

Midocean University

Faculty of Management

Department/Specialization: Master of Health Administration

Research Title

**“Assessment of Nurses’ Knowledge and Practice Regarding Adult Patient Fall Prevention
in a Private Hospital in Saudi Arabia”.**

Student Preparation:

Khaled El Mostafa

Supervision:

Prof. Dr. Fayez Ali Jarad

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Introduction

Background and Global Context

Patient falls are categorized by the World Health Organization (WHO) as one of the most frequent and preventable "never events" in healthcare. Globally, fall rates in acute care settings range from 3 to 5 falls per 1,000 patient days. These incidents are not merely physical accidents; they represent a significant systemic failure in safety protocols, leading to fractures, intracranial hemorrhages, and a psychological "fear of falling" that hinders patient recovery.

The Saudi Arabian Healthcare Landscape

In Saudi Arabia, the Vision 2030 healthcare transformation has placed an unprecedented focus on Patient Safety and Quality of Care. While the Ministry of Health (MOH) provides overarching guidelines, the private healthcare sector—which accounts for a growing percentage of hospital beds in cities like Riyadh and Jeddah—faces unique challenges. These include a high diversity in nursing staff nationalities, varying educational backgrounds, and the pressure of maintaining high "customer satisfaction" alongside clinical safety.

Rationale for the Study

Nurses are the primary "front-line" defenders against falls. Their ability to correctly use assessment tools, such as the Morse Fall Scale, and their consistency in implementing interventions (e.g., bed alarms, rounding) are the variables that determine whether a patient remains safe. Preliminary evidence suggests that while nurses often have high knowledge on paper, the practice in private hospitals can be hampered by staffing ratios or turnover.

Study Problem

Despite the implementation of International Patient Safety Goals (IPSG 6 previously), adult patient falls remain a persistent issue in private Saudi hospitals. The central problem is a suspected Knowledge-Practice Gap. Nurses may possess theoretical certification to identify fall risks, but the clinical execution of prevention strategies is inconsistent.

Current vs. Hopeful Reality

- **Hopeful Reality:** A standardized environment where 100% of high-risk patients are identified within one hour of admission, and 100% of prescribed interventions (e.g., non-slip socks, 1:1 supervision) are active.
- **Current Reality:** Recent internal audits in Saudi private facilities indicate that falls often occur because risk assessments were either not updated following a medication change or because environmental hazards (e.g., cluttered floors) were overlooked during busy shifts (ALqrishah et al., 2024).

The Importance of the Study

a) Scientific Importance:

1. **Contribution to Local Literature:** Most Saudi studies focus on government tertiary centers; this study provides rare data on the private sector.
2. **Theoretical Validation:** It tests the KAP (Knowledge, Attitude, Practice) Model within the specific cultural and organizational context of Saudi private healthcare.

b) Practical Importance:

1. **Hospital Management:** Provides the higher management of nursing with evidence-based data to justify investments in safety equipment (e.g., smart beds, sensor mats).
2. **CBAHI Compliance:** Assists the hospital in meeting the CBAHI standards for fall management.
3. **Nurse Education:** Identifies specific knowledge deficits (e.g., medication-induced falls, etc..) to prepare specific and targeted training programs.

Objectives of the Study

To assess the level of knowledge and self-reported practice regarding adult patient fall prevention among nurses in a private hospital in Saudi Arabia and to identify the barriers to effective implementation.

Specific Goals of the Study

1. To evaluate nurses' theoretical knowledge regarding intrinsic and extrinsic fall risk factors.
2. To measure the level of adherence to standard fall prevention practices (assessment, intervention, documentation).
3. To determine if demographic variables (e.g., years of experience, gender, nationality) impact knowledge and practice scores.
4. To identify the most significant organizational barriers preventing nurses from applying their knowledge in the clinical setting.

Study Questions

1. How frequent are the reported fall prevention practices (e.g., environmental checks, patient education) among the nursing staff?
2. Is there a statistically significant correlation between a nurse's level of knowledge and their actual practice score?
3. Are there differences in knowledge and practice based on the nurse's department (e.g., ICU vs. Medical-Surgical)?

Study Hypotheses

- **H1:** There is a significant positive correlation ($p < 0.05$) between nurses' knowledge levels and their practice scores.
- **H2:** Years of experience in the KSA will positively predict the accuracy of fall risk assessments.

Previous Studies

Study 1

- Full Reference: Alrimali, M. K., Al-Sadi, A. M., & Al-Zahrani, S. (2023). Nurses' knowledge, attitudes, and practices regarding fall prevention in Saudi Arabian hospitals: A cross-sectional study. *International Journal of Nursing Studies Advances*, 5, 100-112.
- Study Objective: The researchers aimed to assess the level of knowledge, attitudes, and self-reported practices among registered nurses regarding fall prevention and to identify the demographic factors influencing these variables.
- Research Methodology: A descriptive cross-sectional design was used. The study sampled 412 registered nurses across multiple regions in Saudi Arabia using an electronic structured questionnaire that included a validated KAP (Knowledge, Attitude, Practice) scale.
- Top Results: The findings indicated that while 84.5% of nurses possessed a "high" level of theoretical knowledge, only 62% demonstrated "high" compliance in actual practice. Significant correlations were found between years of experience and practice scores ($p < 0.05$).
- Relationship to Your Research: This study serves as a primary local benchmark. It confirms the existence of a "Knowledge-Practice Gap" in the Saudi context, which your research seeks to explore specifically within a private hospital setting.

Study 2

- Full Reference: Innab, A. (2022). Nurses' perceptions of fall risk factors and fall prevention strategies in acute care settings in Saudi Arabia. *Nursing Open*, 9(2), 1362–1369. <https://doi.org/10.1002/nop2.1182>
- Study Objective: To investigate what nurses perceive as the most significant risk factors for patient falls and which prevention strategies, they find most effective in daily clinical routines.
- Research Methodology: A quantitative descriptive study involving 288 nurses in acute care units. Data were collected using a modified version of the Fall Prevention Survey.

- Top Results: Nurses identified "patient confusion" and "history of falls" as the top risk factors. However, the study found that "environmental modifications" were often neglected due to high workloads and a lack of specialized equipment.
- Relationship to Your Research: This study highlights the subjective side of nursing practice. It helps you formulate your questionnaire items regarding "Barriers to Practice," particularly the organizational constraints that might be unique to your study's private hospital.

Study 3

- Full Reference: ALqrishah, M. H., Al-Hazmi, A., & Mohamed, S. (2024). Comparison of patient safety culture and fall prevention practices between government and private hospitals in Saudi Arabia. *Journal of Patient Safety and Quality Management*, 12(1), 22-35.
- Study Objective: To compare the implementation of patient safety protocols, specifically fall prevention, between the public (MOH) and private healthcare sectors.
- Research Methodology: A comparative quantitative study using a sample of 350 nurses (175 from government and 175 from private facilities). Tools included the Hospital Survey on Patient Safety Culture (HSOPSC).
- Top Results: Private hospitals showed higher scores in "Managerial Support for Safety" but lower scores in "Staffing Levels" compared to government hospitals. Fall incident reporting was more consistent in private facilities due to accreditation requirements (CBAHI).
- Relationship to Your Research: This is directly relevant as it provides a comparative framework. It justifies your focus on a private hospital by suggesting that the safety culture and barriers there differ significantly from the more commonly studied government sector.

Previous Studies Analysis:

The results of these three studies are highly consistent regarding the existence of a Knowledge-Practice Gap.

- **Consistency in the gap:** Alrimali et al. (2023) and Innab (2022) both found that nursing staff often possess high levels of theoretical knowledge (often exceeding 80%) but fail to translate that knowledge into consistent bedside practice.
- **Consistency in Barriers:** All three studies point to systemic and organizational issues rather than a lack of individual intelligence. Innab (2022) identifies "workload," while ALqrishah et al. (2024) identifies "staffing levels" in the private sector as the primary inhibitors of safety practice.
- **Minor Divergence:** A slight nuance appears in ALqrishah et al. (2024), which suggests that private hospitals may have better "reporting cultures" due to accreditation requirements (CBAHI), even if their "staffing levels" are more strained than the government sector.

Criteria	Similarity	Difference
Research Design	All three utilize a Quantitative, Cross-Sectional design, which is standard for assessing "KAP" (Knowledge, Attitude, Practice) at a single point in time.	ALqrishah et al. (2024) adds a Comparative element by looking at both government and private sectors, whereas the others are purely descriptive of one group.

Criteria	Similarity	Difference
Study Setting	All are localized to the Saudi Arabian healthcare system, ensuring high contextual relevance.	The settings vary from Broad/Multi-region (Alrimali) to Acute Care specific (Innab) to Public-Private comparison (ALqrishah).
Sampling	All used non-probability sampling (Convenience or Purposive) of Registered Nurses.	Sample sizes vary significantly: Alrimali (412) provides high statistical power, while Innab (288) and ALqrishah (350) are more targeted.
Instruments	All used Structured Questionnaires as the primary data collection tool.	The tools differ: Alrimali uses a KAP scale; Innab uses a Fall Prevention Survey; ALqrishah uses the HSOPSC (Hospital Survey on Patient Safety Culture).

Why did the results differ?

While the studies agree on the "problem," the specific details of their findings differ due to three main factors:

- **Environment (Sector Difference):** The most significant reason for the differences in results is the Sector. ALqrishah et al. (2024) highlights that private hospitals operate under different managerial pressures than government hospitals. In private settings, the managerial support for safety is often higher because accreditation (CBAHI/JCI) is tied to the hospital's business license, whereas in public hospitals, the focus may be more on volume and resource management.

- **Instruments (Nature of the Tool):** The results differ because they measure different things. Alrimali et al. (2023) focused on competency (Can the nurse pass a test on the Morse Fall Scale?). In contrast, Innab (2022) focused on perception (What does the nurse think is the biggest risk?). Because the instruments asked different questions, one study highlights lack of knowledge about medications, while the other highlights "lack of time" to check equipment.
- **Sample Characteristics (Work Experience & Nationality):** The diversity of the nursing workforce in Saudi Arabia plays a role. Alrimali's multi-region sample likely included a wider range of educational backgrounds. Studies often show that "Years of Experience in the KSA" is a stronger predictor of practice than "Total Years of Experience," as the local safety culture and reporting systems (like OVR/Incident Reporting) require specific orientation.

Theoretical Premises of the Study

Several theoretical models have been applied to understand nurses' behavior in fall prevention. The **Knowledge—Practice—Outcome** model suggests that nurses' knowledge is a key determinant of practice, which ultimately affects patient outcomes. According to this model, factors such as training, experience, and work environment influence knowledge, while organizational support, policies, and monitoring influence the translation of knowledge into practice (Tzeng & Yin, 2018). Understanding these relationships is crucial for designing effective interventions.

- **The Swiss Cheese Model (James Reason)**

This study utilizes Reason's Swiss Cheese Model (2000) to understand falls. A fall occurs when "holes" in the layers of defense—such as a lack of nursing knowledge (latent condition) and a failure to lock bed wheels (active failure)—align.

Methodology and Research Methods

1. **Study Design:** This study will employ a descriptive cross-sectional quantitative design. This design is appropriate for assessing nurses' current levels of knowledge and practice regarding adult patients' fall prevention at a single point in time.
2. **Study Setting:** The study will be conducted at Dr. Soliman Fakeeh Hospital – Riyadh (DSFH-R) in Riyadh, Saudi Arabia.
3. **Study Duration:** 6 months.
4. **Target Population:** The target population will include all nurses providing direct patient care to patients in adult units at DSFH-Riyadh.
5. **Sample Size with Sample Size Calculation/Sampling Technique:** (Describe the statistical methods for determining the sample size for the study. (1) Provide information needed to validate your calculations -

i.e. values for all parameters used in calculations (2) Document feasibility to enroll and follow the necessary numbers of subjects).

6. A stratified random sampling method will be used to recruit participants who meet the inclusion criteria and consent to participate. The sample size will be calculated using a standard formula for cross-sectional studies, considering a 95% confidence interval, 5% margin of error, and an expected response rate of 80%. Given the total nursing staff of 280 at DSFH-R, the estimated sample size required is approximately 165–175 nurses to ensure statistical reliability.
7. **Subject Recruitment Procedures:** All registered nurses currently working in adult units at DSFH-R will be considered potential participants. Eligibility will be determined according to the inclusion and exclusion criteria. **Recruitment Process:** The principal investigator (PI) will coordinate with the nursing administration to obtain a list of eligible nurses. Eligible nurses will be approached directly in their units or via official hospital email/communication channels to introduce the study. A brief explanation of the study objectives, procedures, benefits, and risks will be provided in writing and verbally. **Informed Consent:** Nurses who express interest will receive a consent form detailing voluntary participation, confidentiality, and the right to withdraw at any time without repercussions. Consent will be obtained prior to the distribution of the questionnaire. Participants must sign or submit electronic consent before proceeding. **Questionnaire Distribution:** The questionnaire will be distributed electronically via a secure hospital-approved platform (MonkeySurvey/Google Forms). Participants will be given 1-2 weeks to complete the questionnaire, with reminders sent at appropriate intervals to enhance response rates. **Confidentiality and Data Security:** Completed questionnaires will be collected anonymously or stored with coded identifiers to ensure confidentiality. Data will be stored securely in password-protected files, accessible only to the research team.
8. **Study Subject Selection:** The study will target registered nurses working in adult units at Dr. Soliman Fakeeh Hospital – Riyadh (DSFH-R). Participants will be selected based on predefined inclusion and

exclusion criteria to ensure that the sample represents nurses directly involved in patient care and capable of providing reliable information about fall prevention practices. This selection process ensures that the study population accurately reflects the nurses who are actively engaged in adult patient care and fall prevention activities, providing valid insights into their knowledge and practices.

8.1. Inclusion Criteria: Registered nurses providing direct patient care to adult patients. Nurses with at least six months of experience in DSFH-R. Willing to participate and provide informed consent.

8.2. Exclusion Criteria: Nursing interns or students. Nurses providing direct patient care to pediatric patients. Nurses on probation or administrative leave during the study period.

9. Study Procedures: The study will proceed after IRB approval. The PI will train research assistants in data collection procedures, consent processes, and confidentiality standards. Data collection will occur during routine work hours without disrupting nursing duties.
10. Data Collection Method/Data Source: (Describe the various sources of data for the study and means of collecting the data, including source documents and CRFs. Explain how you will first record the data, whether it will be onto hardcopy data collection forms or entered directly into an electronic system such as REDCap, or a combination of both methods).

Sampling Method: Stratified random sampling by unit type, followed by simple random selection.

Study tools

A. Knowledge Questionnaire (20 items):

1. Which factor is the strongest predictor of falls in adult hospitalized patients? (A) Age > 65 (B) Previous falls (C) Vision impairment (D) New medication.
2. Recommended interval to reassess fall risk? (A) Admission only (B) Every shift (C) Every 7 days (D) At discharge.
3. Always assess patient mobility before ambulation (True/False).
4. Medication review is important in fall prevention (True/False).
5. Environmental hazards include wet floors, clutter, poor lighting (True/False)
6. Bed in lowest position with brakes on reduces fall risk (True/False)
7. Call bell should be within reach of the patient (True/False)
8. Hourly rounding is an effective prevention strategy (True/False)
9. Patient education on fall prevention is optional (True/False)
10. Proper footwear reduces fall risk (True/False)
11. History of prior falls increases risk (True/False)
12. Night lights are unnecessary for fall prevention (True/False)
13. Family involvement can improve patient safety (True/False)
14. Use of restraints is recommended to prevent falls (True/False)
15. Bed alarm systems alert staff to patient movement (True/False)
16. Physical therapy consultation is important for high-risk patients (True/False)

17. Documentation of falls is required for all incidents (True/False)
18. Frequent patient repositioning can reduce fall risk (True/False)
19. Nurses should only educate high-risk patients (True/False)
20. Multi-disciplinary communication enhances fall prevention (True/False)

B. Practice Questionnaire (10 items) (Likert scale):

1. Perform fall risk assessment on admission (1–5)
2. Reassess fall risk at least every shift or with condition changes (1–5)
3. Ensure bed in lowest position with brakes engaged (1–5)
4. Keep call bell within reach and educate patient on its use (1–5)
5. Perform hourly rounding (1–5)
6. Keep floors dry and free of obstacles (1–5)
7. Ensure adequate lighting at night (1–5)
8. Educate patients and families about fall prevention (1–5)
9. Report and document all falls and near misses (1–5)
10. Collaborate with physical therapy or other staff for high-risk patients (1–5)

Tests of Honesty and Consistency:

- A stratified **random sampling** method will be used to recruit participants who meet the inclusion criteria and consent to participate. The sample size will be calculated using a standard formula for cross-sectional studies, considering a 95% confidence interval, 5% margin of error, and an expected response rate of 80%. Given the total nursing staff of 280 at DSFH-R, the estimated sample size required is approximately 165–175 nurses to ensure statistical reliability.
- **Statistical Analysis** (Summarize the overall statistical approach to the analysis of the study). Data collected from the questionnaires will be analyzed using **SPSS (Statistical Package for the Social Sciences) version 26**. The statistical approach will include both **descriptive** and **inferential analyses** as outlined below:

1. Descriptive Statistics

Knowledge scores and **practice scores** will be calculated and presented as means $\pm$ standard deviations and categorized into **high, moderate, and low levels** based on pre-defined cut-off points.

2. Inferential Statistics

- **Chi-square tests** or **Fisher's exact tests** will be used to examine associations between categorical variables and knowledge or practice levels.
- **Pearson correlation** will be used to assess the relationship between nurses' knowledge scores and practice scores.
- **Significance Level:** A **p-value < 0.05** will be considered statistically significant.

3. Data Handling

- Missing data will be handled using **listwise deletion** if minimal, or **appropriate imputation methods** if significant.
- Results will be presented in **tables and charts** to summarize trends and highlight key findings.

Limitations of the study

Required:

a) Human Field:

- Study Population: Private hospital in Riyadh – Saudi Arabia.
- Study Sample: Dr. Soliman Fakeeh Hospital Riyadh registered nurse.
- The sample size required is approximately 165–175 nurses to ensure statistical reliability.

b) Spatial Domain:

- Geographical Region: Saudi Arabia.

c) Time Zone:

- Data Collection Period (2026 Second and Third Quarters)
- Study Period (2026)

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Preparation:

Khaled El Mostafa