Original Research

Evaluating Nurses Knowledge, Misconceptions, and Attitudes Towards Treating Patients with Chronic Pain: A Pilot Study

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Abstract

Introduction: Chronic pain is complex biopsychosocial phenomenon that affects people worldwide, and nurses play a vital role in treatment. It is essential for nurses to have adequate knowledge and demonstrate no bias towards these patients. The Aim of the study is to determine nurses’ knowledge, attitudes, and misconceptions regarding any patients with pain. Identify any potential biases.

Methods: Participants were invited via email to participate voluntary in this study. Procedure consisted of participants completing KAS survey which captures nurse knowledge and attitudes. A convenience sample was chosen with participants located in Northern California. Data was collected over a 3-month time span in Fall 2023. Data was analysed to determine knowledge and attitudes regarding treating patients with chronic pain. IRB protocol was followed.

Results: 55.5% of participants demonstrated “good knowledge and attitudes”, while 44.0% participants had “acceptable knowledge and attitudes”. There was no significant correlation between years’ experience and test scores (p=0.133). There was a statistical difference between genders in relation to dependent variable test score (p=0.007).

Conclusion: Participants demonstrated higher knowledge than previous works. Data revealed participants did not hold any biases or misconceptions about treating patients with chronic pain. This study recommends continued and enhanced educational training regarding treating patients with chronic pain. This is most relevant to nurses who just beginning their careers.

Keywords: attitude, chronic-pain, knowledge, nurses

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INTRODUCTION

In recent years, the complexity and prevalence of chronic pain has become increasingly apparent, making it a major health concern. Chronic pain affects millions of individuals worldwide and it is often nurses who provide a majority of care and treatment to these patients [1].

Pain is a complex biopsychosocial phenomenon. According to the International Association for the Study of Pain (IASP), pain manifests as, “an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described by the patient in terms of such damage” [1]. Chronic pain is a common and complex condition that can be challenging to treat effectively. People experiencing pain often suffer from multiple co-morbidities, including 20-50% of people also suffering from depression simultaneously [1]. The shift from acute to chronic pain is typically placed at a 12-week duration and the focus of chronic pain is more on addressing the effects of the pain and maximizing quality of life rather than treatment [1]. It is estimated that around 20-30% of Americans suffer from chronic pain, which is similar amongst other places such as Canada, Australia, and other European Countries [2],[3],[4]. This equates to nearly 100 million adults in the United States suffering from chronic pain [1]. In addition, chronic pain is one of the most common forms of chronic illness affecting individuals younger than 60 years of age [5].

Chronic pain management is very important, complex and time-consuming [5]. The effectiveness of several interventions is denoted when collaboration as a team of healthcare professionals takes place [5]. A treatment team for chronic pain generally consists of the primary care provider, addiction specialist, pain clinician, nurse, pharmacist, psychiatrist, psychologist, and other behavioural health treatment specialists. Usual treatment option for mild to moderate chronic pain would consist of a non-opioid analgesic [6]. If this is not sufficient, and if there is a component of sleep deprivation, it is advised to add an antidepressant with analgesic qualities. In the case of neuropathic pain or fibromyalgia, a trial with one of the gabapentinoids is appropriate. If all of these steps are inadequate, then an opioid analgesic is generally added to the course of treatment [6]. Treating pain is one of the most difficult challenges in medicine, and morphine and other opioids remain essential analgesics for alleviating pain [7]. Although, opioids are an essential component to treatment, they present multiple risks including addiction. Due to a multitude of reasons the United States is undergoing an opioid epidemic. This represents a major long-term problem in the United States [8]. The opioid epidemic can affect pain treatment, nurses' knowledge and attitudes toward pain management.

Registered nurses have a vital role in the decision-making process regarding pain management and must be well-prepared and knowledgeable on pain assessment and management techniques [9]. Nurses’ perceptions of chronic pain are likely to influence the pain assessment and pain relief of the patients they care for [10]. Research shows that nurses may have a negative
perception, attitude, and misconception toward pain management [9]. Fifty percent of healthcare providers reported a lack of knowledge in relation to pain assessment and management [9]. Desai and Chaturvedi (2012) surveyed 44 nurses regarding pain behaviours, pain communication, and pain treatment. It was reported that 90% of the nurses surveyed scored in the category of poor knowledge. It was also reported that only 11% of nurses provided correct responses related to discussions on being psychological [10]. Although, patients are often encouraged to rate their pain on a numerical scale from 0-10. Zero being no pain and 10 being the worst pain imaginable [11].

Some nurses, a high percentage (70%) reported that severity of pain was to be assessed by observing a patient’s behaviour and felt that if a housewife complains of pain, it is only to avoid work [10]. More research consisting of a sample size of 200 testing participants using the Nurses’ Knowledge and Attitudes Survey Regarding Pain (NKASRP) found that 89.5% had inadequate knowledge and attitudes regarding pain [12]. The observations highlight the fact that there are major inadequacies in knowledge and education about chronic pain among nurses, with the main focus being on pain communication, assessment of pain, and pain treatment.

Additional research evaluated 400 nurses on two patient scenarios both involving pain. It was reported that nurses are less likely to increase an opioid dose in which is ineffective for a smiling patient compared to grimacing patient [13]. A tendency for nurses’ personal opinions come into play during treatment instead of focusing on recorded pain assessments which influence the opioid dose adding to under treatment of pain [13].

Thus, it is not surprising that pain management remains a major concern for health care worker and patients. Most recent debate has concluded that challenges by nurses are knowledge deficits, negative attitudes, inadequate record keeping, poor patient assessment, and improper analgesic use [14], [13],[15], [16], [17], [18]. Even using pain scales has shown to have poor knowledge [19].

As we look further into this issue, the knowledge and attitudes of nurses towards pain management emerge as crucial factors that can affect treatment negatively. Nurses play a vital role in the decision-treatment of pain management, yet studies have shown significant gaps in their knowledge and misconceptions about pain management. Previous works indicates a lack of knowledge and the potential for negative attitudes and misconceptions when caring for these patients. This research by focusing on nurses selected from faculty members and members of a nursing honour society, aims to determine whether these professionals’ knowledge and attitudes align with broader literature findings or if they exhibit different characteristics. The urgency and importance of this research lies within the population sample. Faculty members are teaching the future generations of nurses and nurses who are members of an honour society often are leaders within organizations.

The research question of this study aimed to evaluate nurses’ knowledge and attitudes of treating patients with chronic
pain and determine if this chosen subset of nurses selected from faculty members and members of a nursing honour society will produce similar results to the literature.

METHODS

Design Setting

This cross-sectional survey consisted of a 38-item questionnaire and a demographics form. The location of the study was a school in Northern California. Recruitment was also done within an honour society in which the chapters location was also Northern California. Recruitment was done via email and survey was completed online using the platform Qualtrics and was fully anonymous. Correlation research study was done to look at numerous variables of participants knowledge, attitudes, and perceptions of treating with patients with chronic pain. Data was collected over a 3-month period of time Fall of 2023.

Participants

A convenience sample was chosen. This sample consisted of Faculty members of a School of Nursing on the west coast of the United States and members of the Sigma International Honors Society of Nursing. After completion of recruitment of both sample populations nine registered nurses completed the study.

The inclusion criteria for this study included members of the Sigma International Honors Society of Nursing and/or members of Nursing Faculty with a school of nursing on the west coast of the United States. In addition, these members from either group must be a licensed registered nurse who currently works or has worked in a hospital setting. The registered nurses must be at least eighteen years of age to participate. Lastly, the participants had to be willing and able to participate in the study by filling out the survey tool provided and by giving their informed consent to participate.

The exclusion criteria for this study included nursing students, new graduate nurses or nurses who have been in the clinical setting for less than a year, those unwilling to participate, and those who do not give their informed consent to participate.

Instrument

This study utilized the “Knowledge and Attitudes Survey (KAS) Regarding Pain” tool [13]. The KAS tool was developed over several years and content validity was established by review of pain experts [13]. The survey is intended to determine the significant difference in the mean total knowledge score. It is a 38-question survey that includes 22 true or false questions, 14 multiple-choice questions, and 2 case study questions. No permission is required to use the KAS survey tool because the authors allowed its use for research. The KAS inventory does not divide scores between knowledge and attitudes, it is a combined score.

Data Collection

Two population samples were used, Faculty members at a school of nursing and members of a nursing honour society. Recruitment for both groups was done via email which include
all information about the study along with the survey links. After the initial email several more recruitment emails went out of the course of several months to increase participation. Participants were asked to sign the consent form and begin to fill out the surveys at their earliest convenience. Both the KAS and demographics were housed on the platform Qualtrics. Data collected from participants during the data collection period 9 to 11 2023.

**Data Analysis**

Descriptive analysis of the data was conducted which evaluated frequency, percentages, mean, mode, and standard deviation of several categories. Inferential analysis was used consisting of independent sample t-tests. The statistical significance was considered as a p-value of less than 0.05.

**Ethical Clearance**

The study adhered to all ethical guidelines and approval from an Institutional Review Board (IRB) was obtained to ensure participant rights, confidentiality, and overall ethical conduct related to the study. All IRB protocols were followed and approved by California State University Chico IRB committee. The study number and approval was IRB-2023-65, which was approved on 8.8.23.

**RESULTS**

The results were analysed from 9 participants who volunteered to partake in this research. Participants ages ranged from 25-to greater than 55 years of age.

For the purpose of the study the scores of less than 50% were classified as poor, 50%-75% were classified as acceptable, and scores greater than or equal to 75% were classified as having good knowledge and attitudes on the survey [20]. Data revealed that 55.5% of scores ranked in the category of “good knowledge and attitudes” while 44. % scores fell into the “acceptable knowledge of attitudes” category. Numerical scores ranged from 29-34. Max score possible on the KAS is 39. The average score was 31.78 with a standard deviation of 2.22.

When comparing the scores to years of experience, the five individuals who scored within the “good knowledge and attitudes” range all listed having 20-30 years of experience, while the 4 scores considered “acceptable” all listed having 20 or less years of experience.

As seen in the graphic (Figure 2). it appears more the higher experience levels resulted in higher knowledge test scores. To determine if this was significant, a Pearson correlation was performed to determine if there was a correlation between the variable's years' experience and test score. There was a high, negative correlation between the variable's years' experience and test score with \( r = -0.54 \). Thus, there was a high, negative relationship between years’ experience and test score in this sample. This Pearson correlation showed that there was no significant correlation between years’ experience and test score \( r (7) = -0.54, p = .133 \).

Demographics revealed that 66.67% (n=6) identified as cisgender female, while
22.22% (n=2) identified as cisgender males, and one chose not to answer. Descriptive statistics showed that the Cisgender Female group had higher values for the dependent variable test score ($M = 32.33, SD = 1.86$) than the Cisgender Male group ($M = 29, SD = 0$). A two-tailed t-test for independent samples (equal variances not assumed) showed that the difference between Cisgender Female and Cisgender Male with respect to the dependent variable test score was statistically significant, $t(5) = 4.39, p=.007$, 95% confidence interval [1.38, 5.29]. A p value of 0.05 was used. Thus, it was determined that there was a statistically significant difference between the Cisgender Female and Cisgender male scores in relation to dependent variable test score.

When looking at if the respondents have taken care of a patient who has suffered from chronic pain, data showed that 88.8% of participants have taken care of a patient with chronic pain before. Lastly, when looking at the most missed questions, the data showed that the most frequently missed questions had to do with specific pain medications and correct dosing based off physicians’ orders and patient reported pain levels.

![Fig. 1. Participants per age groups](image-url)
Table 1

Test Score Statistics

<table>
<thead>
<tr>
<th>Test Score</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>31.78</td>
</tr>
<tr>
<td>Median</td>
<td>33</td>
</tr>
<tr>
<td>Mode</td>
<td>34</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>2.22</td>
</tr>
<tr>
<td>Minimum</td>
<td>29</td>
</tr>
<tr>
<td>Maximum</td>
<td>34</td>
</tr>
</tbody>
</table>

Fig. 2. Average score by years of experience

Table 2

Participants by gender

<table>
<thead>
<tr>
<th></th>
<th>Percentage (%)</th>
<th>Frequency (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cisgender Female</td>
<td>66.67</td>
<td>6</td>
</tr>
<tr>
<td>Cisgender Male</td>
<td>22.22</td>
<td>2</td>
</tr>
<tr>
<td>Not Reported</td>
<td>11.11</td>
<td>1</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>100.00</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>
**Table 3**

Questions Most Frequently Answered Incorrectly

<table>
<thead>
<tr>
<th>Question</th>
<th>Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>#5 Aspirin and other nonsteroidal anti-inflammatory agents are NOT effective analgesics for painful bone metastases.</td>
<td>3/9</td>
</tr>
<tr>
<td><strong>True or False</strong></td>
<td></td>
</tr>
<tr>
<td>#16 Vicodin (hydrocodone 5 mg + acetaminophen 300 mg) PO is approximately equal to 5-10 mg of morphine PO.</td>
<td>1/9</td>
</tr>
<tr>
<td><strong>True or False</strong></td>
<td></td>
</tr>
<tr>
<td>#3 Patients who can be distracted from pain usually do not have severe pain.</td>
<td>2/9</td>
</tr>
<tr>
<td><strong>True or False</strong></td>
<td></td>
</tr>
<tr>
<td>#6 Respiratory depression rarely occurs in patients who have been receiving stable doses of opioids over a period of months.</td>
<td>2/9</td>
</tr>
<tr>
<td><strong>True or False</strong></td>
<td></td>
</tr>
</tbody>
</table>

**DISCUSSION**

Research revealed the average score of participants was 31.78 out of 39. These findings go against previous work in which reported nurses have poor knowledge and attitudes on pain as a majority of this studies participants received good knowledge 55% and 44.4% received scores deemed acceptable knowledge [13], [9], [10].

Using the KAS mean score was 18.5. Saudi nurses showed a lower level of pain.
knowledge compared with our sample 31.78 [9]. This sample was associated with poor attitudes toward pain management [1]. This score was consistent with previous work in middle eastern countries [21] [22] [23]. A Turkish study showed nurses knowledge even lower at 35.4% correct [24].

There are several potential reasons why our data differs from these previous works. One could be the sample chosen, in which nurses were highly educated and had higher years of experience as nurses. The sample size is could also play a role. A previous theory by the authors of [9] research noted that nurses have poor knowledge of pain management. This appears to be consistent in middle eastern countries. The lack of training and non-pain pharmacological courses in nursing school curriculum could play a role. To test the theory that highly educated nurses have more pain knowledge than less educated nurses, further research needs to be conducted with a larger sample size with this particular subset of population sample.

From the data collected it the nurses with more clinical experience scored higher on the survey than those with less experience. This resulted in a negative Pearson correlation but was not statistically significant. When comparing the test scores of those who identified as female compared to those who identified as female, results were statistically significant in which females scored higher. Experience treating patients with chronic pain did not seem to have any implications on the scores earned for participants. Among participants, there appears to be a general lack of understanding regarding the common medications administered to treat chronic pain.

**Limitations**

The sample size was relatively small at only 9 participants. The sample was not equally distributed amongst gender. Participants self-reported answers and could have used outside sources on the knowledge survey. The population sample partly consisted of faculty members of a school of nursing requiring advanced degrees, in which participants could potentially have more knowledge than an average nurse working at the bedside. The sample size likely does not represent registered nurses as a whole. Participants reported a vast number of years of experience which could skew the data. It is important to repeat this study on a much a larger scale with participants who have advanced degrees such as faculty members along with more experienced nurses to determine if this results in this study can be reproduced at a large scale.

**CONCLUSION**

This study revealed that nurses with at least 20 years of experience demonstrated higher levels knowledge related to treating patients with chronic pain. The chosen sample of this study involved faculty members with advanced degrees and members of an honour society went against previous works findings. This population had higher knowledge levels than previously reported and held no biases or misconceptions toward this patient population. This could be due to advanced degrees or higher levels of experience. It is
important to continue this research with similar population samples to see if more experienced nurses have less misconceptions or biases towards treating patients with chronic pain in the clinical setting compared to less experienced counterparts.

**FUNDING**

The researchers had no funding for this research.

**CONFLICT OF INTEREST**

Authors declare there was no conflict of interest regarding this study.

**ACKNOWLEDGEMENT**

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**REFERENCES**


[22] P. M. Almalki BHSc, MNSc, PhD CANDIDATE, G. FitzGerald MBBS, BHA, MD, FACEM, FRACMA, FCHSE, M. Clark
