KNOWLEDGE, ATTITUDE, AND FALL PREVENTION PRACTICE AMONG NURSES AT LEVEL II GOVERNMENT HOSPITALS IN HO CHI MINH CITY, VIETNAM

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Abstract

Fall prevention represents a vital clinical indicator in healthcare settings and serves as a fundamental element of patient safety. This study aimed to evaluate nurses' knowledge, attitude, and practices on fall prevention in caring for patients as well as explore the relationship between knowledge, attitude, and practices on fall prevention in patient care. This study was conducted on 312 nurses working in four selected level II government hospitals in Ho Chi Minh City from August to October 2024. The majority of nurses were female, with diplomas or BSNs, averaging 39.2 years old and 15.8 years of clinical experience. 77.9% attended a fall prevention training course. Most nurses showed moderate knowledge (66.7%) and practices (mean score of 3.26/5) regarding fall prevention, while their attitudes were generally positive (mean score of 3.92/5). Strong correlations were found between knowledge, attitude, and practices, as well as with prior training and education level (p < 0.001). Factors such as age, work experience, education, and training were predictive of fall prevention practices. Furthermore, attitude partially mediated the relationship between knowledge and practice. In summary, the study highlights the importance of fall prevention training, improving knowledge and attitudes, and considering factors like work experience and education in nursing practices. The mediating role of attitude suggests that fostering a positive attitude is key to better fall prevention practices, emphasizing the need for targeted educational programs that enhance both knowledge and attitudes to improve clinical outcomes.

Keywords: attitudes, fall prevention, knowledge, nurses, practice

1. Introduction

In healthcare, the prevention of falls holds significant importance for ensuring patient safety and enhancing the quality of life. The World Health Organization emphasizes the criticality of preventing falls and minimizing the severity of injuries, including fatalities,

associated with falls in healthcare facilities worldwide. Fall prevention represents a vital clinical indicator in healthcare settings and serves as a fundamental element of patient safety. Inpatient falls in hospitals and subsequent injuries are a widely recognized and highly relevant health problem associated with lower quality of life, longer hospital stays and higher healthcare costs (Bernet et al., 2022).

Nurses play a pivotal role in preventing falls within hospital settings, directly influencing patient safety and outcomes. Their responsibilities encompass comprehensive fall risk assessments, the development and implementation of individualized care plans, proactive patient education, and active participation in multidisciplinary initiatives (Cho & Jang, 2020). Despite the availability of evidence-based guidelines, implementation remains inconsistent, requiring a coordinated, interprofessional approach (Oporto, 2022).

In Vietnam, research on fall prevention—especially the role of nurses in public hospitals—is limited, with studies showing inadequate knowledge and poor implementation of prevention measures (Ngoc et al., 2020; Nguyen, 2021). There is also a lack of research on nurses' attitudes, particularly in a healthcare system still undergoing reform. From the perspective of nursing managers, both the quality and volume of research in low-income settings like Vietnam are lacking, particularly in smaller hospitals. To address this gap, this thesis presents a cross-sectional study of nurses in level II public hospitals in Ho Chi Minh City, examining their knowledge, attitudes, and practices related to fall prevention and the relationships among these factors.

2. Research Methods

2.1. Study Design

A descriptive – correlational research design was conducted from August to October 2024. A stratified random sampling was employed for recruiting participants who worked in four selected level II government hospitals in Ho Chi Minh City, Vietnam.

The sample size was estimated using G-power software version 3.1.9.7. The statistical test chosen for analysis was the F Test-Linear multiple regression: Fixed model with an effect size of 0.15, Alpha error level of 0.01, Power error level of 0.99, and a total of 8 predictors. Upon performing the calculations, the required total sample size was determined to be 262. Considering a potential 20% attrition rate among respondents, the final total sample size was set at 315.

2.2. Research Instrument

The questionnaire consisted of four parts.

Part I of the questionnaire pertains to the participants' demographic profile.

Part II of the questionnaire pertains to Fall prevention knowledge among staff nurses. This part of the survey tool was adopted from the Fall prevention knowledge of Dykes et al. (2019). This part includes 11 items assessed by respondents with two options (correct or incorrect). It is divided into 3 dimensions fall risk assessment (5 items), fall prevention (4 items), and fall management (2 items). The overall level of fall knowledge is classified as "inadequate" for any score of less than 50% of the total possible marks, and "moderate knowledge" with a 50 to 75% score or "adequate knowledge" if more than 75% score. The value of Kuder-Richardson 20 (KR-20) was 0.80 which indicated that the knowledge on fall prevention scale had good reliability.

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Part III pertains to attitude scale which was adopted by Kim et al. (2017). The questionnaire includes 13 items with positive and negative statements on a 5-point Likert scale. Higher scores indicated higher levels of positivity in nurse's fall prevention attitudes. The fall prevention attitude was written in the form of a questionnaire. The high mean score indicates a positive attitude regarding fall prevention. The reliability according to Cronbach's alpha coefficient in this study is 0.87.

Part IV pertains to the fall prevention practice scale which was adopted by Kim et al. (2017). It consists of 34 items. The instrument consists of 34 items and 3 dimensions: fall risk assessment (9 items), fall prevention (20 items), and fall management (5 items). Each item is scored using a 5-point Likert scale, ranging from "never" (1) to "always" (5). The level of fall prevention practice was based on the mean scores of the nurses' fall prevention practice. This score was considered indicative of the level of fall prevention practice, the higher the score, the higher the fall prevention practice. The reliability according to Cronbach's alpha coefficient in this study is 0.83.

2.3. Data Collection

Data was collected by using two self- administered questionnaires. Participants were interviewed face to face after they agreed for participants and signed in consent form

2.4 Statistical Analysis

Data was analyzed by using Jamovi version 2.3.28. For categorical variables, we used descriptive statistics which performed with frequencies and percentages. Multiple regression analysis was employed to identify any significant predictive factors of participants. Moreover, GLM Mediator analysis was employed to show any significant mediating relationship between variables. All the significant differences in variables were considered if the p-value showed <0.05.

3. Results and Discussion

3.1. Baseline Characteristics of Participants

TABLE 1. Demographic profile of the nurse-respondents in selected level II government hospitals in Ho Chi Minh City, Vietnam (n=312)

Profile	Profile		Percentage (%)
Sex	Male	70	22.4
	Female	242	77.6
Highest Educational Attainment	Diploma	169	54.2
	Bachelor	140	44.9
	Postgraduate	3	1
Clinical department	Medical Department	Trequency reference 70 22.4 2 77.6 na 169 54.2 or 140 44.9 aduate 3 1 al Department 51 16.3 al Department 36 11.5 ric Department 30 9.7 ric Department 45 14.5 ing Room 18 5.7 ency Room 37 11.8 ve Care Unit 26 8.3 ient Department 69 22.1 243 77.9 69 22.1 $243 - 77.9$	16.3
	Surgical Department	36	11.5
	Obstetric Department	30	9.7
	Pediatric Department	45	14.5
	Operating Room	18	5.7
	Emergency Room	37	11.8
	Intensive Care Unit	26	8.3
	Outpatient Department	69	22.1
Previous fall prevention training	Yes	243	77.9
	No	69	22.1
Age (in years)	Mean \pm SD: 39.2 years \pm	6.14	
Length of work experience (in years)	Mean \pm SD: 15.8 years \pm	56.64	

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There were 315 staff nurses who responded to questionnaires from four hospitals in Ho Chi Minh City, Vietnam, but completion of data processing of 312 cases was put in the final analysis. The result showed that the majority of nurses were female (77.6%); the mean of nurses' age was (39.2 ± 6.14). More than half (54.2%) of nurses have attained diploma level and 44.9% of nurses have attained bachelor's degree level while only 1% of nurses have achieved Postgraduate degree level. The nurse respondents had 1-33 years of working experience with the mean year experience of 15.8 years ± 6.64 SD. The study also indicated that 243 (77.9%) of nurses attended the previous fall prevention training course. Nearly half of nurse respondents have worked at the Outpatient department (22.1%) and medical department (16.3%) (table 1).

The findings of this study align with previous research on nurses' fall prevention practices. A study at Cu Chi District Hospital in Ho Chi Minh City found that most nurses were aged 30-40 (63.3%), female (75.5%), and held a bachelor's degree (39.8%), with 69.4% having less than 10 years of experience and 82.6% receiving fall prevention training (Thi Khuyen, 2024). Similarly, Thai et al. (2021) reported that at Nam Dinh Hospital, 81.8% of nurses were female, with 33.5% holding a bachelor's degree and 30% a diploma. However, a higher percentage (34.7%) did not receive fall prevention training compared to this study (22.1%), and most had under 10 years of experience (51.8%). A study in Korea by Cho and Jang (2020) also supports these results, showing a mean nurse age of 32.49 years, 96.9% female, 78.4% trained in fall prevention, and nearly equal distribution between diploma (50%) and bachelor's (47.5%) degree holders, with an average of 8 years and 5 months of experience.

3.2.	Nurses?	Knowledge	of Fall	Prevention in	Caring	Patients
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TABLE 2. Summary of Levels on the Knowledge of Fall Prevention among Nurse-Respondents

	Levels						
Statements	Adequate n (%)	Moderate n (%)	Inadequate n (%)				
Fall risk management	139 (44.6%)	110(35.3%)	63 (20.2%)				
Fall prevention	208 (66.7%)	92 (29.5%	12 (3.8%)				
Fall management	139 (44.6%)	147 (47.1%)	26 (8.3%_				
Overall fall prevention knowledge	78 (25%)	208 (66.7%)	26 (8.3%)				
Mean ±SD:		7.57 ± 1.41					

The result shows that the mean score of nurses' knowledge on fall prevention was 7.58/11 and 1.41SD. The majority of nurses have moderate levels of knowledge regarding fall prevention with 66.7%, and 25% of nurse respondents have adequate knowledge on fall prevention, and only 8.3% have inadequate knowledge. In the detail, the study results also indicated that nurse respondents have the highest knowledge level regarding fall prevention (66.7%), while 44.6% of nurse respondents have high knowledge regarding fall management as well as fall risk management. Meanwhile, 20.2% of nurses had inadequate knowledge about fall risk management domain (table 2).

The research findings are consistent with many previous studies in Vietnam. According to Thuy (2022), 40% of nurses demonstrated correct knowledge, with the rate of correct answers to knowledge questions on fall prevention in nursing care ranging from 14.4% to 82.2%. This finding also aligns with similar studies conducted by Ngo et al. (2023) with a knowledge rate of 45.7%. The study was conducted at two hospitals in Vietnam

and revealed a correct knowledge rate of 67.5% (average level) (Sao & Van Tran, 2022). Besides, according to Ngo et al. (2023), most nurses have good knowledge regarding fall risk assessment with 66.6% while this figure for fall prevention and fall management were at 50%, 45% respectively. Another study in India also reported the familiar finding which indicated that nurses' knowledge regarding fall prevention was at an average level (Alsaad et al. 2024). A study in Saudi Arabia also indicated that nurses' knowledge regarding fall prevention was at moderate level (Afaf Mufadhi Alrimali et al. 2023)

Moreover, the nurses' knowledge regarding fall prevention in this study is better than the research finding which was conducted in Nam Dinh general Hospital, Vietnam. The results revealed 56.5% of nurses with moderate level of knowledge about fall prevention while 43.5% of nurses with inadequate level of knowledge. Additionally, a high rate of nurses had inadequate level knowledge regarding fall risk assessment and management with 93.5%, 68.3% respectively (Thai, 2021). Besides, this study finding is significantly higher than previous studies. According to Thu (2024), only 19% of nurses possessed adequate knowledge. Meanwhile, a study in Korea indicated that most nurses had a low level of understanding regarding fall with only 46.8% of nurses demonstrating correct questions regarding fall prevention knowledge (Cho & Jang, 2020). A study in India also reported that there was 26.8% of nurses had inadequate knowledge, 57.5% had moderately adequate knowledge, and 15.6% had adequate knowledge of falls (James et al. 2022).

3.3. Nurses' Attitudes on Fall Prevention in Caring Patients

The study result showed that the overall mean of fall prevention attitude of nurse respondents was 3.92 which interpreted as "Good" attitude. The strongest dimension of nurse respondents' attitude in which the majority of nurse respondents agreed pertains to "I am concerned about inpatients' accidental falls." (M=4.40). Meanwhile, the weakest dimension of nurse respondents' attitude in which the fewer nurse respondents agreed refers to "I think inpatient falls are inevitable." (M=3.45). Moreover, the dimension had less agreement among nurse respondents pertaining to "I think falling is caused by the patient's condition." (M=3.47).

Statements					
1. I think I should respond to patients immediately if they ask for help when they move					
2. I am concerned about inpatients' accidental falls.	4.40(0.55)				
3. I think I should assess the danger of falling related to patients when they are hospitalized					
4. I think I should take care to actively prevent patient falls.	3.58(0.64)				
5. I am interested in nursing activities to prevent falls					
6. I think fall prevention nursing is a high priority.					
7. I will feel guilty if a patient fall					
8. I think falling in the hospital is an important responsibility of the nursing providers					
9. I think patients do not sustain much physical damage when they fall					
10. I think the hospital environment is safe from falling	3.53(0.59)				
11. I think falling is caused by the patient's condition.	3.47(0.62)				
12. I think inpatient falls are inevitable.					
13. I think there is enough current fall prevention education for the patients when they are hospitalized	4.25(0.72)				
Overall rating	3.92(0.33)				

TABLE 3.	Summary	of Mean	Scores	on	Attitudes	on	Fall	Prevention	among	Nurses
Responden	its									

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This finding is consistent with a previous study done in Korea which indicated the majority of nurses agreed or strongly agreed that they should respond promptly when patients ask for help to move (Mean: 4.36). This suggests that, like the Korean study, nurses in Ho Chi Minh City value timely intervention in fall prevention and are likely aware of their role in preventing falls by being attentive to patients' needs. It shows that training on fall prevention likely reinforces this behavior. Moreover, this study also showed that almost all nurses disagree that falls occur because of the patient's condition (Cho & Jang, 2020).

Moreover, this study i also highlights that the weakest areas of belief (inpatient falls as inevitable and falls caused by patient condition) suggest that nurses may need more education or training to understand that falls are not entirely inevitable and can be prevented through proactive measures, regardless of patient condition. These are in line with a study by Vo & Thi Ha (2023) which reported that 76.5% of nurses had a positive attitude regarding fall prevention (Mean: 4.04). It also reported that 99% of nurses agreed that they are concerned about inpatients' accidental falls and 87.7% of nurses thought that they should respond to patients immediately if they ask for help when they move. Besides, the study also showed that only 44.9% of nurses had a positive attitude regarding the statement that "I think inpatient falls are inevitable" (Vo & Thi Ha, 2023).

3.4. Nurses' Practice on Fall Prevention in Caring Patients

The result study presented that the overall mean score of the practices on fall prevention among nurse respondents was 3.26 verbally interpreted as "Average" practices level. In the details, the fall prevention is one of the domains which has the lowest mean score with 3.03 interpreted as "Average" practice. Besides, the fall risk assessment domain was also recorded as "Average" practice with a mean of 3.36. Meanwhile, the mean scores of fall management, which has the highest mean score with 3.41, and is interpreted as "good" practices (table 4).

Statements	Mean (SD)	Level of Practice
Fall risk assessment	3.36(0.70)	Average
Fall prevention	3.03(0.75)	Average
Fall management	3.41(0.56)	Good
Overall rating	3.26(0.67)	Average

TABLE 5. Summary of Mean Scores on the Nurses' Practice on Fall Prevention

The study results suggest that the level of practice on fall prevention among nurses in caring for patients is average. It suggests that while nurses are implementing fall prevention strategies, there is significant room for improvement in their overall approach. This is consistent with previous studies. The findings from the Vietnamese context have indicated considerably lower scores, described as merely "low" (Quang-Tri et al., 2020; Thuy, 2019) and "average" (Nguyen, 2021; Thuy, 2022). However, our results are lower than those of Yeong Hwa Han's study, which had a good practice rate of 86.4% (Han et al., 2020) and Mi-young Cho's study (82.3% good practice) (Cho & Jang, 2020). In stark contrast, studies conducted in other nations have reported average scores of good nursing practice pertaining to fall prevention (Afaf Mufadhi Alrimali, 2023; Alsaad et al., 2024; Cho & Jang, 2020; Han et al., 2020).

However, the study also reported that most nurse respondents rarely perform refers to "Report the fall accident" (M=2.49). This indicates that nurses are not consistently

reporting fall accidents as required. This could suggest that nurses may not be fully aware of the importance of reporting every fall, or they may find the reporting process cumbersome, time-consuming, or unclear. It may also point to gaps in training regarding the reporting protocols. Managing patients after a fall is a critical aspect of nursing care, and it requires adherence to evidence-based practices. According to Shaw et al. (2020), there are many challenges in promptly addressing on-site handling issues when detecting patient falls. Moreover, reporting falls remains a psychological barrier, hindering healthcare workers from feeling comfortable in reporting such incidents. This underreporting affects the overall awareness of fall occurrences and impedes efforts to implement preventive measures effectively (Shaw et al., 2020; Mikos et al., 2021).

3.5. Predictive Factors of Nurses' Practice on Fall Prevention in Caring Patients

The analysis result showed that R^2 of 0.83 which indicating eight variables – nurses' age, sex, education level, prior fall prevention training, work experience, clinical department, knowledge, and attitude explain 83% of the variance in fall prevention practices ($R^2 = 0.83$, F = 185, p < 0.001). Among these, sex (p = 0.975) and clinical department (p = 0.534) were not statistically significant predictors.

In contrast, education level (p < 0.001), age (p = 0.002), work experience (p = 0.009), training (p < 0.001), attitude (p < 0.001), and knowledge (p < 0.001) were significant predictors. Standardized beta coefficients (β) for these variables – education (β = 0.647), age (β = 0.259), and work experience (β = 0.321) – indicate that increases in these factors are associated with improved fall prevention practices.

				95% Confidence Interval				
Predictors	\mathbb{R}^2	Estimate	SE	Lower	Lower Upper		t	р
Intercept ^a		0.769	0.14	0.490	1.05		5.42	<.001**
Age		0.009	0.003	0.003	0.014	0.144	3.20	0.002^{*}
Sex: Male-Female		-0.007	0.020	-0.044	0.043	-0.001	-0.03	0.975
Length of work experience		0.008	0.004	0.002	0.0146	0.141	2.62	0.009*
Previous training: Yes – No	0.83	0.187	0.033	0.121	0.250	0.489	5.70	< 0.001**
Knowledge		0.095	0.009	0.077	0.113	0.352	10.4	< 0.001**
Attitude		0.201	0.004	0.134	0.279	0.180	5.63	< 0.001**
Educational level		0.101	0.023	0.055	0.145	0.136	2.62	< 0.001**
Clinical departments		-0.002	0.003	-0.01	0.004	-0.01	-0.62	0.534

TABLE 6. Regression Analysis between Demographic Profile, Knowledge, Attitude and Practice on Fall Prevention among Nurse-Respondents

Note. * *p* < 0.05, ** *p* < 0.001

These findings align with previous studies. Albasha et al. (2023) and Han et al. (2020) found higher education levels enhance knowledge and practice. Additionally, Thi Ha & Thi Khuyen (2024) also confirmed that knowledge, attitude, age, experience, and training significantly influence prevention practices. Their study showed nurses with good knowledge were 6.28 times more likely to practice effectively (p = 0.002), and those with positive attitudes were 5.18 times more likely (p = 0.006). Similarly, an Indonesian study reported significant odds ratios for knowledge (OR = 3.257), attitude (OR = 4.286), and training (OR = 5.455) as predictors of practice.

3.6. The Relationship between Knowledge, Attitude and Skills on Pain Management

The correlation analysis indicates that there are statistically significant positive relationships between nurses' fall prevention practices and both their knowledge and attitudes. Specifically, there is a strong correlation between practice and knowledge (r = 0.78, p < 0.001), suggesting that nurses with greater knowledge about fall prevention tend to demonstrate better practices. Additionally, a moderately strong correlation was found between practice and attitude (r = 0.68, p < 0.001), indicating that nurses with more positive attitudes toward fall prevention are also more likely to engage in effective prevention practices. These findings highlight the important role of both knowledge and attitude in shaping nurses' behavior in fall prevention efforts.

TABLE 8. Correlation Analysis between Knowledge, Attitude and Practice on Fall Prevention among Nurse-Respondents

Variables		Practice				
Vnowladge	Pearson's r	0.78				
Knowledge	p-value	< 0.001**				
A ttitudo	Pearson's r	0.68				
Attitude	p-value	< 0.001**				

Note. ** *p* < 0.001

According to Thi Ha & Thi Khuyen (2024), there was a positive relationship between knowledge and practice on fall prevention in patient care among nurses. Nurses with good knowledge were 6.28 times more likely to practice effectively (p = 0.002). Additionally, a study by Than et al. (2024) also indicated that there was a strongly positive relationship between knowledge and practice on fall prevention among nurses (p<0.001). Moreover, significant relationships were also reported in many studies by Ghanim et al. (2023); Han et al. (2020). These findings indicated a significant positive correlation between nursing knowledge and practice in fall prevention. This implies that nurses who understand and apply fall prevention knowledge tend to implement preventive measures more effectively. This alignment with previous studies reinforces the notion that a well-informed nursing workforce is essential for the successful implementation of fall prevention strategies. Research consistently indicates that when nurses possess a strong foundation of knowledge regarding fall risks and prevention techniques, they are more likely to engage in practices that mitigate these risks.

The correlation between attitude and nursing practice in fall prevention is particularly crucial because a positive attitude can lead to increased awareness and commitment to implementing preventive measures, promoting adherence to procedures, and contributing to creating a safe and efficient patient care environment. Nurses' attitudes can play a significant role in determining outcomes and performance related to fall prevention practices. This study is consistent with many previous studies. According to Cho, & Jang (2020), attitudes about falls were positively related to engagement in fall-prevention activities (r = .25, p = .001). The study's results align with previous research, including studies by Cho & Jang (2020), Thi Ha, & Thi Khuyen (2024), and Yeong Hwa Han (2020), reinforcing the notion that positive attitudes toward fall prevention are linked to greater engagement and adherence to related practices. According to Afaf Mufadhi Alrimali et al. (2023), nurses' attitude and practice on fall prevention were statistically significant with the fall prevention training (p < .001).

				95% C.I.				
Туре	Effect	Estimate	SE	Lower	Upper	β	Z	р
Indirect	Knowledge ⇒ Attitude ⇒ Practice	0.054	0.007	0.040	0.068	0.20	7.6	< 0.001*
Commonant	Knowledge \Rightarrow Attitude	0.125	0.011	0.10	0.15	0.53	11.0	< 0.001*
Component	Attitude \Rightarrow Practices	0.436	0.042	0.35	0.52	0.38	10.6	< 0.001*
Direct	Knowledge \Rightarrow Practices	0.158	0.010	0.14	0.18	0.59	16.5	< 0.001*
Total	Knowledge \Rightarrow Practices	0.212	0.010	0.20	0.24	0.79	22.4	< 0.001*

TABLE 8. The Summary Test for Direct Effect, Indirect Effect and Total Effect of Distributed Knowledge 0n Practice regarding Fall Prevention

Note. * p < 0.001

The result shows that the total effect of knowledge regarding fall prevention on nurses' practice regarding fall prevention was 0.212 and the direct effect and indirect effect were 0.158 (95% CI, 0.14-0.18) and 0.054 (95% CI, 0.040-0.068), respectively. Both direct and indirect effects are statistically significant, indicating knowledge influences practices, attitude plays a partial mediating role between knowledge and practices and the mediating effect accounted for 25.5% of the total effect. This means that while knowledge directly enhances practices, a substantial portion of its impact is also mediated through attitudes. This highlights the importance of fostering positive attitudes towards fall prevention alongside imparting knowledge.

The study found that attitude was a mediator between knowledge and skills on fall prevention among nurses. Many studies have reported a positive direct correlation between nurses' knowledge and attitudes toward fall prevention practices in nursing (Afaf Mufadhi Alrimali et al., 2023; Alsaad et al., 2024; Cho & Jang, 2020). Knowledge has a direct effect on practice on fall prevention. I believe this would be due to knowledge improving nurses' confidence in their practices on fall prevention. Moreover, knowledge had an indirect effect on practices through attitude. Since a high level of knowledge displays more positive attitudes (Thi Ha, & Thi Khuyen, 2024; attitude and practice on fall prevention are highly correlated (Cho & Jang, 2020), and knowledge may impact practice through the effect of attitude as it improves nurses' willingness to apply the knowledge and engage in fall prevention practice.

4. Conclusion

A study among nurses in level II government hospitals in Ho Chi Minh City, Vietnam, found that while nurses had positive attitudes toward fall prevention, their knowledge and practices were only moderate, indicating the need for ongoing education and training. Nurses with higher education levels and prior fall prevention training demonstrated better knowledge, attitudes, and practices, and both age and work experience positively influenced performance. Knowledge was strongly linked to both attitudes and practices, with attitude partially mediating the effect of knowledge on practice – highlighting the foundational role of knowledge and the reinforcing impact of positive attitudes. Overall, factors such as age, education, experience, training, knowledge, and attitude were significant predictors of fall prevention practices, emphasizing the need for targeted interventions to enhance patient safety.

In summary, for improving practices on fall prevention among nurses, efforts should focus on enhancing their knowledge through structured educational programs. Additionally, interventions aimed at cultivating positive attitudes towards fall prevention in caring patients are crucial as attitudes play a significant role in translating knowledge into effective practices. Healthcare organizations should consider comprehensive training that addresses both knowledge gaps and attitude formation to maximize the impact on improving fall prevention practices in patient care.

Conflict of Interest and Data Availability Statement

The authors state there is no conflict of interest and there is no data associated with this article.

References

- Afaf Mufadhi Alrimali, M. K. A.-S., Abdullah Sami Alamer, Abdulmajeed DhaifAllh A.
 Alrashedi, Mohammed Hamoud S.Alsaadi, Abdullah Ayed S. Alharbi, Shaleh Husaikan W. Al. Shammari. (2023). Fall Prevention Knowledge, Attitudes, and Practices among Nurses in Saudi Arabia. *International Journal of Nursing and Health Care Research*, 6(10).
- Alsaad, S. M., Alabdulwahed, M., Rabea, N. M., Tharkar, S., & Alodhayani, A. A. (2024). Knowledge, attitudes, and practices of nurses toward risk factors and prevention of falls in older adult patients in a large-sized tertiary care setting. *Healthcare (Basel)*, 12(4)
- Bernet, N. S., Everink, I. H., Schols, J. M., Halfens, R. J., Richter, D., & Hahn, S. (2022). Hospital performance comparison of inpatient fall rates; the impact of risk adjusting for patientrelated factors: a multicenter cross-sectional survey. *BMC Health Serv Res*, 22(1), 225.
- Cho, M. Y., & Jang, S. J. (2020). Nurses' knowledge, attitude, and fall prevention practices at south Korean hospitals: a cross-sectional survey. *BMC Nurs*, 19(1), 108.
- Dykes, P. C., Bogaisky, M., Carter, E. J., Duckworth, M., Hurley, A. C., Jackson, E. M., Khasnabish, S., Lindros, M. E., Lipsitz, S. R., Scanlan, M., Yu, S. P., Bates, D. W., & Adelman, J. S. (2019). Development and Validation of a Fall Prevention Knowledge Test. J Am Geriatr Soc, 67(1), 133-138.
- Han, Y. H., Kim, H. Y., & Hong, H. S. (2020). The effect of knowledge and attitude on fall prevention activities among nursing staff in long-term care hospitals. *Open Journal of Nursing*, 10(07), 676-692.
- Kim, S. H., & Seo, J. M. (2017). Geriatric Hospital Nurses' Knowledge, Attitude toward Falls, and Fall Prevention Activities. *Journal of Korean Gerontological Nursing*, 19(2), 81-91.
- Ngo, V. A. T., Quang Trung. Bui, Hoang Hai. (2023). Knowledge and practice of nurse about fall prevention for patient using morse scale at Hanoi Medical University Hospital. *Vietnam Medical Journal*, *524*(2), 295-299.
- Ngoc, P. T. B. N., Huy Hoang. Hang, Dinh Thi Thu. (2020). Evaluating Fall Prevention for Patient at Nam Dinh. *European Journal of Molecular & Clinical Medicine* 7(10), 3114-3119.
- Nguyen Thi Chinh, P. T. B. N. (2021). Deepening analysis on preventing fall risk with knowledge and practices of nurses and nursing. *Sys Rev Pharm*, *12*(3), 308-313.
- Oporto, L. N. (2022). Práctica de enfermería basada en la evidencia y prevención de las caídas en pacientes internados. *Salud, Ciencia y Tecnología*, 2.
- Quang-Tri, L., Tran-Thi, H.-G., & Tran, M.-K. (2020). An assessment of the nurses' knowledge and practices of inpatient fall prevention. *International Archives of Medicine*, 13.
- Sao, N. N. T., Van Tran. (2022). The situation of fall prevention knowledge for patients of nurses

in resuscitation and emergency department and some related factors at two hospitals Vinmec Times City and Vinmec Nha Trang In 2022 *Vietnam Medical Journal*, *517*(2), 283-287.

- Shaw, L., Kiegaldie, D., & Farlie, M. K. (2020). Education interventions for health professionals on falls prevention in health care settings: a 10-year scoping review. *BMC Geriatr*, 20(1), 460
- Thai, H. T. M. (2021). Nurses' knowledge on fall prevention for patients at nam dinh general hospital 2020. *Vietnam Medical Journal*, *2*, 21-27.
- Thi Ha, D. ., & Thi Khuyen, V. . (2024). Fall risk prevention: related factors to nurses' practice at Cu Chi District hospital. *Vietnam Medical Journal*, 544(2).
- Thu, M. X. e. a. (2019). Fall prevention knowledge for patients among nursing students at Ha Nam Medical College In 2019. *Journal of nursing science*, 2(3), 112-119.
- Thuy, N. T. L., Tran Van (2019). Current status of nurses' knowledge, practice on falls-risk prevention for patients at some clinical departments in Ha Nam General Hospital in 2019. *Journal of nursing science*, 2(3), 55-60.
- Thuy, P. H. e. a. (2022). Nurses' knowledge and confidence in preventing falls for patients. *Vietnamese medical journal*, *519*(10), 212-221.
- Vo, T. K. D., Thi Ha. (2023). Current status of knowledge and attitude of nursings in preventing falls for patients at Cu Chi District Hospital. *Medical Magazine VN*, 172(11), 299-312.