

The effect of pain management training in workshop on the knowledge, attitude and self-efficacy of pediatric nurses

Soroor Parvizy¹, Sakineh Tarvirdinasab², Rasool Raznahan^{3,4}, Mahboobeh Aliakbari¹

¹Department of Pediatric Nursing, Faculty of Nursing and Midwifery, Center for Educational Research in Medical Sciences, Iran University of Medical Sciences, ²Department of Community Health Nursing, School of Nursing and Midwifery, Iran University of Medical Sciences, ³Department of Nursing, School of Nursing and Midwifery, Torbat Heydariyeh University of Medical Sciences, ⁴Health Sciences Research Center, Torbat Heydariyeh University of Medical Sciences, Torbat Heydariyeh, Iran

ABSTRACT

Background and Aims: Pain is the fifth vital sign, and pediatric nurses play a key role in the process of pediatric pain management. The present study aimed to determine the effect of pain management training on the knowledge, attitude and self-efficacy of pediatric nurses. **Methods:** This is a quasi-experimental study including two groups of test and control. The experimental group received a workshop method with a content including (ethical aspect, physiology, assessment tools, and pharmaceutical and non-pharmacological pain management) and was not given in the control group. The PNKAS self-efficacy questionnaires were completed by the participants before and one month after the beginning of the study. The data were analyzed using descriptive statistics and independent T-test, Fisher exact, and Chi-square tests using SPSS version 20 software. **Results:** The mean pre-test scores of knowledge and attitude in the control and experimental groups were 50.79-47.14, and after one month were 47.46-53.09, respectively, showed that training was significantly effective in the knowledge and attitude of the experimental group (P value = 0.01). The mean pre-test score of self-efficacy in the control and experimental groups was (17.01-18.06), and one month later was 20.36-21.03 respectively. Although the self-efficacy score increased in both groups, training significantly increased the self-efficacy of pediatric nurses in the experimental group (P value < 0.001). **Conclusion:** Pain management training is required due to the poor knowledge of pediatric nurses and the importance of pain management in improving the quality of nursing care and the satisfaction of patients with the In addition, feeling high self-efficacy without sufficient knowledge of pain management can disrupt pediatric pain management.

Keywords: Pain management, pediatric nurses, self-efficacy

Introduction

Although pain management approach is largely determined by the pediatrician, the nursing personnel also play an important role.^[1] In most hospitals, nurse is the first person of the care team accompanying the patient from the admission time. In addition, many painful procedures are usually performed by a nurse.^[2] Healthcare has been developed significantly in the

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Address for correspondence: Dr. Mahboobeh Aliakbari, Department of Pediatric Nursing, Faculty of Nursing and Midwifery, Center for Educational Research in Medical Sciences, Iran University of Medical Sciences, Tehran, Iran. E-mail: mb.aliakbari@gmail.com

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clinical instructions of pain management over the past 20 years. The World Health Organization (WHO), the American Pain Board and the American Academy of Pediatrics emphasize that nurses do not use the current guidelines and standards of for pediatric pain management.^[3] and pain management in pediatric is still under the ideal level.^[4] More than half of the children experience acute and chronic pain with moderate to severe severity during the hospital admission.^[3] raising the child pain relief as a highly necessary issue in public health public health issue that should be reviewed globally.^[5] Although the pediatric pain management measures are highly important in pediatric nursing care,^[6] poor knowledge and attitudes about pain management are common among nurses and about 50-76% of pediatric nurses face the lack of sufficient knowledge in pain assessment and management of.^[7] According to the International Association for the Study of Pain (IASP) and the WHO, pain relief is a human right.^[11] Therefore, it is imperative that nurses and other providers get through training for pain assessment and management and also recognize pain management as patient rights.^[4] The insufficient knowledge of nurses about pediatric pain management is a worrying issue in the world.^[8] Nurses are a large group of healthcare providers spending the most of their time with children in the hospital.^[11] In developed and developing countries, many attempts have been made to provide the children with best standards of pain management.^[9] Although the level of knowledge and attitude in developing countries is greater than in developing countries, considering the progress of pain management guidelines is not satisfactory.^[10-12] The recommended solutions to overcome such problems include the familiar nurses with pain assessment and management during undergraduate studies.^[13] Therefore, nursing educators should identify the educational facilitators and barriers to pain management to understand the strengths and weaknesses in the knowledge and attitudes of nursing students and their related factors. Such information is necessary for the clinical training of nursing students and nurses.^[14] For this reason, the present study was designed to evaluate the effect of pain management training on the knowledge, attitude and the self-efficacy of pediatric nurses.

Methods

Design and sample

The nurses working in infants, children, and all departments of the children's ward of Tehran hospitals entering the study were included in this study. This study had two groups of case and control. Sampling in the experimental group was conducted by enrolling on the site of continuous medical education and in the control group was conducted with the referral of the researcher to hospitals (Valiasr, Naft, and Bahrami). Three workshops were held. Participants attended this study after giving a written consent.

Setting

The training workshop was held at three sites of the Faculty of Nursing and Midwifery of Iran, Ali Asghar Children's Hospital,

and Milad Hospital. Control group sampling was conducted in the hospitals of Valiasr, Naft, and Bahrami.

Procedure

This study was of semi-experimental type. After explaining the research objectives by the researcher, an envelope containing a questionnaire was distributed among the participants who responded voluntarily within twenty minutes. In the experimental group before the training, the pre-test was collected by the researcher. The posttest was provided to the participants via Email one month after the intervention and the data were collected. Participants completed the pre-test questionnaire by referring to hospitals (Valiasr, Naft, and Bahrami) and one month later, they completed the post-test by e-mail. The pain management training program was conducted by two nurses having a doctorate degree in pediatric, a pediatrician, and a pain specialist in workshop method. The content of the training program included ethical aspects, pain physiology, evaluation tools and pharmacological and non-pharmacological methods for pain management approved by the Ministry of Health and Medical Education of Iran. Four hours of training were provided as lecture, group discussion, case study, question and answer, and teamwork. The training program was similar in all three workshops.

Ethical considerations

This study was approved by the Ethics Committee of Iran University of Medical Sciences (IR.IUMS.REC.1395.9311687007).

Instruments

In this study, a questionnaire with three parts and 46 questions was used to measure knowledge, attitude and self-efficacy of pediatric nurses. Content validity was performed by 10 faculty members of Faculty of Nursing and Midwifery of Iran University of Medical Sciences. The first part examined the demographic information, the second part included knowledge and attitude, and the third part included the self-efficacy of pediatric nurses.

The first part: Demographic information included 7 questions in terms of age, sex, level of education (associate, bachelor, master, doctoral), nursing experience, nursing experience in the pediatric ward, previous education in pediatric pain management as well as the use of computers and the internet.

The second part: Knowledge and attitude of nurses in pain management using the PNKAS questionnaire. PNKAS is the modified questionnaire of NKAS by Ferrell and McCaffery's (1997) about the study of knowledge and attitude of nurses about pain which was revised in 2000 by Dr. Rene Manworren to evaluate pediatric nurses. Five experts in pain management evaluated its content validity. The test reliability with test-retest test was $r = 0.67$. Cronbach's alpha for 247 pediatric nurses (0.72) and the response of 88 members of a pediatric nursing organization was 0.77.^[15] In the present study, after obtaining permission from Dr. Rene Manworre The PNKAS

questionnaire was translated by two experts in Persian and then retranslated by two experts in English. Then, the translated versions were reviewed by Dr. Rene Manworren. According to him, four questions were deleted and the answers to three questions were changed. Since the pediatric pain assessment tools were taught in the curriculum and the questionnaire was not supported by the questionnaire, four questions were added. Thus, the Persian version of PNKAS was used with 42 questions including 23 true/false questions, 15 multiple-choice and 2 two-part scenarios with Kuder-Richardson coefficient reliability of 0.82 were used from 60 pediatric nurses' responses in this study. The PNKAS questionnaire was translated into several languages before this study.

The third part: Nurses' self-efficacy in pain management was evaluated using a questionnaire made in 2006 by Chang *et al.* with six questions of five-point Likert. Cronbach's alpha test was 0.88 and post-test was 0.91, and its validity was assessed by three pediatric nurses.^[16] By obtaining a permission from Dr. Li-Chi Chiang, the questionnaire was translated by two experts in Persian and then by two experts in English. The certified version was then translated by Dr. Li-Chi Chiang. The questionnaire with 6 questions of five-point Likert with a Cronbach alpha coefficient (0/86) was used from the responses of 60 pediatric nurses.

Data analysis

Descriptive statistics were used to determine the frequency distribution table and to calculate the measures of central tendency (mean, standard deviation) and demographic data. In order to examine the difference in knowledge, attitude and self-efficacy before and after training in each group, *t*-test and ANOVA were used for both groups. Scheffe test was used for the difference between the two groups before and after training. Pearson correlation coefficient was used for the relationship between knowledge, attitude, and self-efficacy scores with quantitative demographic variables. All data analysis was performed using SPSS version 20 with a significant level of less than 0.05.

Results

Demographic characteristics of study samples

A total of 60 eligible nurses participated in this study. The data were collected from May to September 2011. The mean age of 30 nurses in the experimental and control group was 38.23 -32.03, respectively. All nurses in two groups were female. The education level of nurses except 7 ones in the control group was bachelor. The mean work experience in nursing was in the experimental and control group was (13.05-07.53) and the mean work experience in the pediatric ward in the experimental and control groups was (9.74-4.43), respectively. The demographic characteristics of the two groups were analyzed by Fisher's exact test of analysis of variance. The experimental and control group was not homogeneous in

terms of age, nursing experience and nursing experience in the experimental and control group was not homogeneous in terms of age, nursing experience and nursing experience in the pediatric ward. In order to control their effect on the effect of educational intervention, Pearson correlation test was used. There was no significant statistical relationship between them and did not affect the intervention. Therefore, they were not considered as intervention.

Nurses' Knowledge and Attitudes Children's Pain Management

42 questions of the questionnaire assessed the nurses' knowledge and attitude about pediatric pain. The mean pre-test scores in the experimental and control groups was (47.14 -50.79) and one month later, the mean post-test score was in the control and experimental groups was (53.09 -47.46), respectively. Since the two groups were not homogeneous in terms of mean score before intervention, the numerical index of knowledge and attitude scores before and after the study was evaluated by Scheffe test. The difference between the mean scores of the experimental and control groups was (9.28) and ($P = 0.004$), indicating that the training method was effective in increasing the knowledge and attitude of the nurses.

Self-efficacy

The mean pre-test scores of self-efficacy before and after intervention were in the experimental and control groups was (18.06-17.1) and one month later, the pre-test score in the experimental and control groups was (21.3 -20.36), respectively. According to the Scheffe test, there was no significant difference between the mean of self-efficacy in both groups before and after the intervention ($P < 0.99$) indicating no effect of training on self-efficacy.

Discussion

Nurses are part of the treatment team who are constantly next to the patient and play role as the first decision maker to manage pain in patients. Therefore, they require adequate knowledge, appropriate attitude and high self-efficacy in relation to pediatric pain management. Therefore, the researcher conducted this research for examining the effect of pain management training on the method of the workshop to improve the quality of pain management training and improving the quality of pain management in patients.

Not satisfactory knowledge scores of nurses' attitudes toward pediatric pain management were the worrisome results of this study being not significantly different from the results of Rahimi and Kheshti's study in Iran. In the study of Rahimi *et al.*, 4.8% of nursing students answered at least 50% of the questions correctly.^[17] In the study of Kheshti *et al.*, the mean correct answers were 36.1%.^[18] Iranian nurses seem to have inadequate knowledge of pain management in comparison to international

standards. Other researchers in Mongolia, India, Egypt, Turkey, Jordan, and North Carolina reported the results similar to the findings of the present study emphasizing inadequate knowledge and inappropriate nurses' attitudes in pain management.^[1,3,8,13,19-23]

In the present study, the most wrong answers were related to the management of pain medication. The results of previous studies agreed with the results of the present study that nurses generally have poor pharmacological knowledge.^[1,3,13,19,21,24,25] Although nurses depend on the prescription of doctors, they should have the ability to collaborate on pain medication management with other members of the healthcare team.

Most nurses use personal judgment in assessing the children feeling pain and are interested in behavioral symptoms of. According to two questionnaires, two patients expressed their pain on a scale, but one patient was in a state of calmness and another one was crying. The nurses gave the calm patient a lower score and prescribed less pain killer. Although pain recognition is important for effective pain management, self-reporting of the person experiencing pain is the best tool for pain assessment.^[9,13,21] From this finding, it can be concluded that nurses are influenced by the behavior of patients while the most reliable person in pain judgment is the patient himself and this finding is consistent with the results of the following studies,^[3,12] which may endanger the strategy of pain management, and reduce the quality of nursing care.

81% of nurses in this study believed that patients exaggerated their pain and incorrect judgment of nurses indicated their negative attitude towards pediatric pain, which many nurses in studies^[22,26,27] had similar attitudes to this study.

In the present study, after four hours of training in the workshop method, the mean score of knowledge and attitude was increased from 14.47 to 53.09. In the study of Hatch *et al.* and the study of Chang *et al.*, after four hours of pain management training by (lecture, group discussion), the knowledge and attitude scores increased from 13.1 to 16.7 and from 55 to 74 respectively. In the study of Lansfrad *et al.* after training for two and a half hours of lecture, it increased from 36.38 to 47.81, as well as in the study of Dongra *et al.* by workshop method, it increased from 15.69 to 19.4. The results of this study and above studies indicated the effectiveness of training, but the score of knowledge and attitude was lower than the ideal level. Therefore, in educational programs should be emphasized and the principles of drug management should be used to improve nurses in pediatric pain management.

Self-efficacy plays an important role in changing person's behavior.^[28] The high belief in self-efficacy leads to attempts to change. Thus, self-efficacy improvement is very important in the process of changing behavior.^[29] In the present study, self-efficacy increased in the control group after one month. Increasing self-efficacy without increasing knowledge may be worrisome. In the study of Chang *et al.*, self-efficacy was higher than the mean score of knowledge and attitude. These results

indicated that most nurses believe that they can manage pain, although they have limited information in this regard and this may impede the improvement of the knowledge of the treatment staff in regard to pain management.^[16] In this study, the relationship between demographic characteristics of nurses (age, level of education, work experience in nursing and work experience in pediatric nursing) was not correlated with the results of previous studies.^[3,19,21]

Conclusion

The results of this study showed that nurses have poor knowledge, attitude, and self-efficacy in relation to pain management which should be changed or reviewed in education. It is suggested that pain management training should be included in the curriculum of nursing students and in-service training. Nursing education should not only focus on the theory of knowledge, but also the training of clinical skills and use of educational methods which are aimed at improving knowledge. However, the results showed that the training of workshop was effective. It is recommended that healthcare professionals and legislators should use this method to improve the quality of pain management.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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