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Research Article

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Improving Pain Management Knowledge Among Nurses

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Abstract

Pain is the most commonly presented symptom among patients who are admitted to the emergency department. Unfortunately, many barriers to pain management exist thereby impacting emergency department patient care and outcomes, specifically regarding inadequate pain assessment, reassessment, and documentation. Thus, the quality improvement project aimed to increase emergency department nurses knowledge of pain management and utilization of pain assessment guidelines, resources, and policies. By nurses having sufficient education, they can provide timely and efficient care to support patient outcomes, improve patient comfort, and improve patient satisfaction. The Knowledge and Attitudes Survey Regarding Pain was utilized to conduct a pre and post-test assessment to measure emergency department nurses' knowledge of pain management [1]. The results of the quality improvement project showed that nurses lacked adequate pain management knowledge, 45.45% of participants responded incorrectly to knowledge questions about pain before the intervention. However, after the project implementation, the results of the data analysis showed a statistically significant mean increase of 23.91% from pre-intervention (65.65%) to post-intervention (89.56%) after eight weeks of project implementation. This quality improvement project will provide a basis for future studies in improving nurses' pain management knowledge.

Keywords: Improving Pain Management Knowledge, Joint Commission Guidelines, Emergency Department Nurses

Introduction

Pain is a worldwide problem and is the most common condition encountered by healthcare professionals [2]. In the United States, emergency department (ED) visits have risen over 46% from 1996 to 2015 [2]. In fact, with regard to the rise in ED visits, 45% of visits involve patients who are experiencing moderate to severe pain [3]. Despite several years of research, millions of patients worldwide suffer unnecessarily from untreated pain [4]. The most common reason patients present to the ED is acute pain, which accounts for 70% of ED visits [5]. However, many patients who visited the ED report that they received inadequate pain management or did not receive pain management treatment in any form [3].

Samcam and Papa noted that patients who had pain scores documented by hospital staff received pain medications, but patients who did not have verbal pain scores recorded did not receive analgesics [3]. Thus, nursing assessment and documentation is imperative for effective management of acute pain. Unfortunately, failure to treat pain in the ED has been labeled a public health problem, producing an increasing economic and social burden [6]. Thus, nurses have a moral, ethical, professional, and humanitarian responsibility to advocate for appropriate pain management [7]. Nurses also play a critical role in assessing and documenting pain [7]. Undertreated and untreated pain has an impact on mobility and mortality and is a significant avoidable public health problem [6].

Therefore, nurses must possess up-to-date knowledge regarding pain management techniques, have excellent documentation skills, and must also be aware of their institution's pain management policy to provide safe and compassionate care for vulnerable ED patients [8]. Hospital and healthcare institutions must have protocols, procedures, and guidelines in place and should also provide training and development opportunities, which can improve the knowledge of nurses and their ability to document pain concerns. To improve pain management knowledge among health care providers, the Joint Commission published in 2017, new pain assessment and management standards that require hospitals, that are accredited, to participate in establishing protocols to assess and manage the patient's pain (JC, 2017) [9]. To intervene in the practice performance of emergency department nurses, a quality improvement (QI) intervention was initiated. A QI is a formal approach to the analysis of the emergency department practice performance and involves both prospective and retrospective review.

Objectives

This quality improvement project aimed to provide timely and efficient care to support optimal patient outcomes, improve patient comfort, and improve overall patient satisfaction. The rationale behind the proposed project was to improve pain assessment knowledge, attitudes, and documentation among emergency department nurses. Since nurses are the front-line providers, who

interact with patients on a frequent basis, it is critical that nurses be provided with evidence-based education. This, in turn, will allow nurses' to assess and reassess pain issues in compliance with the guidance of the hospital's established policies. The objectives of this quality improvement project were to assess, measure, and figure out ways to improve pain assessment, reassessment, and documentation at a small community Northeastern Hospital.

The QI project was implemented in a small community hospital located thirty miles north of Manhattan, New York. The acute care hospital provides comprehensive care to patients of every age (i.e., from neonatal care to geriatrics care). The acute care facility can hold up to 375 patients and provides a wide range of outpatient and inpatient services. A micro system needs assessment was conducted on January 2018 and was determined that a problem with pain assessment, reassessment, documentation, and the lack of nurse knowledge on the current Joint Commission guidelines exist. The evaluation revealed that the emergency department (ED) nurses were not compliant with pain assessment and reassessment, and documentation during a retrospective chart review.

During the needs assessment survey, multiple areas that need improvement were found, such as old pain assessment policy, challenging to find the policy in the computer database, departments did not organize hospital policies, and no pain assessment guidelines. Nurses' lack of knowledge regarding where polices were located, and the nurse's knowledge of and attitudes toward pain management were some of the contributing factors to the problem. Also, the ED is a busy working unit, not having visual reminders, not having an electronic icon reminder, and lack of pain assessment scales were other contributing factors. Effective pain management and compliance with the Joint Commission guidelines was a priority for the organization. Thus, the goal was to implement evidence-based guidelines and tools to improve nurse knowledge regarding pain assessment and documentation.

Synthesis of the Literature

The articles discussed in this literature review were published from 2012 to 2017. CINAHL, Cochrane Library, Google Scholar, MEDLINE, PubMed, and Ovid databases were used to locate literature related to this study. Keywords such as "nurses' knowledge of pain management," "nursing attitudes," "nurse pain assessment," "documentation," "emergency department," "education," and "pain scale tools" were used to search for relevant information about pain management in nursing and patient care outcomes. After searching for primary and systematic review articles, related articles were selected and summarized.

Nurses Knowledge and Attitudes Regarding Pain Management

In a descriptive cross-sectional study, Issa, Awajeh, and Khraisat explored pain knowledge and attitudes among nurses, who work in the intensive care unit (ICU), using the knowledge assessment pain (KASRP) survey instrument. From the selected sample of 289 ICU nurses, 204 responded, thereby indicating a high response rate. Of the 204 study participants, the selected knowledge and attitude questions were answered incorrectly by more than 50% of the nursing staff [10]. The findings of this study suggested that lacking knowledge regarding pain assessment contributes to inadequate pain treatment provided by nursing staff.

According to Abozeid, Al-Kalaldeh, and Al-Tarawneh, nurses have the responsibility to apply relevant assessment strategies and interventions [11]. Unfortunately, effective pain management is hindered by lacking knowledge, among nurses, related to the proper utilization of opioid analgesic drugs [11]. Similarly, a study conducted by Lin, Reid, Chused, and Evans noted that acute pain in hospitalized patients is not only common but also poorly treated, thereby attributing to co-morbidities and polypharmacy [12].

Research conducted by Kizza, Muliira, Kohi, and Nabirye found that critically-ill, adult patients (CIAP) are usually under the care of nurses who are ill-equipped to manage pain [13]. Nurses should be skilled in managing pain in a critical care setting. As such, through the acquisition of appropriate knowledge and skills, nurses can understand pain assessment and its effects on patients, and how evidence-based practice can help to manage pain concerns [13]. However, about 50% of nurses working in critical care settings lack the necessary skills associated with proper patient pain assessment argued that underassessment of pain could be attributed to the nurses' attitude, misconception, and beliefs about pain management [13].

Some barriers to the Emergency Department (ED) prevent effective pain management [14]. When a provider lacks knowledge and familiarity concerning a patient's condition(s) and is experiencing time barriers, the quality of services received diminishes. Ineffective pain management leads to long-term psychological conditions including, but not limited to, post-traumatic stress disorder [15]. Ortiz et al. supported the principal argument that adult pain issues are poorly managed, which is due to lacking knowledge among health practitioners concerning proper pain management strategies and techniques [16]. Regardless of several psychological and pharmacological approaches, health providers exhibit inappropriate attitudes when managing pain. Similarly, Al-Quliti and Alarm cited that in emergency departments, pain management is hindered by time constraints, inadequate knowledge among nursing staff (regarding pain assessment guidelines, policy, and management), and inaccurate perceptions of analgesia, in addition to the under-assessment of pain [17]. According to Song, Eaton, Gordon, Hoyle, and Doorenbos, pain management is hindered by time constraints that impede implementation of non-pharmacological interventions, as well as lacking evidence-based knowledge regarding the successful implementation and utilization of non-pharmacological interventions [18]. Research studies conducted by Pretorius, Searle, and Marshall and Van Hecke et al. indicated that nurse-related obstacles, inadequate knowledge, and insufficient pain evaluations hinder effective intervention and patient treatment [19].

Documentation

Inconsistent documentation has been recognized as a contributing factor for inadequate treatment for pain. In a systematic review, Georgiou, Hadjibalassi, Lambrinou, Andreou, and Papathanassoglou noted that interventions such as having valid pain assessment tools do have an impact on nurses' practice as evidenced by improved pain assessment documentation [20]. Evidence-based practice demonstrated that there is a need for nurses to document patients' response to pain and factors that trigger and alleviate the intensity of pain [11].

Daily documentation is useful regarding patient care, as documentation can help nurses in assessing the severity of pain and can assist in their efforts to control acute pain. Lin et al. articulated that documentation can be useful when it comes to identifying episodes related to pain.

In their study, only one case of failure was reported because of lack of documentation [12]. Therefore, documentation becomes useful, as nursing standards and responsibilities are reinforced [13]. Further, literature presents nurses with an opportunity to ensure the quality assessment of pain and reporting based on the individualized needs of patients. Nurses should understand proper documentation to effectively reduce suffering while also promoting positive patient outcomes [13].

Fallon et al. noted that inadequate documentation of pain has often resulted in poor management of pain in ED. Approximately 75% of ED patients are discharged with moderate to severe pain [14]. While in most cases, nurses rely on patients' reports to make documentation, providers fail to adequately assess pain and substitute the discomfort that patients are experiencing with their own beliefs [15]. Ortiz et al. (2015) found that guidelines were used in practice to manage pain, explicitly noting that pediatric nurses used protocols to control pain. Although record keeping is integral in the process of pain management, Al-Quliti and Alamri reported that in critical care settings, documentation could improve the confidence levels of nurses who are responsible for pain assessment for non-verbal patients [17]. Song et al. alluded that documentation is necessary for pain assessment [18]. Conversely, in a study by Pretorius, Searle, and Marshall, the documentation of the pain score enable to achieve pain assessment and managing pain [19].

Strategies to Improve Pain Management

According to Abozeid, Al-Kalaldeh, and Al-Tarawneh, pain education programs can be used to improve pain management [11]. Training programs should integrate group discussions and formal lectures regarding methods for pain assessment and management. Moreover, acute pain can be improved through pain assessment, increasing the frequency of pain review, and accounting for the number of severe pain episodes. According to Kizza et al., continuous education equips nurses with the knowledge, skill, and abilities regarding pain management [13]. In their study, Kizza et al. demonstrated that 68% of nurses attend ongoing classes on pain management, but only a small number of nurses are knowledgeable in pain assessment and management strategies [13]. Nurses mainly focus on the physiological of pain and non-pharmacological strategies, but topics associated with pain assessment are the least discussed.

Fallon et al. noted that pain management could be improved in the ED, by utilizing pain management guidelines that are centered on factors linked to quality measures; this can help improve outcomes [14]. An institutional needs assessment is another strategy that can be used to improve pain management since it puts more emphasis on managing pain. Ortiz et al. posited that due to the importance of understanding pain management and the ability of practitioners to assess pain, it is vital that continuous education programs explore the theoretical knowledge necessary to assist nurses further adequately to manage pain [16].

In contrast with Ortiz et al., Al-Quliti and Alamri noted that nursing schools should review curriculum presented to students to ensure that students are acquiring the knowledge, skills, and abilities to manage patient pain concerns effectively [16,17]. Also, nurses must use evidence-based practice to manage and assess pain. Song et al. (2015) asserted that pharmacological interventions, pain assessment, and patient education and communication were effective methods of improving pain management among cancer patients. Pretorius, Searle, and Marshall contended that knowledge is the most significant motivator to improve pain assessment, hence an excellent strategy to manage pain, especially in the ED [19].

Ospina et al. evaluated the effectiveness of knowledge translation (KT) interventions for pain management [21]. The researchers noted that interactive educational interventions, which were directed towards educating health providers, led to positive effects on patients' pain relief and improved patient's functional level. However, the authors stated that many factors, which include lacking resources, as well as individual and organizational constraints, impede the incorporation of pain management/assessment practice changes [21]. Finally, Ospina et al. noted that various knowledge translation interventions exist; however, there is a shortage of research available regarding theoretical and empirical frameworks for classifying pain management [21].

Pain Management Guidelines are Essential

It is critical that guidelines be available for nurses when assessing patient pain concerns. Abozeid, Al-Kalaldeh, and Al-Tarawneh alleged that training practitioners and medical personnel should use available guidelines and recommendations when creating pain related education programs for nurses. Additionally, guidelines should be provided for nurses when caring for patients who have acute pain concerns [11]. Primarily, the proper management of opioid prescriptions, when treating those who have severe pain, should be reinforced. Consistent guidelines, which are used for the management of pain, could offer insights regarding potential hospitalized opioid prescriptions errors. While opioid pharmacology is known to cause renal and hepatic failure, it is important to note that improper prescription of opioids is often a contributing factor related to these system failures [12].

Kizza et al. reported that in acute care settings, the degree of pain experienced by patients is often overwhelming, hence reliable pain assessment tools and guidelines are useful in reducing pain. Furthermore, only 10.6% of nurses know pain assessment guidelines, as pain assessment is one of the least discussed topics in nursing educational programs [13]. During pain assessment and management, the guiding principle used by nurses should be to rely on self-report (the patients telling about their pain), with the patient being the primary information source. However, communication barriers such as cognitive impairment, language, and issues of trust and familiarity may hinder the patient's ability to provide nurses with information on their pain experience. Therefore, practice guidelines may fail to guarantee positive outcomes, mainly when these guidelines do not address communication barriers and are not efficiently applied by practicing nurses [13]. Nurses can also use guidelines as best practices to manage inpatient pain, to assess pain, and to administer analgesic prescriptions [15]. Nonetheless, Ortiz et al. stated that the majority of inpatients receive inadequate pain management, henceforth guidelines should be used to improve and also prepare health providers to use best practices when managing pain [16].

Methods

The quality improvement project was conducted from April 2018 to June 2018 on a specific targeted population.The inclusion criteria for participation in this QI study included registered professional nurses who were working in the emergency department at Northeastern Hospital, New York and who were willing to participate in the survey. Nurses excluded from the QI project included those who

were serving in management positions. Participation in the QI project was voluntary. Thus, participants were able to withdraw at any time from the project. After recruiting all ED bedside registered nurses via hospital email, the rate of participation was only 33.0% (N=23) of the population targeted.

The QI project was divided into two phases, the pre-intervention, and post-intervention phase. Initially, 30 patient charts were reviewed during the pre-intervention period. The patient charts were reviewed for pain assessment, reassessment, and documentation. Then, the Knowledge and Attitudes Survey Regarding Pain was used to conduct a pre-assessment to measure emergency department nurses' knowledge of pain management [1]. There were 30 questions where the answers were either scored as 1 = correct or 0 = incorrect. The answers were added up, and the total percent of correct answers were calculated for each of the N=23 participants at pre-intervention.

The QI interventions started in May of 2018. Nurses were provided with education via PowerPoint presentations and resources to assess, reassess, and document pain related matters in a competent manner. Resources, such as pain assessment guidelines, visual reminders, a reminder icon in the Electronic Health Record (EHR), pain assessment scales, and educational in-services were implemented to assist nurses in becoming knowledgeable about the pain assessment process.

According to Stang, Hartling, Fera, Johnson, and Ali, the first step in improving the pain experience is to assess the actual care accurately and systematically [22]. The second step is pain reassessment after an intervention, and finally documentation. The focus of this project's response was to provide nurses with practical guidelines for acute pain assessment, add a reminder icon in the EMR, provide pain scales tools, visual reminders, and update existing pain assessment policy that is aligned with the new JC standards. The Knowledge and Attitudes Survey Regarding Pain (KASRP) tool was utilized to assess the knowledge and attitudes of nurses regarding pain using a pre-test and post-test to determine the effectiveness of the intervention. The KASRP tool was developed in 1987 and has been used extensively since then, primarily since the researchers, such as Ferrell and McCaffery, have found this tool to be reliable when utilized to measure educational program implementation [1]. Over the years, the tool has been revised to reflect various changes associated with pain management practices [1]. According to Heilman, Tanski, Burns, Lin, and Ma, timeliness of pain relief is a part of the Institute of Medicine's (IOM) six aims to improve quality [23]. Therefore, improving pain assessment, management, and documentation will assist in meeting the goals/aims set forth by the IOM, thereby enhancing the patient experience.

Thomas stated that pain could not be treated if it is not assessed. Thus, pain screening should be done with numeric rating scales, visual analog scales, and other scales that are pertinent to a patient's age and presenting condition such as children and elderly patients who are non-verbal or cognitive impair [24]. Thomas have noted that pain management education can prepare nurses to assess patient pain levels efficiently, monitor for side effects associated with analgesics, and improve overall pain documentation efforts [24]. Deficient pain assessment knowledge among nurses working at Northeastern Hospital was the cause for concern. Thus, implementing evidence-based guidelines for pain management can improve the understanding of nurses so they can adequately assess the patient's pain and the plan for treatment, whether it is pharmacological or non- pharmacological.

After the QI project intervention was completed, post-intervention data were collected. A prospective patient chart review (N=30) and KASRP post-intervention survey. During the data review, pain assessment, reassessment, and documentation were reviewed similarly to the pre-intervention phase. Tables and figures summarizing the pre and post-intervention findings will be displayed.

Results

The data analysis was performed to determine the effects of the QI project, and significant findings of the "Knowledge and Attitudes Survey Regarding Pain" with the twenty-three completed surveys (N=23) [1]. There were 30 questions, where the answers were either scored as 1 = correct or 0 = incorrect. The answers were added, and the total percent of correct answers were calculated for each of the 23 participants at both pre-intervention and post-intervention. The pre-intervention results found that 45.45% of nurses responded incorrectly to knowledge questions about pain in which can significantly compromise their ability to care for patients experiencing pain [25]. However, after implementing the interventions, the results of the KASRP showed a statistically significant mean difference increase of 23.91% from pre-intervention (65.65%) to post-intervention (89.56%) of the QI project (**Table 1 & 2**).

Table 1: Paired Samples Statistics

Test	M	N	SD
Pre-Knowledge Survey Regarding Pain Score	65.65	23	16.830
Post-Knowledge Survey Regarding Pain Score	89.56	23	11.690

Table 2: Paired Samples Test

	Paired Differences						
			95% Confidence Interval of the Difference				
	M	SD	Lower	Upper	*t*	*df*	*p.* (2-tailed)
Pre-Knowledge Survey Regarding Pain Score - Post-Knowledge Survey Regarding Pain Score	-23.91	20.06	-32.59	-15.23	-5.715	22	.000

The result above suggests that the intervention had a significant impact on raising pain knowledge scores on management guidelines and assessment among emergency department nurses.

Mean Nurses Knowledge Survey Percentage of Correct Scores

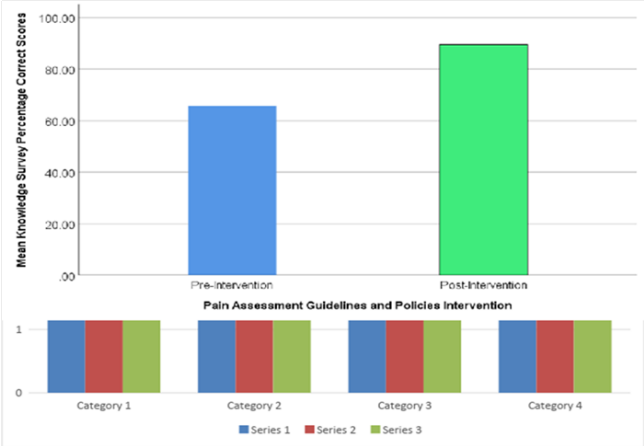

Figure 1: Mean knowledge survey percentage correct scores as ilustrated by pre- and post-pain assessment guidelines intervention.

Charts Audit Results Pre-Intervention

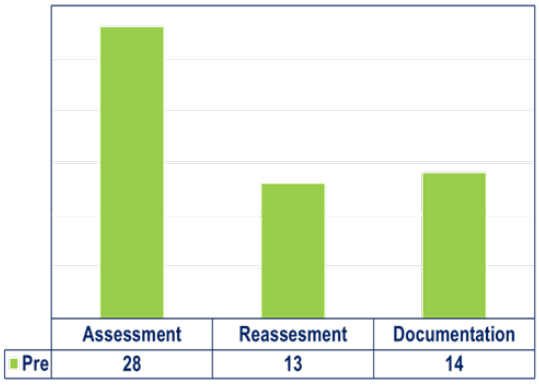

Figure 2: A total of 30 charts were reviewed, out of the 30 patient-charts, 28 (93.33) patients were assessed for pain, only 13 (43.33%) were reassessed for pain after the intervention, and only 14 (46.66%) were documented correctly.

Charts Audit Results in Eight Weeks Post-Intervention

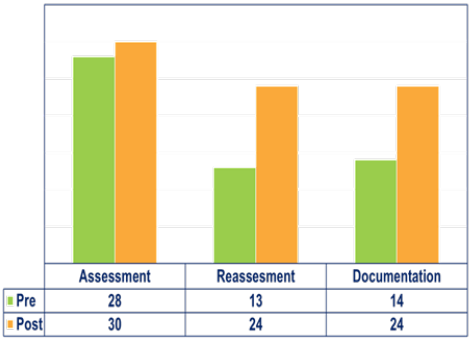

Figure 3: A total of 30 charts were reviewed, under the assessment 30/30 (100%) patients were assessed for pain, under pain reassessment 24 out of 30 (80%) patients were reassessed for pain, and under documentation 24 out of 30 (80%) had complete pain documentation.

Summary of Pre and Post Intervention Chart Audit Results

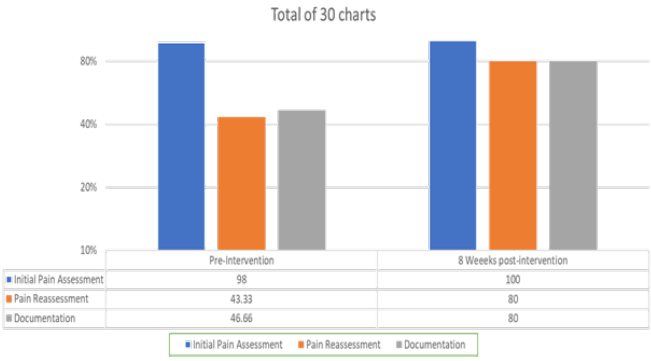

Figure 4: A total of 30 charts were reviewed, under the assessment, reassessment, and documentation have improved from pre to post-intervention, especially pain reassessment and documentation.

Eight weeks after the intervention, a total of 30 charts were reviewed. Under the assessment, 100% of patients were assessed for pain, under pain reassessment, 80% of patients were reassessed for pain, and under documentation, 80% of nurses completed adequate pain documentation (Figure 3). When comparing the findings, there are significant improvements from the pre-implementation stage (Figure 1). The results mean that the project implementation did improve nurses' knowledge and skills when assessing, reassessing, and documenting for pain as evidenced by a gain of 23.91 %, which is statistically significant. The KASRP and chart audit review demonstrate that the QI project did help to improved pain management knowledge. The potential risks and unintended consequences, which may have impacted the project's overall success, included resistance from nurses to change practices, lack of time to document all aspects of pain assessment in the EHR, and ED overcrowding. Nurses felt overwhelmed by the requirement to adhere to an additional guideline, thus resulting in reduced documentation or lack of compliance.

In a descriptive cross-sectional study, Issa, Awajeh, and Khraisat explored pain knowledge and attitudes, among nurses who work in the ICU using the KASRP survey instrument [10]. From the selected sample of 289 ICU nurses, 204 responded, thereby indicating a high response rate. Of the 204 study participants, the selected knowledge and attitude questions were answered incorrectly by more than 50% of nurses. This finding was also true in this QI project where 45.45% of nurses responded incorrectly to knowledge questions about pain before the intervention.

Conclusions and Contributions to the Profession of Nursing

Pain is the most common reason why patients present to the emergency department [26]. Unfortunately, millions of ED patients across the world are undertreated for pain [26]. The under treatment of pain has been attributed to several factors, which include logistical challenges in the ED, limited pain control, lack of education and training among nurses, regulatory and legal concerns associated with medication distribution, and other barriers [26].

Regarding the current study, the lack of knowledge regarding pain management has been the primary barrier for under treatment of pain [27].

The findings are worrisome since emergency department nurses play a vital role in pain assessment, reassessment, and documentation. The results of this QI project indicated that 45.45% of nurses responded incorrectly to knowledge questions about pain before the intervention. Similarly, Issa et al. noted that 204 participants answered the knowledge and attitude survey incorrectly by more than 50%. Inadequate pain assessment, reassessment, and documentation are due to the lack of pain management knowledge [10].

Lack of knowledge among nurses is one of the main barriers to adequate pain assessment and management [27]. Therefore, this quality improvement project provided an educational in-service on pain management guidelines from the Joint Commission and contributed resources to assess, reassess, and document pain appropriately. Each nurse who works in the emergency department and other specialties should be confident and should possess the necessary pain management knowledge and skills. There is an urgent need for nurse leaders, educators, and other hospital stakeholders to improve pain assessment knowledge and skills among nursing staff, in hopes of providing adequate pain management care. Regular and continuing education programs and annual competency in pain management skills are critical to improving patient outcomes.

Regarding future research, the researcher suggests that it would be beneficial to conduct this study in a larger setting, with a larger sample, and in other departments, thereby potentially increasing/enhancing the generalizability of the findings. The effect of the educational program needs to be evaluated by future researchers in various clinical settings. By implementing effective strategies to improve pain management, serious challenges that are currently affecting pain management can be resolved.

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