

Short Paper

Knowledge, Attitudes, Practices, and Compliance on Pressure Injury Prevention Among Staff Nurses and the Prevalence of Hospital-Acquired Pressure Injuries in the Intensive Cluster Area

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Abstract

This descriptive correlational study examined the levels of knowledge, attitudes, practices, and compliance of staff nurses regarding pressure injury prevention and their relationship to the prevalence of hospital-acquired pressure injuries (HAPIs) in the intensive cluster area of a private tertiary hospital in Metro Manila. The respondents were registered nurses aged 20–50 years, currently employed in the intensive cluster area, and with at least six months of work experience. Data were collected using a questionnaire that measured the nurses' knowledge, attitudes, practices, and compliance related to pressure injury prevention. Quantitative analysis revealed that nurses consistently rated themselves as “always” across all parameters (knowledge \bar{x} =4.554; attitude \bar{x} =4.7225; practices \bar{x} =4.644; and compliance \bar{x} =4.703), indicating a high level of competency. Correlation analysis demonstrated strong and statistically significant relationships between compliance and practice ($r=0.788$, $p < .001$), compliance and attitude ($r = 0.760$, $p < .001$), and compliance and knowledge ($r=0.725$, $p < .001$), respectively. Also, highlighting their interrelated nature, inter-variable correlation was observed between knowledge and practice ($r = 0.832$, $p < .001$), attitude and knowledge ($r = 0.797$, $p < .001$), and attitude and practice ($r = 0.767$, $p < .001$). However, chi-square analysis showed that only the variable practice was significantly associated with HAPI prevalence, 34.3 ($df = 16$, $p = 0.005$), whereas knowledge and attitudes were not. These findings suggest that while knowledge



and positive attitudes provide a necessary foundation, the consistent application of evidence-based nursing practice plays a more critical role in reducing pressure injury rates. The study therefore recommends ongoing training, regular performance monitoring, and reinforcement of clinical protocols to sustain and enhance patient safety outcomes.

Keywords – pressure injury prevention, hospital-acquired injuries, intensive care, compliance, patient safety

INTRODUCTION

Pressure injuries, commonly referred to as *pressure ulcers or bedsores*, continue to pose a significant challenge in healthcare, especially within intensive care units (ICUs). These injuries, though preventable, frequently occur, leading to extended hospital stays, increased patient suffering, and higher healthcare expenses. This study explores the knowledge, attitudes, practices, and compliance (KAPC) of ICU nurses in preventing pressure injuries and examines their correlation with the incidence of hospital-acquired pressure injuries (Forni et al., 2021).

Preventing pressure injuries requires a multifaceted approach, including thorough risk assessments, effective patient management, and the implementation of evidence-based interventions such as regular repositioning, the use of pressure-relieving devices, and meticulous skin care (Smith et al., 2020). Despite the proven clinical and cost-effective benefits of these strategies, many nurses still face knowledge gaps regarding risk factors and preventive measures, often due to insufficient training.

Positive attitudes toward prevention and a supportive organizational culture are critical for ensuring adherence to these measures (Smith et al., 2020). However, inconsistencies in practice and non-compliance with protocols remain significant barriers. Additional challenges, such as time constraints and limited resources, further hinder effective prevention efforts. Addressing these issues requires a concerted effort to provide ongoing education, continuous training, and the promotion of a safety-oriented culture (Lyder & Ayello, 2020).

By improving nurses' KAPC, healthcare organizations can significantly reduce the prevalence of pressure injuries (Lyder & Ayello, 2020). This not only enhances patient care and outcomes but also aligns with the broader goal of delivering high-quality, patient-centered care. Ultimately, fostering a proactive approach to prevention can alleviate patient discomfort, minimize healthcare costs, and improve overall healthcare delivery in ICUs.

LITERATURE REVIEW

Pressure injuries (PIs) are a significant concern in healthcare settings, often leading to patient discomfort, prolonged hospital stays, and increased healthcare costs. Staff nurses play a pivotal role in preventing PIs, and their knowledge, attitudes, practices, and compliance with prevention protocols are critical to achieving positive outcomes. This essay explores the interplay between these factors and their impact on PI prevention.

Knowledge is the foundation of effective PI prevention (Smith et al., 2020). Nurses must understand the risk factors, stages of pressure injuries, and evidence-based prevention strategies. Studies have shown that nurses with comprehensive knowledge are better equipped to identify at-risk patients and implement appropriate interventions. However, gaps in knowledge persist, particularly in recognizing early signs of PIs and understanding the use of specialized equipment, such as pressure-relieving mattresses (Muhammed et al., 2020).

Knowledge is the foundation of effective pressure injury prevention. Nurses must be well-versed in the risk factors, early signs, and preventive measures for pressure injuries (Smith et al., 2020). Studies indicate that while many nurses possess a basic understanding of pressure injury prevention, there are gaps in their knowledge, particularly in identifying early-stage pressure injuries and implementing evidence-based interventions (Muhammed et al., 2020). For instance, some nurses may lack awareness of the importance of skin assessment tools like the Braden Scale, which is used to assess a patient's risk of developing pressure injuries. Additionally, misconceptions about the use of preventive devices, such as specialized mattresses and cushions, may hinder effective prevention efforts. Continuous education and training programs are essential to bridge these knowledge gaps and ensure that nurses are equipped with the latest evidence-based practices.

Attitudes significantly influence nurses' commitment to PI prevention. A positive attitude fosters proactive behavior and adherence to prevention guidelines. Conversely, negative attitudes, such as viewing PI prevention as time-consuming or low priority, can hinder compliance. Encouraging a culture of accountability and emphasizing the ethical responsibility to prevent patient harm can help shape positive attitudes (Etafa et al., 2020).

Practices refer to the actions nurses take to prevent PIs, such as regular repositioning, skin assessments, and the use of preventative devices. While many nurses adhere to these practices, barriers such as heavy workloads, inadequate staffing, and a lack of resources can limit their effectiveness. Addressing these barriers through organizational support and training is essential (Johnson et al., 2020).

Attitudes significantly influence nurses' willingness to engage in preventive practices (Etafa et al., 2020). A positive attitude toward pressure injury prevention is often associated with a strong sense of responsibility and commitment to patient care. However,

some nurses may perceive pressure injury prevention as time-consuming or secondary to other critical tasks, especially in high-pressure environments like ICUs. This mindset can lead to non-compliance with preventive protocols. Addressing these attitudes requires fostering a culture of accountability and emphasizing the importance of pressure injury prevention as a core component of patient care. Encouraging open communication and providing feedback on the impact of preventive measures can also motivate nurses to adopt a proactive approach.

Effective pressure injury prevention relies on consistent and evidence-based practices. Key preventive measures include regular repositioning of patients, maintaining skin hygiene, using pressure-relieving devices, and ensuring adequate nutrition and hydration. However, compliance with these practices varies among nurses due to factors such as workload, staffing shortages, and lack of resources (Lyder and Ayello, 2020). In ICUs, where patients are often critically ill and require frequent interventions, implementing preventive measures can be particularly challenging. Studies have shown that adherence to repositioning schedules is often compromised, leading to an increased risk of pressure injuries. Lyder and Ayello (2020) emphasize that to improve compliance, healthcare institutions must provide adequate resources, such as sufficient staffing and access to preventive devices, and establish clear protocols for pressure injury prevention.

Compliance with PI prevention protocols is crucial for reducing incidence rates. Compliance is influenced by knowledge, attitudes, and workplace factors. Regular audits, feedback, and continuous education can enhance compliance and ensure sustained improvements in care (Lyder and Ayello, 2020).

Intensive cluster areas, including ICUs, are high-risk environments for HAPIs due to the complex medical conditions and immobility of patients. The prevalence of HAPIs in these areas varies across studies but remains a significant concern. For example, research indicates that the incidence of HAPIs in ICUs ranges from 10% to 30%, depending on the patient population and preventive measures in place (Forni et al., 2021). Critically ill patients, particularly those with prolonged ICU stays, are at the highest risk of developing pressure injuries. Factors contributing to the high prevalence include the use of medical devices (e.g., ventilators and catheters), hemodynamic instability, and limited mobility. Addressing this issue requires a multifaceted approach, including enhanced preventive strategies, regular monitoring, and targeted interventions for high-risk patients.

Several barriers hinder effective pressure injury prevention in intensive cluster areas. One major challenge is the high workload and time constraints faced by nurses, which can limit their ability to perform preventive tasks such as regular repositioning. Additionally, inadequate training and a lack of awareness of updated guidelines can lead to suboptimal practices. Resource limitations, such as insufficient access to pressure-relieving devices and specialized wound care products, further exacerbate the problem. Organizational factors, including lack of leadership support and ineffective communication, can also impede compliance with preventive protocols. Overcoming these

barriers requires a collaborative effort involving healthcare administrators, educators, and frontline staff.

Optimizing nurses' knowledge, fostering positive attitudes, supporting effective practices, and ensuring compliance are essential for successful PI prevention. By addressing these factors, healthcare organizations can improve patient outcomes and reduce the burden of pressure injuries.

Pressure injuries (PIs) are a significant concern in healthcare settings, particularly in intensive care units (ICUs) or intensive cluster area where patients are often immobile and critically ill. These injuries not only cause physical suffering but also increase healthcare costs and prolong hospital stays. Understanding the knowledge, attitudes, and practices (KAP) of healthcare providers regarding PI prevention is crucial to reducing the prevalence of hospital-acquired pressure injuries (HAPIs) in ICUs.

Healthcare professionals in ICUs generally possess a high level of knowledge about PI prevention, including risk factors such as immobility, poor nutrition, and moisture (Moore & Patton, 2019). However, this knowledge does not always translate into consistent practice. Studies have shown that while nurses and other staff are aware of preventive measures like regular repositioning, the use of pressure-relieving devices, and skin assessments, compliance with these practices can be inconsistent due to high workloads, time constraints, and inadequate staffing.

Attitudes toward PI prevention are often positive, with many healthcare providers recognizing the importance of proactive care to reduce patient harm (Etafa et al., 2020). However, gaps in attitudes can arise when staff perceive PI prevention as a lower priority compared to other critical care tasks. This highlights the need for ongoing education and a culture shift to emphasize the value of PI prevention in improving patient outcomes (Muhammed et al., 2020).

Compliance with PI prevention protocols is a key factor in reducing HAPI rates. Lyder and Ayello (2020) emphasize that regular training, clear guidelines, and supportive leadership can enhance adherence to best practices. Additionally, the use of technology, such as electronic health records to track risk assessments and interventions, can improve accountability and consistency.

In conclusion, while healthcare providers in ICUs generally have the knowledge and positive attitudes needed to prevent PIs, translating these into consistent practices remains a challenge. Addressing barriers to compliance and fostering a culture of prevention are essential steps toward reducing the prevalence of HAPIs and improving patient care in intensive care settings.

METHODOLOGY

Research Design

This study utilized a descriptive correlational research design and included a survey questionnaire to assess the level of knowledge, attitudes, practices, and compliance on pressure injury prevention among staff nurses in the intensive cluster area tertiary hospital.

Research Instrument

The questionnaire consists of four parts: Level of Knowledge of Pressure Injury among staff nurses, consisting of 10 questions; Level of Attitude on Pressure Injury among staff nurses, also consisting of 10 questions; Level of Practices on Pressure Injury Prevention among staff nurses, which includes 10 questions; and Level of Compliance on Pressure Injury Prevention among staff nurses, comprising of 7 questions.

Respondents

The respondents were registered nurses with a valid license from the Philippine Regulatory Commission, currently employed in the intensive cluster area of the hospital, aged 20 – 50 years old, and lastly having a minimum of six months of experience working in the intensive cluster area.

Data Analysis

Data processing was performed using SPSS. To identify significant relationships between knowledge, attitudes, practices of pressure injury prevention, and adherence to preventive measures, statistical methods, including correlation analysis, were applied. Correlation analysis (either Pearson or Spearman rank correlation) was used to explore the relationships between staff nurses' knowledge, attitudes, and practices regarding pressure injury prevention, as well as the prevalence of hospital-acquired pressure injuries among patients in the Intensive Cluster Area. A five-point Likert Scale was employed to categorize responses into simple dichotomies, excluding middle responses (Kandula, 2025).

RESULTS

Table 1 presents the average weighted mean scores for the levels of knowledge, attitudes, practices, and compliance among staff nurses regarding pressure injury prevention. All four parameters—knowledge, attitudes, practices, and compliance—received scores above 4.5, with the highest score being for attitudes (4.7225) and the lowest for knowledge (4.554). These scores are uniformly described as "Always," indicating that staff nurses consistently demonstrate high levels of understanding, positive attitudes, effective practices, and adherence to protocols in preventing pressure injuries.

The high level of knowledge (4.554) suggests that nurses are well-informed about the principles and strategies for pressure injury prevention (Moore & Patton, 2020; Smith et al., 2020; Lee et al., 2022). This is a critical foundation, as knowledge directly influences their ability to implement evidence-based practices. The slightly higher score for attitudes (4.7225) reflects a strong commitment and positive mindset toward preventing pressure injuries, which is essential for sustaining proactive efforts in clinical settings (The Joint Commission, 2022), (Moore & Patton, 2020), (Muhammed et al., 2020), (Reddy et al., 2020), (Yan et al., 2022).

The scores for practices (4.644) and compliance (4.703) indicate that nurses not only understand the importance of pressure injury prevention but also consistently apply this knowledge in their daily routines (Reddy et al., 2020; Muhammed et al., 2020), (Yan et al., 2022; Lyder & Ayello, 2021). Compliance with protocols is particularly crucial, as it ensures standardized care and minimizes the risk of pressure injuries among patients (Smith et al., 2020; Moore & Patton, 2020; Johnson et al., 2020; Yan et al., 2022).

Overall, the results highlight a highly competent and motivated nursing workforce in this context. However, the slightly lower score for knowledge suggests room for further education and training to ensure that nurses remain updated on the latest evidence-based practices. Continuous professional development and reinforcement of protocols can further enhance these already strong outcomes.

Table 1. Level of Knowledge, Attitudes, Practices, and Compliance on Pressure Injury Prevention among Staff Nurses

Parameter	Average Weighted Mean	Description
Level of Knowledge	4.554	Always
Level of Attitudes	4.7225	Always
Level of Practices	4.644	Always
Level of Compliance	4.703	Always

Scale: 4.51 – 5.00: Always; 3.51 – 4.50: Often; 2.51 – 3.50: Sometimes; 1.51 – 2.50: Seldom; 1.0 – 1.50: Never

The data in Table 2 provides the prevalence of hospital-acquired pressure injuries (HAPIs) in the intensive cluster area of a private hospital in Metro Manila over three months: September, October, and November 2023. The numbers reveal a significant decline in HAPI cases, from 17 in September to 2 in October, and a slight increase to 3 in November. This trend suggests both successes and ongoing challenges in the hospital’s efforts to prevent pressure injuries (Moore & Patton, 2020).

The sharp decrease in HAPI cases from September to October (a reduction of 15 cases) is noteworthy and may indicate the implementation of effective preventive measures. Possible interventions could include enhanced staff training on pressure injury prevention, improved patient repositioning protocols, the use of specialized support

surfaces, or more rigorous skin assessment practices. However, the slight uptick in November (from 2 to 3 cases) suggests that while improvements were made, sustaining these gains requires consistent effort. This fluctuation could also reflect variability in patient acuity, staffing levels, or adherence to protocols.

The high number of cases in September (17) highlights a critical area for improvement, as pressure injuries are largely preventable and often indicate gaps in care quality (The Joint Commission, 2022). The data underscores the importance of continuous monitoring and evaluation of preventive strategies to ensure they are effective and sustainable (Muhammed et al., 2020). Additionally, the hospital may need to investigate factors contributing to the initial high prevalence, such as workload, resource availability, or patient characteristics.

In conclusion, the data demonstrates progress in reducing HAPIs, particularly from September to October, but also emphasizes the need for ongoing vigilance and refinement of preventive measures. Addressing the slight increase in November will be crucial to maintaining the positive trend and ensuring patient safety in the intensive care setting or intensive cluster area.

Table 2. Prevalence of Hospital-Acquired Pressure Injuries in the Intensive Cluster Area of a Private Hospital in Metro Manila

Month	Number of Cases
September 2023	17
October 2023	2
November 2023	3

The correlation matrix in Table 3 provides valuable insights into the relationships between knowledge, attitude, practices, and compliance in pressure injury prevention. Pearson’s values indicate the strength and direction of these relationships, while the p-values confirm their statistical significance.

The analysis reveals strong positive correlations between compliance and the other variables. Compliance has a high correlation with knowledge ($r = 0.725, p < .001$), attitude ($r = 0.760, p < .001$), and practices ($r = 0.788, p < .001$). This suggests that higher levels of knowledge, more positive attitudes, and better practices are associated with greater compliance with pressure injury prevention measures. This underscores the importance of addressing all three factors—knowledge, attitude, and practices—to improve compliance in healthcare settings (Yan et al., 2022; Lyder & Ayello, 2021).

The relationships among knowledge, attitude, and practices are also notably strong. Knowledge is highly correlated with attitude ($r = 0.797, p < .001$) and practices ($r = 0.832, p < .001$), indicating that individuals with greater knowledge tend to have more positive attitudes and engage in better practices. Similarly, attitude and practices are strongly correlated ($r = 0.767, p < .001$), reinforcing the idea that positive attitudes are

closely linked to effective implementation of prevention strategies (Yan et al., 2022; Lyder & Ayello, 2021), (Moore & Patton, 2020).

Overall, these findings highlight the interconnectedness of knowledge, attitude, practices, and compliance in pressure injury prevention. To enhance compliance, interventions should focus on improving knowledge, fostering positive attitudes, and promoting best practices. The strong correlations suggest that addressing one area may positively influence the others, creating a synergistic effect in improving overall compliance and reducing the incidence of pressure injuries (Johnson et al., 2020; Moore & Patton, 2020).

Table 3. Significant Relationship between Knowledge, Attitude, and Practices of Pressure Injury Prevention and the Level of Compliance

		Correlation Matrix			
		Compliance	Knowledge	Attitude	Practice
Compliance	Pearson's r	—			
	Df	—			
	p-value	—			
Knowledge	Pearson's r	0.725	—		
	Df	98	—		
	p-value	< .001	—		
Attitude	Pearson's r	0.760	0.797	—	
	Df	98	98	—	
	p-value	< .001	< .001	—	
Practice	Pearson's r	0.788	0.832	0.767	—
	Df	98	98	98	—
	p-value	< .001	< .001	< .001	—

Table 4 reveals the narrative analysis of the relationship between staff nurse compliance with pressure injury prevention and the prevalence of hospital-acquired pressure injuries among Intensive Care Unit patients or patients in the intensive cluster areas.

The most significant finding is the relationship between nurses' practices and the prevalence of HAPIs, with a χ^2 value of 34.3, 16 degrees of freedom (df), and a p-value of 0.005. This strong statistical significance ($p < 0.05$) suggests that the nurses' practices in pressure injury prevention have a meaningful impact on reducing the prevalence of HAPIs. This highlights the importance of effective implementation of preventive measures, such as regular patient repositioning, proper use of pressure-relieving devices, and adherence to clinical guidelines, in mitigating the risk of pressure injuries in intensive care settings. (Muhammed et al., 2020), (Yan et al., 2022; Lyder & Ayello, 2021), (Johnson et al., 2020).

In contrast, the relationship between nurses' knowledge and the prevalence of HAPIs is not statistically significant, with a χ^2 value of 11.7, 19 df, and a p-value of 0.896. This

indicates that while nurses may possess adequate knowledge about pressure injury prevention, this knowledge alone does not directly translate into a reduction in HAPIs. Similarly, the relationship between nurses' attitudes and the prevalence of HAPIs is also not significant, with a χ^2 value of 19.9, 14 df, and a p-value of 0.134. This suggests that positive attitudes toward pressure injury prevention, while important, are insufficient to influence outcomes without practical application.

Overall, the findings emphasize that nurses' practices are the most critical factor in reducing HAPIs. This underscores the need for healthcare institutions to focus on training programs that enhance practical skills and ensure consistent adherence to preventive protocols, rather than solely emphasizing theoretical knowledge or attitude change (Etafa et al., 2020).

Table 4. Significant Relationship Between the Knowledge, Attitude, and Practices of Pressure Injury Prevention Among the Staff Nurse Respondents and the Prevalence Rate of Hospital-Acquired Pressure Injuries Among Intensive Cluster Area Patients

χ^2 Tests	Value	df	P
Prevalence of Injury to Practice χ^2	34.3	16	0.005
Prevalence of Injury to Knowledge χ^2	11.7	19	0.896
Prevalence of Injury to Attitude χ^2	19.9	14	0.134

DISCUSSIONS

The results presented in Table 1 provide a comprehensive view of staff nurses' knowledge, attitudes, practices, and compliance concerning pressure injury prevention. All parameters achieved ratings within the highest range, indicating a consistent and commendable commitment by nurses toward maintaining quality patient care standards. Notably, attitudes scored the highest, followed closely by compliance, practices, and knowledge, respectively. While these values reflect excellent performance across all domains, they also suggest subtle distinctions that merit further examination. Such insights are critical for sustaining and improving pressure injury prevention programs in healthcare settings.

The high knowledge score reflects that staff nurses possess a strong foundational understanding of pressure injury prevention strategies. As Moore and Patton (2020) and Smith et al. (2020) emphasize, knowledge is central to initiating effective prevention, including risk assessment, repositioning techniques, and skin integrity monitoring. However, being the lowest among the four parameters, it signals an opportunity for ongoing training. This aligns with findings by Lee et al. (2022), who argue that while

baseline knowledge may be strong, constant updates on emerging practices and technological advancements are essential for optimizing outcomes in patient care.

Attitudes receiving the highest score are a promising indicator, suggesting that staff nurses hold a strong sense of responsibility and proactive engagement toward pressure injury prevention. According to The Joint Commission (2022), a positive attitude enhances the likelihood of sustained compliance and vigilance, especially in high-risk environments. Furthermore, Moore and Patton (2020) and Reddy et al. (2006) confirm that positive attitudes often catalyze behavioral adherence to best practices. The results also reflect a growing awareness of ethical and patient-centered care values, which Yan et al. (2022) emphasize as being essential in fostering a culture of safety.

The closely linked parameters of practice and compliance demonstrate that nurses are not only theoretically knowledgeable and attitudinally aligned, but also behaviorally consistent in implementing protocols. These scores reinforce findings by Muhammed et al. (2020) and Lyder & Ayello (2021), who report that high levels of practice and compliance are associated with structured training, effective supervision, and institutional support. Compliance, in particular, underscores adherence to standardized guidelines, which Smith et al. (2020) and Johnson et al. (2020) identify as instrumental in reducing incidence rates of hospital-acquired pressure injuries. Hence, this finding suggests a high-functioning clinical environment with robust policy enforcement mechanisms.

On the other hand, the data presented in Table 2 on the prevalence of hospital-acquired pressure injuries (HAPIs) in the intensive cluster area of a private hospital in Metro Manila reflects a noteworthy shift in patient safety outcomes over three months. The marked decline from 17 cases in September 2023 to just 2 in October, followed by a slight increase to 3 in November, suggests a dynamic situation where initial interventions may have yielded immediate success but faced challenges in sustaining results. This trend aligns with literature emphasizing that reductions in pressure injuries often follow quality improvement initiatives but require long-term reinforcement to maintain (Moore & Patton, 2020). It is essential to interpret this data not merely as numbers but as indicators of clinical practice performance and organizational commitment to patient safety.

The high number of HAPI cases in September serves as a critical reference point for evaluating the hospital's baseline performance. According to The Joint Commission (2022), pressure injuries are considered a "never event" in many healthcare settings, meaning they should be preventable through adherence to established safety protocols. A prevalence of 17 cases in one month, particularly within an intensive care cluster, raises concerns about care delivery processes, including delayed risk assessment, inadequate repositioning schedules, or suboptimal wound care practices. Furthermore, patient-related factors such as immobility, poor nutrition, and chronic conditions must be evaluated in tandem with systemic factors such as staff workload, turnover, or availability of preventive equipment (Muhammed et al., 2020). An in-depth root cause analysis could offer valuable insights into the conditions that allowed such a spike.

Moreover, the results presented in Table 3 reveal a statistically significant and strong positive correlation between the level of compliance with pressure injury prevention protocols and the knowledge, attitude, and practices (KAP) of healthcare providers. Most notably, the highest correlation was observed between compliance and practice ($r = 0.788, p < .001$), suggesting that improved practical application of prevention measures is closely associated with higher compliance. This is followed by the correlations between compliance and attitude ($r = 0.760, p < .001$), and compliance and knowledge ($r = 0.725, p < .001$). These findings support the premise that comprehensive education and training efforts targeting both cognitive (knowledge) and behavioral (practice and attitude) domains are integral to promoting adherence to pressure injury prevention standards.

The interrelationship among knowledge, attitude, and practice further reinforces this interpretation. The strongest inter-variable correlation was observed between knowledge and practice ($r = 0.832, p < .001$), indicating that those with a higher understanding of pressure injury prevention are significantly more likely to implement appropriate practices. Similarly, attitude was positively correlated with both knowledge ($r = 0.797, p < .001$) and practice ($r = 0.767, p < .001$), suggesting that a favorable mindset toward pressure injury prevention is both informed by knowledge and influential in translating that knowledge into clinical action. These relationships align with the KAP model (Launiala, 2009), which posits that knowledge informs attitudes, which then drive practice.

The findings highlight a highly interconnected framework, wherein knowledge, attitudes, and practices are mutually reinforcing, and each has a significant impact on compliance with pressure injury prevention protocols. This is supported by similar results in previous studies, such as those by Moore and Cowman (2012), which demonstrated that ongoing staff education improved both attitudes and adherence to prevention protocols. The implications for practice are substantial: healthcare institutions should focus on integrated interventions that concurrently address all three dimensions of the KAP framework to optimize compliance. Furthermore, these results advocate for a systemic approach in policy formulation—ensuring that training programs not only enhance factual knowledge but also actively foster positive attitudes and develop hands-on skills for sustainable practice.

Finally, the findings presented in Table 4 highlight the statistical relationships between staff nurses' knowledge, attitude, and practices (KAP) on pressure injury prevention and the actual prevalence of hospital-acquired pressure injuries (HAPIs) among patients in intensive cluster areas. Among the three KAP domains, practice demonstrated a statistically significant relationship with the prevalence of pressure injuries, as evidenced by a chi-square value of 34.3 ($df = 16, p = 0.005$). This suggests that nurses' practical application of preventive measures has a direct and meaningful influence on patient outcomes, particularly in reducing the incidence of HAPIs. This aligns with studies such as those by Tayyib et al. (2016), which emphasized that consistent implementation of

evidence-based pressure injury prevention protocols (e.g., repositioning, skin assessments, moisture management) correlates with lower injury rates in critical care settings.

In contrast, knowledge and attitude did not show statistically significant associations with the prevalence of pressure injuries. For knowledge, the chi-square value was 11.7 with 19 degrees of freedom and a p-value of 0.896, while for attitude, the value was 19.9 with 14 degrees of freedom and a p-value of 0.134. These findings indicate that while staff nurses may possess adequate theoretical knowledge and positive attitudes toward pressure injury prevention, these elements alone do not directly translate to reduced injury rates unless they are operationalized through proper practice. Previous research by Moore and Cowman (2012) supports this, highlighting a frequent disconnect between knowledge and implementation in clinical practice, often due to systemic barriers such as staffing constraints, workload, or lack of resources.

This discrepancy underscores the critical importance of bridging the knowledge-to-practice gap in pressure injury prevention. Interventions focused solely on education and attitude change may be insufficient unless they are accompanied by systems-level support that facilitates actual practice—such as clinical audits, reminders, ongoing mentorship, and workflow integration. The findings from Table 4 thus reinforce the idea that practice is the pivotal factor influencing patient safety in intensive care settings. It calls for hospital administrators and clinical educators to prioritize not just training but also the enabling environments and accountability mechanisms that allow staff nurses to consistently carry out preventive practices, ultimately improving patient care outcomes.

CONCLUSIONS AND RECOMMENDATIONS

The findings from Tables 1 to 4 provide a comprehensive understanding of the levels of knowledge, attitudes, practices, and compliance among staff nurses regarding pressure injury prevention, as well as their impact on the prevalence of hospital-acquired pressure injuries (HAPIs). The data reveal that staff nurses consistently demonstrate high levels of knowledge (4.554), positive attitudes (4.7225), effective practices (4.644), and compliance (4.703) in preventing pressure injuries, as indicated by their “Always” ratings. These results highlight a highly competent and motivated nursing workforce, which is essential for maintaining patient safety and care quality.

The significant decline in HAPI cases from September to October 2023 (from 17 to 2 cases) suggests the successful implementation of preventive measures, such as enhanced training, improved protocols, and the use of specialized equipment. However, the slight increase in November (from 2 to 3 cases) underscores the need for sustained efforts and continuous monitoring to maintain these improvements. The high number of cases in September also indicates potential gaps in care that require further investigation and intervention.

The correlation analysis in Table 3 demonstrates strong positive relationships between knowledge, attitudes, practices, and compliance, emphasizing their interconnectedness in pressure injury prevention. Notably, practices were found to have the most significant impact on reducing HAPIs, as evidenced by the statistically significant relationship in Table 4 ($\chi^2 = 34.3$, $p = 0.005$). This highlights the critical role of practical implementation in achieving positive outcomes, even when knowledge and attitudes are already strong.

Based on these findings, the following recommendations are proposed: a) Enhance Knowledge Through Continuous Education: While the level of knowledge among nurses is high, there is room for improvement. Regular training sessions, workshops, and access to updated evidence-based guidelines should be provided to ensure nurses remain informed about the latest advancements in pressure injury prevention.; b) Promote Positive Attitudes and Motivation: Positive attitudes are crucial for sustaining proactive efforts. Healthcare institutions should foster a culture of excellence and patient safety by recognizing and rewarding nurses who demonstrate exceptional commitment to pressure injury prevention.; c) Focus on Practical Skills and Implementation: Given the strong impact of practices on reducing HAPIs, training programs should emphasize hands-on skills, such as proper patient repositioning, use of pressure-relieving devices, and adherence to clinical protocols. Simulation-based training and mentorship programs can be effective in enhancing practical competencies. Ensure Consistent Compliance: Compliance with protocols is essential for standardizing care. Regular audits, feedback mechanisms, and reminders can help reinforce adherence to preventive measures. Additionally, addressing barriers to compliance, such as workload or resource limitations, is critical. Finally, e) Monitor and Evaluate Preventive Strategies: Continuous monitoring of HAPI prevalence and evaluation of preventive measures are necessary to identify trends, address gaps, and sustain improvements. Data-driven approaches should be employed to refine strategies and ensure their effectiveness.

In conclusion, while the nursing staff demonstrates strong knowledge, attitudes, practices, and compliance in pressure injury prevention, ongoing efforts are needed to maintain and enhance these outcomes. By focusing on continuous education, practical skills, and consistent compliance, healthcare institutions can further reduce the prevalence of HAPIs and ensure optimal patient care.

IMPLICATIONS

The findings reveal that staff nurses exhibit consistently high levels of knowledge, attitudes, practices, and compliance regarding pressure injury prevention, with all scores above 4.5. This indicates a strong foundation for effective prevention strategies in clinical settings. The highest score for attitudes (4.7225) underscores the nurses' proactive and positive mindset, which is crucial for sustaining long-term efforts in preventing pressure injuries. Meanwhile, the slightly lower score for knowledge (4.554) suggests that while nurses are well-informed, there is room for improvement through ongoing education and

training. This is particularly important as knowledge directly influences the implementation of evidence-based practices. The high scores for practices (4.644) and compliance (4.703) demonstrate that nurses effectively translate their understanding into daily routines and adhere to standardized protocols, which are essential for minimizing patient risk. These results highlight a highly competent and motivated nursing workforce. However, to maintain and enhance these outcomes, continuous professional development is recommended. Regular training sessions, updates on the latest evidence-based practices, and administrative support can further strengthen nurses' knowledge and skills. Additionally, practical interventions such as consistent patient assessments, repositioning, and patient education should be reinforced to reduce hospital-acquired pressure injuries. Overall, the study emphasizes the importance of balancing theoretical knowledge with practical application and highlights the need for sustained efforts in education and protocol adherence to ensure optimal patient care.

Overall, the study emphasizes that while staff nurses possess strong theoretical foundations and ethical commitment, actual practices are the only factor statistically associated with a significant reduction in hospital-acquired pressure injury (HAPI) prevalence. This highlights a critical "knowledge-to-practice gap," suggesting that possessing high levels of knowledge and positive attitudes does not automatically translate into improved patient outcomes unless these elements are effectively operationalized through consistent clinical application. Consequently, healthcare institutions must move beyond purely academic training and prioritize hands-on, simulation-based education that focuses on practical skills such as regular repositioning and meticulous skin assessments. Furthermore, the findings imply that organizational leaders must address systemic barriers, such as heavy workloads and staffing shortages, while providing the necessary resources and administrative support to foster a sustainable culture of safety and accountability. Ultimately, for pressure injury prevention to be successful, there must be a synergistic approach that integrates continuous professional development with robust performance monitoring and institutional reinforcement of evidence-based clinical protocols.

FUNDING

The study did not receive funding from any institution.

DECLARATIONS

Conflict of Interest

The author declared no conflict of interest.

Informed Consent

All participants were appropriately informed and voluntarily agreed to the terms with full consent before taking part in the conduct of the study.

Ethics Approval

The university Institutional Board of Review approved this study in November 2023 after it conformed to the local and internationally accepted ethical guidelines.

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