

## Research Article

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## Knowledge, Practices and Barriers towards Pediatrics' Pain Management among pediatric nurses in a Private Hospital

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### ABSTRACT

Unrelieved pain among hospitalized children is a worldwide phenomenon for decades as a cause of suffering and decreased quality of life. Understanding of pain has been improved significantly in terms of its physiology and causes, accompanied by advancement in its treatment methods. Nurses play an essential role in children's pain management process, as they provide care to them. Hence, nurses should be knowledgeable, competent, and efficient in pediatric pain assessment and management. The aim of this study was to determine nurse's level in knowledge and attitudes towards pediatric pain management at KPJ Seremban, KPJ Ampang, KPJ Damansara, KPJ Selangor, KPJ Tawakkal and KPJ Kajang in Malaysia.

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### Introduction

Pediatric pain treatment differs significantly from adult pain management in that it calls for more specific understanding about this developmental stage. Pediatric drug administration is also more difficult because pediatric and adult bodies function differently physiologically. These studies focused on the significance of international cooperation in pediatric pain management and the necessity of establishing partnerships to take part in collaborative projects in this area, with the necessity of developing guidelines for pediatric pain management for the nurses in pediatric practice areas. In India, the average correct response rate for pain knowledge was 48.67%, which was unsatisfactory.

In order to assess pain in pediatric patients, nurses must possess the necessary expertise. This may be related to the fact that pediatric patients are less able to tell the nursing staff about their suffering [1]. Additionally, measuring pain in pediatric patients necessitates that nurses have a positive outlook on treating pain in pediatric patients, which vastly enhances the standard of care [2].

There is a significant lack of studies examining nurses' knowledge and attitudes towards managing Paediatric pain at KPJ Seremban, KPJ Ampang, KPJ Damansara, KPJ Selangor, KPJ Tawakkal and KPJ Kajang. Therefore, it is necessary to fill the gap related to nurses' knowledge and attitudes towards Paediatric pain management. In addition, an overwhelming concern of this study is to provide a baseline data that could help in designing interventional programs to improve the nurses' practices related to managing pain among Paediatric patients [3-5].

Children in hospitals frequently feel unbearable pain, so it is essential and crucial for nurses to provide adequate pain treatment. If effective pain treatment is to be attained in pediatric instances,

nurses' knowledge and practices surrounding pain management of children are crucial. Researchers have studied unrelieved pain among hospitalized children for decades as a global phenomenon that contributes to misery and a lower quality of life. The physiology and causes of pain have been much better understood by scientists, and pain treatment techniques have also advanced. However, it is still often observed that children's pain is undertreated, causing needless suffering. In the process of managing children's discomfort, nurses are crucial. The aim of this study was to determine nurse's level in knowledge and attitudes towards pediatric pain management at KPJ Seremban, KPJ Ampang, KPJ Damansara, KPJ Selangor, KPJ Tawakkal and KPJ Kajang in Malaysia.

### Methods

This study used a quantitative, descriptive, cross-sectional design through self-report questionnaire as a data collection method to assess the level of knowledge, pain management practices, and barriers to pain management among nurses KPJ Seremban, KPJ Ampang, KPJ Damansara, KPJ Selangor, KPJ Tawakkal and KPJ Kajang in Malaysia.

The instrument used for this study to obtain data was a self-report questionnaire consists of two parts:

1. Demographic profile sheet; In this sheet, the participants have to write their demographic data such as their age, gender, educational back ground, number of years of experience and they were asked to mention any pain management education attended post-graduation with emphasis of providing the attended pain education length.
2. The Pediatric Nurses' Knowledge and Attitudes Survey Regarding Pain (PNKAS): A self-administered questionnaire with overall of 38-items, 20 questions with true or false answers. 14 questions with multiple choice answers and two case studies followed with two questions for each case. The Pediatric Nurses' Knowledge and Attitudes Survey Regarding

Pain (PNKAS) is a modification from a well validated knowledge and attitude survey regarding pain (KASRP) developed by Ferrell and McCaughey in 1987. KASRP has been used extensively for years; it has been revised over the years to reflect alterations in pain management practice [6-8].

## Results

To find any missing information or input errors, questionnaires and other data entered were carefully reviewed before being prepared for analysis. The statistical program for social sciences (SPSS) version 23 was used to enter the data that had been gathered. The data analysis process involved using descriptive statistics, such as means, frequencies, percentages, standard deviations, and ranges of variables, to describe the features of the participants' responses. The amount of knowledge and attitude toward pediatric pain management and the educational level, number of years of experience, and attendance at pain education of nurses were compared using the ANOVA test [9-12].

The mean age of participants was (M = 30.48, SD = 6.356), age ranged from 22 years to 48 years, 58.7 percent (n = 108) of nurses were below 30 years of age, 28.3 percent (n = 52) were between the ages of 30 and 39 years, 13 percent (n = 24) between the ages of 40 to 49, no nurse was above 50 years old.

**Table 1**

Characteristic	Group	Frequency	%Percentage
Gender	Male	11	6 %
	Female	173	94 %
Age (Years)	20 – 29	108	58.7%
	30 – 39	52	28.3%
	40 – 49	24	13%
	50 +	0	0%
Level of Education	Diploma	15	8.1 %
	Bachelor	160	87 %
	Master	9	4.9 %
Total Work Experience (Years)	<1	20	10.9 %
	1 – 5	68	37 %
	6 – 10	48	26.1 %
	11 – 15	20	10.9 %
	16 – 20	16	8.7 %
	21-25	8	4.3 %
>25	4	2.2 %	
Experience in pediatric area(years)	<1	28	15.2 %
	1 – 5	80	43.5 %
	6 – 10	40	21.7 %
	11 – 15	20	10.9 %
	16 – 20	12	6.5 %
	21-25	4	2.2 %
>25	0	0 %	
pain education	conferences	12	6.5%
	courses	28	15.2%
	no attendance	144	78.3%

Total experience in nursing ranged from 5 months to 26 years, the mean number of years of experience was (M = 7.50, SD = 6.635), 20 nurses (10.9%) had less than one year of experience, about one third (37%, n = 68) of the participants had from 1 to 5 years of nursing experience, almost quarter of nurses 26.1 percent (n = 48) had from 6 to 10 years of experience, the lowest proportion was for nurses with more than 25 years of experience with 2.2 percent (n=4). Experience in pediatric area ranged from 5 months to 23 years (M = 5.53, SD = 5.21), more than half of nurses (n = 108, 58.7 %) had no more than 5 years of experience in pediatric units. In terms of the highest educational level attained by participants, the majority of nurses—87 percent, or 160 participants—had bachelor's degrees. Following closely behind were certificate holders—8.1 percent, or 15 participants—and master's degree holders—4.9 percent, or 9 participants.

When asked if they had attended conferences or courses or any other types of continuing education related to pain management, the majority of nurses, or 78.3 percent (n = 144), stated that they had not. However, 6.5 percent (n = 12) of nurses said they had attended conferences, and 15.2 percent (n = 28) had attended courses.

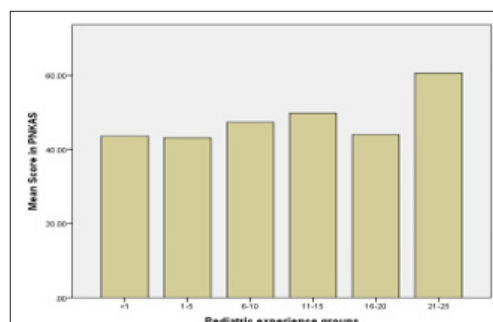
The PNKAS questionnaire was created to measure pediatric nurses' knowledge and attitudes regarding pharmacology, tolerance, and addiction as well as pain assessment and treatment principles. PNKAS's knowledge and attitude toward pediatric pain treatment survey yielded a mean score of 45.3 percent, a median of 45 percent, and a standard deviation of 9.52. The range of results was 22.5 to 67.5 percent. The majority of participants, or 32.6 percent (n = 60), received scores between 50 and 59 percent. 80 percent of respondents found the survey to be satisfactory. Tables 2 and 3 show the ten questions with the highest and lowest percentage of accurate answers, respectively [13].

**Table 2: Ten Questions with the Highest Correct Answers**

Ranking	PNKAS Question number	Frequency	Percentage
1	Q 22 After the initial recommended dose of opioid analgesic, subsequent doses should be adjusted in accordance with the individual patient's response.	168	91.3 %
2	Q 5 Comparable stimuli in different people produce the same intensity of pain	155	84.2 %
3	Q 32 The most likely explanation for why a child/ adolescent with pain would request increased doses of pain medication is	148	80.4 %
4	Q 8 Children who will require repeated painful procedures (i.e. daily wound care or blood draws), should receive maximum treatment for the pain and anxiety of the first procedure to minimize the development of anticipatory anxiety before subsequent procedures.	143	77.7 %
5	Q 17. Young infants, less than 6 months of age, cannot tolerate opioids for pain relief.	132	71.7 %
6	Q 26. The recommended route of administration of opioid analgesics to children with brief, severe pain of sudden onset, e.g. trauma or postoperative pain, is	124	67.39%
7	Q 29 Analgesics for postoperative pain should initially be given	119	64.67%
8	Q 2 Because of an underdeveloped neurological system, children under 2 years of age have decreased pain sensitivity and limited memory of painful experiences.	107	58.15%
9	Q 27 Which of the following analgesic medications is considered the drug of choice for the treatment of prolonged moderate to severe pain for children?	105	57.06%
10	Q 15 Adolescents with a history of substance abuse should not be given opioids for pain because they are at high risk for repeated addiction.	104	56.52%

**Table 3: Ten Questions with the Lowest Correct Answers**

Ranking	PNKAS question Number	frequency	Percentage
1	Q 35 What do you think is the percentage of patients who over report the amount of pain they have?	11	5.9 %
2	Q 37 b. Case study: He has identified 2 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1-3 mg q1h PRN pain relief." Check the action you will take at this time	19	10.3%
3	Q 1. Observable changes in vital signs must be relied upon to verify a child's/ adolescent's statement that he has severe pain.	23	12.5%
4	Q 7. Non-drug interventions (e.g. heat, music, imagery, etc.) are very effective for mild, moderate pain control but are not helpful for more severe pain.	31	16.8%
5	Q 25 .The recommended route of administration of opioid analgesics to children with background (continuous, persistent) pain is	35	19.0%
6	Q 38 b. Case study: He has identified 2 as an acceptable level of pain relief. His physician's order for analgesia is "morphine IV 1-3 mg q1h PRN pain relief." Check the action you will take at this time:	47	25.54 %
7	Q 36 Using this definition, how likely is it that opioid addiction will occur as a result if treating pain with opioid analgesics?	47	25.54%
8	Q 4 Infants/ children/ adolescents may sleep in spite of severe pain.	48	26.08%
9	Q 30 A child with background (continuous, persistent) pain has been receiving daily opioid analgesics for 2 months. The doses increased during this time period. Yesterday the child was receiving morphine 20 mg/hour intravenously. Today he has been receiving 25 mg/hour intravenously for 3 hours. The likelihood of the child developing clinically significant respiratory depression is	59	32.06%
10	Q 12 The usual duration of analgesia of Morphine IV is 4-5 hours.	67	36.41%



**Figure 1: Correct Answers Percentage for the Different Pediatric Experience Ranges**

The results of this study indicated that nurses who attended conferences received the highest mean ratings in terms of engagement in education related to pain treatment (M=55.41), followed by nurses who acknowledged attending courses (M=49.73). The lowest mean scores (M = 43.54) were obtained by nurses who had never attended any kind of pain education. The p-value was .001, which was significant and showed that pain education had a significant impact on scores. The mean score for nurses who did not participate in any type of pain education was considerably lower than the mean score for nurses who attended conferences (P value .001) or courses (p value = .005), with no significant difference between the mean scores for nurses who participated in both types of education (courses and conferences). This outcome.

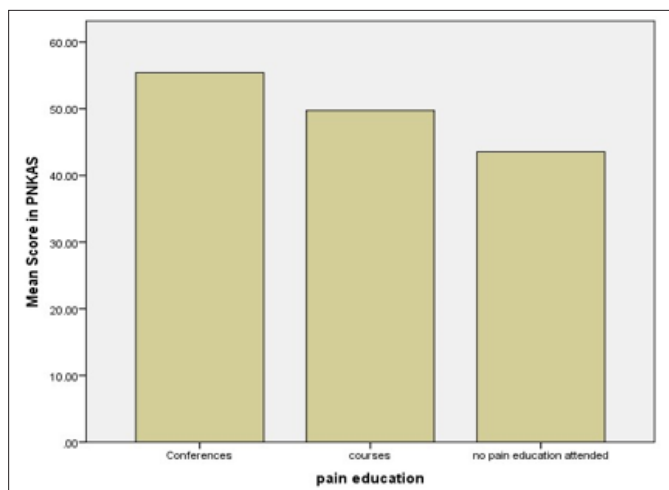


Figure 2: Correct Answers Percentages for the Different Pain Education Categories

### Discussion

Given that the satisfactory threshold is 80 percent and the mean accurate score for the PNKAS was 45.3 percent, it was observed that nurses' capacity to manage patients who are in pain will be severely hampered if their score falls below this mark. Eighty-five percent of the scores (80.5%) ranged from 30 to 59 percent. Individually, none of the participants were able to attain the required level of 80 percent; the best score was 71.1 percent, indicating that none of the participants had the required level of survey knowledge. The total PNKAS score of the current study is in line with findings from comparable studies published in other nations, although pediatric nurses' knowledge and attitudes toward pain are remarkably lacking.

The least correctly answered question in this survey was related to what nurses believe is the percentage of patients who over report the amount of their pain, only 11 nurses (5.9 percent) of the participants answered this question correctly, a similar study done in Mexico declared a low level of correct answers to this question but compared to the result of the current study, Mexican nurses scored much better response to this question with 54 percent of participants answered correctly. For around 64 percent of nurses participated in this study, fear of addiction was not a major factor that leads to hesitation in giving opioids to children, even if there is a history of substance abuse, which is a correct perception, and this percentage of correct answers to this question reflects that fear of addiction by children is not that prevalent among pediatric nurses in Jordan. Furthermore, 80 percent of nurses explained correctly that a request of opioids dose increment is due to increased pain

not due to addiction, these finding contradicts with results from other similar studies which announced that fear of addiction is one of the most common factors that leads to hesitation for giving opioids to patients specially if there is a history of addiction [10, 11]. Some questions related to knowledge concerning opioids administration for infants was noticeably answered correctly, 91.3 percent of nurses knew that after the initial recommended dose of opioids, the subsequent dose should be adjusted according to the individual patient's response, they know that our body reacts differently to opioids, and accordingly some people may need more or less subsequent dose. This finding opposes with result from a study done in India where deciding the subsequent dose of opioids and infants ability to sleep despite severe pain were from the highest questions wrongfully answered [11, 14, 15].

### Conclusion

The result of this survey revealed low level of nurses' knowledge and attitude towards Pediatrics' pain management in KPJ Seremban, KPJ Ampang, KPJ Damansara, KPJ Selangor, KPJ Tawakkal and KPJ Kajang in Malaysia and indicates the need for improvement in education and training related to pain management. Nurses have an important task of enhancing their knowledge and performance in pain management through the involvement in more pain management education forms such as lectures and conferences or practice self-study through utilizing printed or web based resources, this could make a big difference in the Pediatrics' patient pain experience by providing pain management that is appropriate, updated and accurate. Nursing managements in hospitals as well may benefit from the results of this study to plan for more comprehensive, constant and updated in-hospitals pain education programs for nurses and other health care providers as well, to improve their knowledge and attitude towards pain management. Forming a pain management team that use updated international pain management protocols for pain assessment and management should be in consideration as it provides an extremely useful reference for nurses.

The study's goal was to add to the body of knowledge that decision-makers, academic institutions, and clinical professionals in hospitals rely on to improve nursing practice in the area of pain management. The results will serve as a useful reference for researchers interested in pediatric pain management in particular and pain management in general. Future studies may need to concentrate on strategies for improving the nurses' reported present low level of pain management performance in another private hospital in Malaysia in order to reach the global standards for pain management.

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