Research Paper

Knowledge, Attitude, and Self-efficacy Toward Pain Management Among Filipino Nurses

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ABSTRACT

Background: Knowledge, attitude, and pain management competence and confidence (self-efficacy) are three significant variables influencing how nurses manage pain and the degree of relief offered to patients; however, research has yet to investigate these variables among Filipino nurses. This study aims to determine the relationship between knowledge, attitude, and self-efficacy in pain management among Filipino nurses.

Methods: The study is a predictive correlational inquiry with a convenience sample of 138 Filipino nurses in selected Level 3 hospitals in Metro Manila. Data were collected from January to March 2022 using the pain knowledge and attitude questionnaire and pain management self-efficacy questionnaire. Frequency, percentage, mean, standard deviation, Pearson r correlation and backward stepwise linear regression were used to analyze the gathered data. IBM SPSS software, version 21 for Windows was used for the analysis. The significance level was set at $P<0.05$.

Results: The participants had difficulty responding to the pain knowledge and attitude questionnaire, with scores of 0-9 (2.49±2.11). Meanwhile, they scored well on the subscale "evaluative pain management self-efficacy," ranging from 12 to 20 (17.19±2.41). Their total pain management self-efficacy score ranges from 59 to 100 (85.45±10.48). Significant relationships were found between pain knowledge and attitude and comprehensive pain management self-efficacy ($r=0.214$; $P=0.012$), evaluative pain management self-efficacy ($r=0.176$; $P=0.039$), and total pain management self-efficacy score ($r=0.209$; $P=0.014$). The regression analysis revealed that comprehensive pain management self-efficacy and educational attainment significantly predict pain knowledge and attitude. The model was statistically significant ($F_{2, 135}=5.812$; $P=0.004$) and accounted for 79% of the variance ($R^2=0.79$), indicating a strong predictive relationship. However, no significant relationship was noted between pain knowledge and attitude and supplemental pain management self-efficacy ($r=0.149$; $P=0.082$).

Conclusion: Pain management needs to be emphasized among Filipino nurses as it is commonly practiced in the clinical setting. Further, it is recommended that regular pain management training programs be implemented to enhance their skills and improve patient care.

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Highlights

● Nurses' knowledge, attitudes, and self-efficacy regarding pain management can influence how they manage pain; however, the relationship between these variables has not been evaluated in Filipino nurses.

● Knowledge and attitude are positively correlated with nurses' pain management competence and confidence (self-efficacy), indicating that the more knowledgeable nurses are and the more apt their attitude is, the more confident and capable nurses will be in dealing with pain.

● There is a knowledge gap among Filipino nurses regarding pain management, so restructuring course content or revisiting methods of instruction may be of value.

● Over a decade later, Filipino nurses' attitudes toward narcotic use have remained negative; however, the persistence of this issue has yet to be explained and further research is needed to identify possible causes.

● Regular pain management training among Filipino nurses may facilitate the development and retention of adequate knowledge, attitude, and self-efficacy, considering that most participants have no prior training in pain management.

Plain Language Summary

Pain management is an essential part of nursing care. Still, there is limited research on how Filipino nurses' knowledge, attitude, and confidence (self-efficacy) affect their ability to manage pain effectively. The results of this study revealed knowledge gaps as nurses struggled to complete the pain knowledge and attitude (PAK) questionnaire. However, they received excellent scores for trust in their ability to assess pain management. The findings also showed a strong correlation between nurses' overall confidence in pain management and their knowledge and attitude. Knowledge and confidence in applying additional pain management approaches, however, did not appear to be strongly correlated. These findings imply that further pain management training is necessary for Filipino nurses to advance their careers and deliver higher-quality patient care. It is recommended that they participate in regular pain management programs to improve their understanding and confidence in managing pain.

Introduction

Regular interaction with the patient allows nurses to take an active role in pain relief, understand the patient's point of view and incorporate it into the treatment plan (Utne et al., 2019). The degree of practical application of concepts and expertise (familiarity, understanding, and experience) in pain interventions enhances or compromises patient's care. Meanwhile, identified as a significant variable resulting in suboptimal pain control, attitudes—personal views and behavior—are often incongruent with recommended practices (Kahsay & Pitkäjärvi, 2019). Knowledge, despite being sufficient, often falls short and becomes less reliable due to advancement in nursing practice (Comley & Banks, 2000). Additionally, "self-efficacy (SE)" or perceived confidence should be factored into nursing care since the presence of high SE is not necessarily an indicator of adequate knowledge and attitude (Macindo et al., 2018).

SE is the degree to which a person feels sufficiently confident in their ability to carry out particular actions under particular conditions. Numerous cases of chronic pain and other forms of discomfort have shown how important SE is for pain management (Arnstein, 2000). The degree of pain, adverse psychological factors, and impairment associated with chronic pain are all impacted by SE (Raman & Sharma, 2022). In previous research, improved SE related to pain has been shown to be a protective factor against the progression of chronic pain and have a positive impact on treatment adherence behavior (Karasawa et al., 2019). Hence, the SE plays a critical role in managing pain among nurses.

Studies revealed that nurses with higher SE in pain management exhibit increased confidence and proficiency in assessing and managing pain using various techniques, including non-pharmacologic therapies such as music therapy and massage and also demonstrate better techniques for efficiently managing pain (Asghari & Nicholas, 2001; Dechasa et al., 2022; Hijam et al.,

2020). Conversely, nurses who have lower SE levels might be less assured of their skills and might be more inclined to depend on inadequate methods for managing pain or ignoring it completely (Vallerand et al., 2011).

As evident in reports from recent studies (Utne et al., 2019; Issa et al., 2017; Moceri & Drevdahl, 2014; Salameh, 2018), pain management has historically faced several challenges. Disparities in treatment approaches among healthcare providers across hospital departments are commonplace (Simon, 2012). Disillusioned viewpoints, poor knowledge, and inexperience undermine the therapeutic benefit of pain management (Macindo et al., 2018; Vranken et al., 2000). There have been reports of nurses underreporting pain symptoms (Seers et al., 2018) and overestimating treatment side effects (Zwakhalen et al., 2007) both of which contribute to suboptimal pain relief. In the Philippines, nurses have a propensity to undermedicate their patients when they are in pain. If a doctor prescribes various doses, for example, they will often opt to provide the lowest dose. They are trained to use the minimum necessary amount of medication to extend its availability, often due to limited access to pain relief options. Among other things, this is because Catholic Filipinos regard stoicism highly and see pain as an opportunity to demonstrate virtue (Galanti, 2000).

Quality pain relief occurs by understanding facts and false beliefs associated with pain, applying accurate pain measurement and comprehensive patient assessment such as pain knowledge and attitude (PAK) and pain management SE, and having expertise with pharmacological and non-pharmacological treatment modalities. However, provider-related barriers such as limited knowledge, perceived risks (Rababa et al., 2021), and aversion to more potent analgesics hinder the quality of care (Toba et al., 2019). Particularly among Filipino nurses on whom research is limited, there is a need to determine their knowledge, attitude, and pain management SE influencing pain relief. A thorough understanding of these variables and their correlation could enhance the quality and reliability of pain relief in the country. Hence, this study aims to determine the relationship between Filipino nurses' knowledge, attitude, and SE on pain management.

Materials and Methods

Design, setting, and sample

The researchers performed a descriptive-correlational study and used a convenience sampling technique to recruit the subjects. The study participants comprised nurses working in selected level 3 hospitals within Metro Manila, willing to participate in the study, and with at least 1 year of hospital experience. The exclusion criteria include those without direct patient care and those who have administrative positions.

A priori power analysis was conducted using G*Power, software, version 3.1 (Faul et al., 2009) to test the relationship between two variables using a two-tailed test. A medium effect size of d=0.30 (Cohen, 2013), and an alpha of 0.05 was used. The result showed that a total sample of 138 participants was required to achieve a power of 0.95.

Research instrument

The study used a three-part questionnaire which includes a profile characteristic sheet, the PAK questionnaire, and the pain management SE questionnaire. A demographic profile sheet contains the participants' characteristics including age, marital status, gender, educational attainment, area of nursing practice, years of clinical experience, and previous pain management training.

The PAK questionnaire is a 10-item questionnaire developed by Zanolin et al. (2007), which evaluates the knowledge and attitudes of healthcare providers towards pain management. The items are answered using a 5-point Likert scale ranging from "strongly agree"=1 to "strongly disagree"=5. The scores from PAK questionnaire can range from 10 to 50 with higher scores indicating more knowledge and better attitude. The Cronbach α was acceptable for the scale with a score of 0.72. Confirmatory factor analysis was used to determine the questionnaire's construct validity. McDonald's omega validates the questionnaire's acceptable reliability with a result of 0.708 and the standardized root mean squared residual (SRMR) index signified that all items are connected to a unique underlying factor with a value of <0.05 (Zanolin et al., 2007). In our study, the Cronbach α was 0.87.

Pain management SE questionnaire (PMSEQ) is a 21-item questionnaire developed by Macindo et al. (2018), which provides effective psychometric properties and evaluates the nurse's pain management SE. The PMSEQ is made up of three subscales: Comprehensive, evaluative, and supplementary PMSEQ, each of which can be answered using a 6-point bipolar scale with "not confident at all"=0 and "highly confident"=6. The total scores from PMSEQ ranged from 0 to 126 with higher scores indicating a higher SE. The Cronbach α was excellent for the scale, with a total score of 0.963, and 0.956 for comprehensive pain management SE, 0.914 for evalua-

tive pain management SE, and 0.823 for supplemental pain management efficacy. The "known groups" technique was used to assess the questionnaire's construct validity using the Mann-Whitney U test and the Kruskal-Wallis H test (Macindo et al., 2018). In this study, the Cronbach α was 0.93.

Data collection procedure

Prior to conducting the study, the researchers sought approval from the instruments' developers. The researchers then sought participants at various healthcare institutions. After securing the participants' informed consent, the researchers used Google Forms for data collection. Data were collected from January to March 2022. The questionnaires took 10 to 20 minutes to accomplish.

Data analysis

The SPSS software, version 21 for Windows was used to analyze the data's frequency, percentage, Mean±SD, and the Pearson r correlation. Also, a backward stepwise linear regression was performed in order to determine the predictors of PAK among Filipino nurses. The Kolmogorov-Smirnov test was also done to test the data normality.

Results

Table 1 shows the participants' demographic profiles. The mean age of the participants was 32.98±5.99 years, were primarily female (70.3%), and single (53.6%). Notably, the highest degree earned by most participants was a bachelor's degree (88.4%), with seven years or more of clinical experience (44.9%). Most reported not receiving pain management training in the past two years (60.1%).

Table 2 shows the overall percentage of correct answers of the subjects to PAK questionnaire with 95% confidence interval (CI). The question with the highest percentage of the correct answer was item No. 2, "The preferred rule of administration of narcotic pain relievers to patients with pain is intramuscular" (the correct answer is "disagree/strongly disagree"). The question with the lowest percentage of the correct answer was item No. 4, "Staff can always pick up cues from children that indicate that they are in pain" (the correct answer is "disagree/strongly disagree"). In addition, the percentage of answers "neither agree nor disagree" is shown as well. The question with the highest percentage of neither answer was item No. 5, "Because narcotics can cause respiratory depression, they should not be used in pediatric patients" (the correct answer is "disagree/strongly disagree").

Table 1. Demographic profile of the participants (n=138)

Characteristics		No. (%)/Mean±SD
Age (y)		32.98±5.99
Sex	Male	41(29.7)
	Female	97(70.3)
Marital status	Single	74(53.6)
	Married	64(46.4)
Educational attainment	Bachelor's degree	122(88.4)
	Master's degree	16(11.6)
Years of practice (y)	1-3	40(29)
	4-6	36(26.1)
	≥7	62(44.9)
Pain management training	Yes	55(39.9)
	No	83(60.1)

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Table 2. Percentage of correct answers and neither agree nor disagree answers in the PAK questionnaire (n=138)

Items in the Questionnaire	% of Correct Answers (95% CI)	Agree of Neither Agree Nor Disagree Answers
A patient should experience discomfort prior to giving the next dose of pain meds.	39.1 (31.4-48.2)	18.1
The preferred rule of administration of narcotic pain relievers to patients with pain is intramuscular.	47.1 (38.3-55.4)	33.3
When a patient request increasing amounts of analgesics to control pain, this usually indicates that the patient is psychologically dependent.	20.3 (13.8-27.8)	35.5
Staff can always pick up cues from children that indicate that they are in pain.	6.5 (3.0-11.9)	21
Because narcotics can cause respiratory depression, they should not be used in pediatric patients.	22.5 (15.7-30.1)	46.4
Children cry all the time; therefore, diversional activities are indicated rather than actual pain meds.	24.6 (17.6-32.5)	30.4
It may often be useful to give a placebo to a patient in pain to assess if he is genuinely in pain.	23.2 (16.3-30.9)	26.8
Estimation of pain by a medical doctor or a registered nurses is as valid a measure of pain as a patient's self-report.	37.7 (29.4-46)	19.6
If a patient (and/or family member) reports that a narcotic is causing euphoria, s/he should be given a lower dose of the analgesic.	15.9 (10.2-23)	38.4
25% of patients receiving narcotics around the clock become addicted.	13.8 (8.4-20.5)	38.4

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Table 3 shows the overall score range of the participants upon completion of the PAK questionnaire and PMSEQ. The participants had difficulty answering the PAK questionnaire with an actual score range of 0-9 (2.49±2.11). Meanwhile, the participants showed a high level of SE on the subscale "evaluative pain management SE" with an actual score range of 12-20 (17.19±2.41). The total pain management SE score range is 59-100 (85.45±10.48).

The relationship between PAK and PMSEQ among the participants was determined using the Pearson r correlation. The results revealed a significant relationship between PAK and comprehensive pain management SE (r=0.214; P=0.012), evaluative pain management SE (r=0.176; P=0.039), and total pain management SE scores (r=0.209; P=0.014). However, no significant relationship was noted between PAK and supplemental pain management SE (r=0.149; P=0.082).

A backward stepwise linear regression was used to identify possible predictors of PAK among the following variables: Educational attainment, years of practice, pain management training, comprehensive, evaluative and supplemental pain management SE. The regression analysis revealed that Comprehensive pain management SE and educational attainment significantly predict pain, knowledge and attitude. The model was statistically significant ($F_{2, 135}$=5.812; P=0.004) and ac-

Table 3. Knowledge, attitude and pain management SE of the participants (n=138)

Variables	Mean±SD	Possible Score Range	Actual Score Range
PAK score	2.49±2.11	0-10	0-9
Comprehensive pain management SE	56.11±6.82	0-70	38-65
Evaluative pain management SE	17.19±2.41	0-20	12-20
Supplemental pain management SE	12.15±2.06	0-15	7-15
Total pain management SE score	85.45±10.48	0-105	59-100

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Table 4. Relationship of PAK with pain management SE among the participants (n=138)

Variables	r Coefficient	P	Interpretation
Comprehensive pain management SE	0.214	0.012	Significant
Evaluative pain management SE	0.176	0.039	Significant
Supplemental pain management SE	0.149	0.082	Not significant
Total pain management SE score	0.209	0.014	Significant

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Table 5. Predictors of PAK among the participants (n=138)

Variables	Regression Coefficient	Std. Error Coefficients	Tolerance	Probability	Interpretation
Constant	-2.518	1.574	-1.6	0.112	
Comprehensive pain management self-efficacy	0.07	0.026	2.702	0.008	Significant
Educational attainment	1.244	0.549	2.265	0.025	Significant

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counted for 79% of the variance (R^2=0.79), indicating a strong predictive relationship. The regression equation suggests that higher SE (β=0.070) and higher educational attainment (β=1.244) are associated with greater PAK. More specifically, PAK rise by 0.070 points for every unit increase in comprehensive pain management SE and by 1.244 points for every unit increase in educational attainment. On the other hand, years of practice, pain management training, and supplemental pain management SE did not significantly predict the PAK among the participants (Table 5).

Discussion

The study found that knowledge and attitude positively correlate with nurses' pain management SE, showing that the more knowledgeable nurses are and the more apt their attitude is, the more confident and competent nurses will be in dealing with pain. Interestingly, however, no association was found with supplemental pain management SE.

Supplemental pain management SE reflects the degree to which nurses can provide pain relief based on pain characteristics and treatment methods oriented toward cancer-related pain management (Macindo et al., 2018). The subscale's strong association with cancer pain could have accounted for the absence of knowledge and attitude correlation, given that PAK was a nonspecific research instrument. There is also the possibility that the sampling was primarily based on registered nurses and not limited to oncology nurses. Nevertheless, a significant positive correlation is evident with comprehensive pain management SE, evaluative pain management SE, and total pain management SE.

A nurse's level of comprehensive pain management SE and their educational background appeared to be significant predictors of pain, knowledge and attitude. Macindo et al. (2018) indicated that this subscale is a measure of confidence associated with systematic and continuing pain assessment, management, and documentation that incorporates the value of addressing pain-related symptoms with respect to individual characteristics and expectations. Its significance in predicting pain, knowledge and attitude is well-founded, as it provides insight into how nurses generally respond to pain and how their views might influence their actions. An excellent outcome on this scale may indicate a well-developed understanding and approach toward pain management, while lower scores may reflect a lack of knowledge and attitude.

Additionally, educational attainment proved to be a significant predictor as well. A higher degree suggests that a nurse is likely to exhibit superior knowledge and attitude toward pain management compared to those with lower educational backgrounds. While no studies indicate the significance of a higher degree in providing effective pain management, several studies have discussed its advantages in nursing. Kjellaas et al. (2020) found that nurses holding a master's degree tend to be more professionally and personally confident in their abilities, as they possess higher critical thinking skills, which

have been shown to have a positive impact on patient outcomes (Van Nguyen & Liu, 2021). Skogsaas et al. (2017) also pointed out that a master's degree offers an edge in critical thinking skills, adding that this advantage is evident in a nurse's ability to perform evidence-based practice. Eizenberg (2011) concluded as such, reporting that nurses holding a master's degree applied evidence-based nursing care more effectively than other nurses.

The findings have also confirmed the presence of a knowledge gap and the need for knowledge reinforcement. The participants encountered difficulties answering the PAK questionnaire, in which the majority of the answers were incorrect and marked with "neither agree nor disagree." The result conforms with the study conducted in Zimbabwe, 35.5% (Manwere et al., 2015), Turkey, 38.2% (Ekim & Ocakcı, 2013) and Malaysia, 25% (Se & Rozainiee, 2009). However, this is relatively lower as compared to high resource countries such as Saudi Arabia 87.5% (Ali et al., 2013), United Kingdom 73.8% (Matthews & Malcolm, 2007), and United States of America, 74% (Tanabe & Buschmann, 2000). This finding showed how inadequate nurses' understanding of pain is. Consequently, there is a pressing need to incorporate ongoing educational programs to raise the standard of pain management knowledge in hospital practice. Universities, healthcare facilities, groups for physicians and nurses, local government offices, and global organizations like the World Health Organization (WHO) should all be actively involved in these efforts.

Meanwhile, the participants also expressed a negative attitude and lack of understanding towards the use of narcotics. In items "When a patient requests increasing amounts of analgesics to control pain, this usually indicates that the patient is psychologically dependent" and "25% of patients receiving narcotics around the clock become addicted," the majority were uncertain, while some were misguidedly in agreement. Analgesics at this level afford greater comfort and have proven highly effective in controlling severe pain (Blondell et al., 2013). Derived from this added level of comfort, nurses have raised concerns about misuse, dependence, and addiction (Koller et al., 2019). Compared to Javier and Calimag's (2007) work on this topic in the Philippines, our study shows that narcotic use in general still evokes negative attitudes more than a decade later. This trend can be seen in the decrease in the percentage of participants who answered correctly to the pain, knowledge and attitude questionnaire. To date, there is no definitive explanation behind the persistence of this issue; hence, further investigation is crucial to gain more insight.

There were several limitations to the study. Pandemic regulations have hindered data collection; thus, the sample included nurses practicing within and outside the Philippines, irrespective of their specialization. Nevertheless, the findings were comparable and consistent as most participants lacked pain management training. Additionally, the PAK questionnaire lacks a subscale separating the variables "knowledge" and "attitude" and was included as a single variable to determine its relationship with SE.

This study has implications for nursing practice, education, and research.

A higher level of knowledge and attitude, and therefore a higher level of SE in pain management, is conducive to improved patient outcomes; hence, consistency across these variables can promote a higher standard of care. Nurses equipped with adequate understanding and greater confidence in pain management can provide far more efficient and reliable nursing interventions, allowing patients access to appropriate care and safer pain relief.

The findings highlight the need for an adaptive approach to pain management training in the undergraduate curricula. Restructuring course content or revisiting methods of instruction may be of value. The establishment of a well-designed educational program may assist future nurses in becoming proficient in this aspect of care. Enhancing Filipino nurses' knowledge, attitude, and SE in pain management at this stage is of critical importance for future practice.

The available studies on Filipino nurses and pain management are limited and outdated. For this subject area to remain relevant over time, further investigation and continuous research are required to maintain accurate and reliable data. The availability of an up-to-date knowledge base will enable nurses and stakeholders to identify additional areas in need of improvement.

Conclusion

The findings revealed that a knowledge and attitude gap regarding pain management is evident among Filipino nurses, but an understanding of and appropriate attitude towards pain management contributes to nurses' SE. Hence, undergraduate nursing programs need to emphasize pain management, for it is a common practice in clinical nursing. As most participants had no pain management training during the past two years, regular pain management training among registered nurses can be one way to rectify these deficiencies. With sufficient

knowledge and aptitude, nurses can provide patients with a holistic, patient-centered approach to pain relief.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Ethics Review Board of San Beda University (SBU-REB), Manila, Philippines (Code: 2021-016). Accordingly, the researchers upheld the participants' right to accept or refuse to participate in the study. Without using force and coercion, the participants voluntarily provided their consent and understood that they could withdraw from the study at any time. Also, the researchers kept the participants' identities anonymous and held the collected data strictly confidential to protect their privacy and confidentiality. After two years of publication, the researchers will discard the data unless needed for another publication.

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Authors' contributions

Conceptualization: Charles Aaron Gil Cruz, Danielle Chloe Delos Reyes, Brian Paulo Eduardo and Gil Soriano; Investigation and data collection: Danielle Chloe Delos Reyes, Brian Paulo Eduardo and Genesis Matthew Gabriel; Methodology and writing the original draft: Charles Aaron Gil Cruz, Danielle Chloe Delos Reyes, Brian Paulo Eduardo, Gil Soriano and Kathyrine Calong Calong; Formal analysis, review, and editing: Charles Aaron Gil Cruz, Kathyrine Calong Calong and Gil Soriano; Project administration: Gil Soriano; Final approval: All authors.

Conflict of interest

The authors declared no conflict of interest.

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