essential practice in maintaining the efficiency and reputation of hospitals. From the procedures included in this study, sputum suction care and tracheal intubation were determined to be potential sources of infection, with moderate to strong perceived associations between infection risks and mechanisms of infection transmission. On the other hand, elementary nursing care and physical examinations are all within the scope of the infection prevention and control protocols but less likely to fall into the significant infection risks. The existing difference sheds light on a strong opportunity for hospitals to review their infection control strategies in order to target priority areas that are really needed.

The demographic variables seem to have not significantly influenced the staff perception with respect to the effectiveness of infection prevention and control measures, which might be suggestive of the fact that the concerns of infection prevention and control are uniformly recognized by the various personnel groups as stated by Ahmad et al. (2018); Amato et al. (2020); ARHAI Scotland (2022). The fact that several variables are modestly reliable and that many high-risk activities depicted strong interrelationships indicates the presence of further scope for continuous improvement of infection prevention and control measures in order to add value to the composite outcome of the hospital. The infection prevention and control strategies that can otherwise advance the efficiency and reputation of a hospital require further research. In particular, the intervention into high-risk procedures is encouraged as shown by Dooley and Frieden (2020).

6. Implications of the study

The implications of the study are far-reaching for the management and policy in the department of health. Knowing which procedures pose the greatest risk of infection allows hospitals to sharpen their infection prevention and control strategies to effectively target high-risk procedures. This will ensure proper allocation of resources so that patient safety will improve and, consequently, so will infection rates. Moreover, it puts into question the need for continuous staff training; it cannot stress enough infection control necessity for all departments. These findings can, therefore, be used by policymakers to formulate concrete guidelines and hospital policies that are evidence-based while in good alignment with the identified risks. Better outcomes in hospitals and a good reputation can result from this.

6.1 Theoretical Implications

This study contributes to the literature on sustainable consumption behaviour and adds to the growing body of work on infection control, particularly in identifying procedure-specific practices critical to hospital efficiency. While prior studies have recognized the role of infection prevention and control (IPC) in improving outcomes, this study offers unique insights by statistically identifying high-risk procedures such as sputum suction care and tracheal intubation using SPSS analysis. These findings challenge the assumption that all procedures carry equal infection risk and suggest that future IPC models should account for the varying levels of risk associated with different hospital activities.

Additionally, the study found that demographic factors such as age, gender, and marital status did not significantly influence staff perceptions of IPC effectiveness, contrasting with previous research. This may reflect a shared understanding among healthcare workers of IPC as a collective responsibility. Overall, the study emphasizes the need for targeted procedural interventions and supports more nuanced planning in infection control strategies.

6.2 Practical Implications

The practical implications of this research are intended for hospital administrators, frontline infection control officers, and policy analysts. Emphasis should be placed on strengthening infection prevention and control (IPC) protocols for high-risk procedures like sputum suction care and tracheal intubation, which require more training, equipment, and procedural refinement. These activities should also undergo stricter monitoring and evaluation to ensure compliance with updated IPC standards.

Although procedures like basic nursing care and physical examination showed weaker associations with infection risk, they still require attention in terms of staff education and adherence to IPC practices. Ensuring that all staff understand and implement IPC measures uniformly will help reduce infection risks across departments. Since demographic factors did not influence IPC perception, standardized hospital-wide training focused on critical control areas remains essential.

6.3 Limitations and future directions

This research has certain limitations. The sample size of 250 participants may not adequately represent larger hospital populations, and the use of purposive sampling could introduce selection bias by excluding staff not directly involved in infection prevention and control (IPC). The reliance on self-reported data may also lead to social desirability bias. Additionally, as the study was limited to one hospital, its findings cannot be generalized to other healthcare settings with varying protocols or infection risks. Future studies should adopt a larger, more diverse sample and a multi-hospital approach to improve generalizability.

Further research should explore IPC practices across multiple hospitals and include a broader range of healthcare professionals to better understand diverse perceptions. Longitudinal studies could assess the long-term impact of IPC improvements on hospital efficiency and internal reputation. Moreover, the integration of advanced technologies like AI-driven infection monitoring systems holds promise for enhancing infection control and patient outcomes.

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