KNOWLEDGE, SKILLS AND ATTITUDES OF NURSES ON PAIN MANAGEMENT FOR POST-TURP PATIENTS IN SELECTED PUBLIC HOSPITALS IN VIETNAM

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Abstract

Pain is a global health concern that requires the attention of the healthcare services. This study aimed to evaluate nurses' knowledge, skills on pain management for caring post – transurethral resection of the prostate (TURP) as well as explore the relationship between knowledge and skill regarding pain management for post – TURP patients. This study was conducted on 230 nurses who have worked at two public hospitals in Ho Chi Minh city from April to June 2024. The result showed that the majority of nurses were female, had a mean age of 37.3 years and an average of 13.7 years of direct clinical experience. Of these, 57.4% of nurses have attended the previous pain training course. The majority of nurses lack knowledge regarding pain management with 86.5%. The study also indicated that nurses' educational level, knowledge and attitude toward pain management are significant predictive factors of nurses' skills on pain management when caring post – TURP patients. Knowledge on pain management had a very strong positive correlation with attitude ($r = 0.820$, $p < 0.001$) as well as skills ($r = 0.91$, $p < 0.001$). Besides, there was a very strong and positive correlation between attitude and skills on pain management ($r = 0.91$, $p < 0.001$). There was a mediating relationship between knowledge, attitude and skills on pain management, attitude played a partial mediating role between knowledge and skills. In summary, the study indicates a need for targeted educational interventions to bridge the gap between knowledge and skills in pain management, particularly in non-pharmacological strategies, to improve overall care for post-TURP patients.

Keywords: attitudes, knowledge, nurses, pain management, skills, turp patients

1. Introduction

Post-operative pain (POP) is a form of acute pain due to surgery and it leads to a number of significant negative impacts to patients. Post-operative pain is a form of acute pain following surgical intervention. Pain is one of the most common problems faced by nurses when dealing with patients in the surgical units (Adam et al., 2020).

Transurethral resection of the prostate (TURP) is the gold standard for the surgical treatment of benign prostatic hyperplasia (Diagana, 2021). Although relatively safe, as is with most surgical procedures, TURP is not without complications including postoperative pain. POP is a form of acute pain due to surgery and it leads to a number of significant negative impacts to patients. As a result, patients show poor tolerance during surgery. In particular, pain after TURP affects the living quality and recovery rate of patients remarkably. Postoperative pain symptoms after TURP can occur regarding bladder spasms which are induced by the injuries in urinary bladder areas during TURP and the presence of a urethral catheter (Zhang et al., 2022).

Role of nurses in postoperative pain management has been discussed in many recent studies. Nurses' knowledge and ability to communicate are very important in pain management. Gap in knowledge about pain assessment and management, inability to assess pain, fear of side effects of analgesic drugs. Many previous studies were conducted to evaluate nurses' competency in postoperative pain management among health professionals and nurses as well as. Many research findings showed that the majority of nurses lack knowledge, attitude and skills in managing pain after surgery (Adams, Varaei, & Jalalinia, 2020; Jaleta, Tuji & Wake, 2020). Lack of knowledge regarding pain management is one of the predicted factors of weakness skills in pain management.

In Vietnam, there are no specific education programmes for enhancing nurses' competency in pain management for post – TURP. In order to enhance the pain management for post – TURP patients, developing a pain education program is very essential. It is inevitable to understand the knowledge, attitude and practice towards post TURP pain management status in order to develop a competency enhancement program for pain management for nurses who directly take care of patients.

Considering these problems, the study was conducted to evaluate nurses' knowledge, attitude, skills in pain management for caring post – TURP as well as explore the relationship between knowledge, attitude and skill regarding pain management for post – TURP patients.

2. Research Methods

2.1 Study Design

A descriptive – correlational research design was conducted from April to June 2024. A random simple sampling was employed for recruiting participants who worked in 2 selected public hospitals in Ho Chi Minh city, Vietnam. Nurses who are assigned at the Urology Department; had at least 1-year experience; have provided direct patient care to post-TURP patients were invited to participate in this study.

The sample size was estimated using the G Power software, version 3.1.9.2. Considering the effect size to be measured (ρ) at 20%, i.e., correlation coefficient between the variables at 0.20, power of the study at 90%, and margin of error at 5%, the total sample size was estimated to be 209. The sample size was increased by 10% due to sample loss during the collection process of sample. In conclusion, the sample size of this research was a sample size of 230.

2.2 Research Instrument

The questionnaire consisted of three parts.

Part I of the questionnaire pertains to the clinico-demographic profile.

Part II of the questionnaire pertains to the knowledge on pain management among nurses caring for post-TURP. The Nurses Knowledge and Attitudes Survey Regarding Pain (NKASRP) (Ferrell & McCaffery, 2014) which was 29 question (18 True/ False questions and 11 Multiple choice questions). The total core is from 0 - 29 points. If NKASRP score was >23 which meant acceptable knowledge, whereas NKASRP score was ≤ 23 which meant lack of knowledge. The reliability according to Cronbach's alpha coefficient in this study is 0.84.

Part III pertains to the skills in pain management which consists of 15 items (Menlah, et al., 2018) which includes 2 domains: Non-Pharmacological Interventions (10 items); Pharmacological Interventions (5 items). Questions were answered utilizing a 5-point Likert scale with selections ranging from 1 (never) to 5 (allways). The overall Cronbach's alpha coefficient was 0.80.

Part IV This pertains to the attitude scale which consists of 14 items which was modified by Menlah et al. (2018) was used. The overall Cronbach's alpha coefficient was 0.869. The questionnaire includes 3 domains: Personal Beliefs (3 items); Assessment of Patient (5 items); Management of Patient (6 items). Questions were answered utilizing a 5-point Likert scale with selections ranging from 1 (Strongly disagree) to 5 (Strongly agree).

TABLE 1. Level of attitude/skills toward pain management

Mean Value	Attitude/ Skills level regarding pain management
4.51-5.00	Very Good
3.51-4.50	Good
2.51-3.50	Fair a
1.51-2.50	Poor
1.00-1.50	Very Poor

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 2.4.14. 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 in order to show any significant mediating relationship between variables. All of the significant differences in variables were considered if the p-value showed <0.05

3. Results and Discussion

3.1 Baseline Characteristics of Participants

A total of 230 nurses from two selected public hospitals in Ho Chi Minh City, Vietnam were recruited to the study. The result showed that the majority of nurses were female (81.3%); the mean of nurses' age was (37.3 ± 6.67). Of these, 84.8% of nurses have attained Bachelor level and only 3.5% of nurses have achieved Master degree level. The mean year experience of participants was 13.7 years (SD = 5.84). 57.4% of nurses have attended the previous pain training course (Table 2).

TABLE 2. Demographic Profile of the Nurse-Respondents Caring for Post-TURP Patients in Selected Public Hospitals in Ho Chi Minh, Vietnam (n=230)

Profile		**Frequency**	**Percentage**
Sex	Male	43	18.7 %
	Female	187	81.3 %
Highest Educational Attainment	Diploma	27	11.7%
	Bachelor	195	84.8 %
	Master	8	3.5 %
Previous pain education	Yes	98	42.6 %
	No	132	57.4 %
Age (in years)	Mean ± SD: 37.3 years ± 6.6		(**Min**: 22; **Max**: 53)
Length of work experience (in years)	Mean ± SD: 17.7 years ± 5.84		(**Min**: 1 ; **Max**: 28)

The result concurs with a previous study in a Vietnamese hospital which indicated that most of them were female (75.6%). The mean age was 30.7 (SD = 3.9) years old. Nearly a half of nurses had bachelor degrees or above (48.9%) and have not attended any training about pain management previously (72.2%) (Vu et al., 2020). However, another study among nurses at a hospital in Ghana, Africa showed that the mean age and years of experience of the nurse respondent was 29.7 years and 4.33 years. More than a half of the respondents (57.4%) have never received training on pain management and were female (57.8%) (Adams, Varaei & Jalalinia; 2020).

3.2 Nurses' Knowledge on Pain Management for Caring Post – TURP Patients

The result shows that the mean score of nurses' knowledge on pain management was 19.2/29 and 3.81SD. The majority of nurses lack knowledge regarding pain management with 86.5%, only 13.5% of respondents have acceptable knowledge (Table 3).

TABLE 3. Summary of Levels on the Knowledge on Pain Management among Nurse-Respondents

Level of knowledge	**Frequency**	**Percentage**
Acceptable Knowledge	31	13.5%
Lack of Knowledge	199	86.5%
Mean ± SD:	19.2 ± 3.81 (**Min:** 14; **Max**: 28)	

This research finding is consistent with previous studies which were conducted on Vietnamese nurses. According to Tran (2022) reported that the majority of nurses had lack of knowledge on pain management (93,4%), and a few of nurses had acceptable knowledge (6,6%) (Tran, 2022). Another study in Hanoi, Vietnam also showed that the mean number of correct answers on the KASRP was 23.34 and only 16 nurses (5.7%) had passing scores (Nga et al., 2022). The study reveals that a majority of nurses have inadequate knowledge regarding pain management, mirroring findings from similar research in Vietnam. This highlights the urgent need for improved educational initiatives to enhance nurses' understanding and practice in pain management.

3.3. Nurses' Attitudes on Pain Management Management for Caring Post – TURP Patients

The study result showed that the overall mean of management of patients with an overall mean of 3.55 interpreted as "good" attitude. In detail, personal belief is one of the domains which has the lowest mean score with 3.03 interpreted as "Fair" attitude. Meanwhile, the

mean scores of assessment of patients and management of patient domains are higher with 3.75; 3.65 respectively and interpreted as "good" attitude (Table 4).

TABLE 4. Summary of Mean Scores on the Attitudes on Pain Management

Statements	**Mean**	**SD**	**Level**
Personal beliefs	3.03	0.61	Moderate
Assessment of patients	3.75	0.55	Good
Management of patients	3.65	0.60	Good
Overall Mean	**3.55**	**0.49**	**Good**

The findings overall indicate a positive attitude towards pain management among nurses caring for post-TURP patients in Ho Chi Minh City. However, there are specific areas, such as personal beliefs, where targeted interventions could further improve attitudes and practices. The lower mean score in the Personal belief domain suggests that nurses may have more varied attitudes or beliefs regarding personal factors influencing pain management. This could include cultural, spiritual, or ethical considerations that impact their approach to pain care.

This finding is consistent with a study by Kahsay & Pitkäjärvi (2019) which indicated that the attitude level of the nurses regarding pain management was poor. The participants' correct mean score was 49.5% (Kahsay, & Pitkäjärvi, 2019). The research findings highlight that personal belief regarding pain management among nurses caring Post – TURP patients are not good enough.

3.4 Nurses' Skills on Pain Management Management for Caring Post – TURP Patients

The result study presented on the skills on pain management in terms of non-pharmacological intervention with an overall mean of 3.48 verbally interpreted as average level. The strongest dimension of the Non-pharmacological intervention domain in which the majority of nurse respondents often perform pertains to "I lay patients on a clean, neat, well-laid bed post-operatively." (Mean = 4.04). Meanwhile, the weakest dimension of Non-pharmacological intervention domain in which the majority of nurse respondents sometimes perform refers to "I encourage prayer and/or meditation by patient or religious leader post-operatively." (Mean=2.60).

This finding is consistent with a study in Nigeria which indicated that most of the nonpharmacological methods used in this study were providing a clean, calm, and well-ventilated ward environment (Ehwarieme et al., 2023). Moreover, the study finding of this study revealed that the study finds that nurses used Non-pharmacological for managing pain at an average level.

This finding is consistent with other previous studies. According to Zeleke et al. (2021), only 44 (26%) of nurses had good practice on non- pharmacological pain management methods. Similar findings were reported by Tsegaye et al. (2023), the prevalence of non-pharmacological pain management practices was low. Only 48.1% of nurses had good practice in non-pharmacological pain management (Tsegaye et al., 2023). While nurses demonstrate some competency in non-pharmacological pain management, their overall practice is average, with notable variations in the frequency of different interventions.

TABLE 5. Summary of Mean Scores on the Skills on Pain Management in term of Non-Pharmacological Intervention

Statements	**Mean (SD)**
1. I provide a clean, calm and a well-ventilated ward environment for post-operative pain management.	3.97 (0.78)
2. I lay patients on a clean, neat, well-laid bed post-operatively.	4.04 (0.87)
3. I use patient distraction post-operatively to reduce pain.	3.19 (1.02)
4. I use patient relaxation post-operatively to reduce pain.	3.47 (0.91)
5. I use guided imagery post-operatively to reduce pain.	3.40 (1.01)
6. I use music therapy to reduce post-operative pain.	3.02 (1.00)
7. I use massaging to reduce post-operative pain.	3.77 (0.82)
8. I use stretching to reduce post-operative pain.	3.71 (0.87)
9. I apply heat and cold compresses to manage post-operative pain.	3.60 (0.97)
10. I encourage prayer and/or meditation by patient or religious leader post-operatively.	2.60 (1.29)
Overall rating	**3.48 (0.50)**

The result study showed that the skills on pain management in terms of pharmacological intervention with an overall mean of 3.74 interpreted as a good level. The strongest dimension of pharmacological intervention in which the majority of nurse respondents sometimes perform pertains to "I give opioids on a regular schedule." (Mean = 3.90). Meanwhile, the weakest dimension of pharmacological intervention domain in which the majority of nurse respondents sometimes perform refers to "I give patients sterile water by injection (placebo) to determine if the pain is real." (Mean = 3.40) (Table 6).

TABLE 6. Summary of Mean Scores on the Skills on Pain Management in term of Pharmacological Intervention

Statements	**Mean (SD)**
11. I give patients sterile water by injection (placebo) to determine if the pain is real.	3.34 (1.07)
12. I encourage early ambulation / exercise with analgesia.	3.80 (0.71)
13. I give opioids on a regular schedule.	3.90 (0.75)
14. I give analgesics for postoperative pain only when the patient asks for the medication.	3.84 (0.78)
15. After I have given opioid analgesic, I administer, subsequent doses to suit individual patient's response	3.85 (0.74)
Overall rating	**3.74 (0.59)**

A study by Adam et al. (2020) revealed that 184 (87.2%) were not able to identify that giving patients sterile water by injection (placebo) was not a useful test to determine if the pain was real. Besides, the research result also shows that the overall skills of nurses regarding pain management is at a good level with an overall mean of 3.57. This finding is consistent with a study by Dechasa et al. (2022) that the majority of nurses have a good level of practice of postoperative pain management. Although the skills on pain management were at a good level, the mean score was still low (at 3.57). In contrast, Jaleta et al. (2020) in Ethiopia reported the prevalence of nurse's good practice towards POP management was low (Jaleta, Tuji & Wake, 2020). In the same, Negewo et al. (2020) reported that only 23.5% had good post-operative pain management practice. Another study also reported that 88% of the nurses had moderate levels of practice with regards to immediate post-operative pain management (Umuhoza et al., 2019). There should be addressing these gaps through focused training that can enhance overall pain management practices and ensure more effective and evidence-based care.

3.5. Predictive Factors of Nurses' Skills on Pain Management Management for Caring Post – TURP Patients

TABLE 7. Regression Analysis between the Demographic Profile, Knowledge, Skills and Attitude on Pain Management among Nurse-Respondents

Predictor	R^2	Estimate	95% Confidence Interval		β	t	p
			Lower	Upper			
Intercept [a]	0.85	1.191	0.83	1.55		6.50	< .001**
Attitude		0.260	0.17	0.35	0.259	5.64	< .001**
Knowledge		0.076	0.07	0.08	0.647	12.95	< .001**
Sex: Male-Female		0.013	-0.05	0.07	0.031	0.44	0.657
Educational level Diploma – Bachelor		0.042	-0.03	0.11	0.086	1.14	0.253
Master – Bachelor		0.145	0.01	0.28	0.321	2.17	0.031*
Previous training: No - Yes		0.046	-0.02	0.11	0.102	1.34	-0.180
Age		-0.001	-0.01	0.01	-0.001	-0.03	0.978
Years experience		−1.57e−5	-0.01	0.01	-0.002	-0.05	0.957

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

Predictive Model:

Skills of pain management (Y) = 1.191 + 0.259 *(Attitude)* + 0.647*(Knowledge)*+ 0.321*(Educational attainment: Master – Bachelor).*

With R^2 of predictive model is 0.85 which indicated that seven predictors including nurses' age, sex, education level, previous pain training, years experience, knowledge and attitude on pain management explain 85% of the variance in skills of nurses in pain management (R^2 = 0.85, p < 0.001). The p-values more than 0.05 indicated that sex; educational attainment (diploma – bachelor), previous training; age; years experience are not statistically significant predictors of skills on pain management among nurses. However, the p- values are less than 0.05 which indicates that educational attainment (master – bachelor); knowledge, attitude are statistically significant predictor of skills of nurse regarding pain management.

This finding is consistent with previous study done by Al Omari et al. (2021). Al Omari et al. indicated a positive relationship between nurses' knowledge of pain management and pain management practices (β = 0.328, p < 0.001) and nurses' attitude towards pain management and pain management practices (β = 0.578, p < 0.001). Moreover, this is also mentioned in a study by Jeleta et al. (2020) which reported, level of knowledge, were factors significantly associated with nurses' level of practice towards POP management.

According to Umuhoza et al. (2019), the educational level had a positive impact toward knowledge and practice of nurses regarding postoperative pain management. This was also mentioned in a study by Jeleta et al. (2020) which reported that educational level was significantly associated with nurses' level of practice towards POP management. This study suggests that nurses' educational level, knowledge and attitude toward pain management are significant predictive factors of nurses' skills on pain management when caring post – TURP patients. It also encourages nurses who are caring post – TURP should continue studying which predicts an improvement in change of nurses' skills on pain management.

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

Correlation analysis implies that there are statistically significant relationships between nurses' knowledge and attitude ($r = 0.82$, $p < 0.001$) as well as skills ($r = 0.91$, $p < 0.001$) on pain management. Additionally, there are statistically significant relationships between nurses' attitude and skills ($r = 0.91$, $p < 0.001$) regarding pain management for caring post – TURP patients. With Pearson's $r \geq 0.70$ which indicates that nurses' knowledge on pain management has a very strong positive correlation attitude and skills regarding pain management. This means that when an improvement of nurses' knowledge would be enhanced both their attitude and skills on pain management will be increased.

TABLE 8. Correlation Analysis between Knowledge, Attitude and Skills on Pain Management among Nurse-Respondents

Variables		Attitude	Skills
Knowledge	Pearson's r	0.82	0.91
	p-value	< 0.001**	< 0.001**
Attitude	Pearson's r	-	0.91
	p-value	-	< 0.001**

*Note. ** p < 0.001*

A study by Sweitly et al. (2022) reported that a significant positive correlation was shown between the knowledge and attitude scores of the respondents about pain management ($r = 0.967$, $p < 0.001$). Furthermore, a significant positive correlation was demonstrated between the knowledge and practice scores of the respondents in the management ($r = 0.144$, $p = 0.048$). There was also significant modest positive correlation between attitude and practice scores in pain management of pain ($r = 0.148$, $p = 0.041$).

Moreover, according to Al Omari et al. (2021), there was the positive positive nurses' knowledge regarding pain management and pain management practice ($r = 0.412$, $p < 0.001$). Moreover, there is a strong positive relationship between participants' knowledge of and attitudes towards pain and their pain management practices was also revealed in the study done by Al Omari et al. (2021).

The findings suggest that improving nurses' knowledge about pain management positively influences their attitudes towards pain management, which in turn enhances their skills in managing pain. Additionally, nurses' attitudes towards pain management significantly impact both non-pharmacological and pharmacological interventions they employ. Therefore, comprehensive educational and training programs targeting knowledge enhancement and attitude improvement among nurses can potentially lead to more effective pain management practices and improved patient care outcomes.

TABLE 9. The Summary Test for Direct Effect, Indirect Effect and Total Effect of Distributed Knowledge 0n Skills regarding Pain Management

Type	Effect	Estimate	95% Confidence Interval		β	z	p
			Lower	Upper			
Indirect	Knowledge ⇒ Attitude ⇒ Skills	0.025	0.016	0.034	0.21	5.5	< 0.001*
Component	Knowledge ⇒ Attitude	0.096	0.078	0.101	0.82	21.6	< 0.001*
	Attitude ⇒ Skills	0.260	0.171	0.349	0.26	5.7	< 0.001*
Direct	Knowledge ⇒ Skills	0.082	0.065	0.088	0.69	15.2	< 0.001*
Total	Knowledge ⇒ Skills	0.107	0.091	0.108	0.91	32.5	< 0.001*

*Note. * p <0.001*

The result shows that the total effect of knowledge regarding pain management on skills of nurses on pain management was 0.107 and the direct effect and indirect effect were 0.082 (95% CI, 0.065-0.088) and 0.025 (95% CI, 0.016-0.034), respectively. Both direct and indirect effects are statistically significant, indicating knowledge has an effect on skills, attitude plays a partial mediating role between knowledge and skills, and the mediating effect accounted for 23.4% of the total effect. This means that while knowledge directly enhances skills, a substantial portion of its impact is also mediated through attitudes. This highlights the importance of fostering positive attitudes towards pain management alongside imparting knowledge.

The study found that attitude was a mediator between knowledge and skills on pain management among nurses. Consistent with previous research (Umuhoza et al., 2019; Al Omari et al., 2021), knowledge has a direct effect on practice on pain management. I believe this would be due to knowledge improving nurses' confidence in their skills on pain management. Knowledge had an indirect effect on skills through attitude. Since a high level of knowledge displays more positive attitudes (Sweitly et al., 2022), attitude and practice on pain management are highly correlated (Al Omari et al., 2021), and knowledge may impact practice through the effect of attitude as it improves nurses' willingness to apply the knowledge and engage in pain management practice.

4. Conclusion

This study explored the little – studied topic of Knowledge, Attitude and Skill on pain management among nurses caring post – TURP patients, enriching the literature concerning nursing practice on pain management for caring post – TURP patients. The study found that there was a significant relationship between attending pain management training and knowledge; attitude; skills on pain management. Moreover, the study also indicated that there was a positive relationship between knowledge, attitude and skills of nurses on pain management. Importantly, this study revealed that attitude played a mediating role in the relationship between knowledge and skills. A competency enhance program in pain management for caring post – TURP was developed based on the study result.

In summary, the study underscores the interplay between knowledge, attitudes, and skills in pain management among nurses. Enhancing knowledge directly improves skills while also influencing attitudes, which in turn further enhances skills. For improving skills in pain management among nurses, efforts should focus on enhancing their knowledge through structured educational programs. Additionally, interventions aimed at cultivating positive attitudes towards pain management are crucial as attitudes play a significant role in translating knowledge into effective skills.

Conflict of Interest and Data Availability Statement

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

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