Original Article

Effectiveness of an Educational Program on Nurses' Knowledge, Attitude, and Practices toward Pain Management in Cancer Patients in Erbil City

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Abstract

Background and Objectives: Cancer pain is one of the main symptoms of cancer that seek the patients to hospitals for management of pain. study was aimed to to assess the effectiveness of an educational program on nurses' knowledge, attitude, and practices regarding pain management for patients with cancer admitted to Nanakaly hospital in Erbil city.

Methods: Quasi-experimental study was conducted at the Nanakaly and Rizgary teaching hospitals in Erbil city, Kurdistan region / Iraq. Nurses from both hospitals were selected as control and intervention group respectively. Nurses were assessed via the socio-demographic characteristics questionnaire, knowledge and attitude survey regarding pain, and practices' observational checklist.

Result: A total of 64 nurses (32 from control group and 32 from intervention group) were participated. Nurses' knowledge and attitude towards cancer pain management was improved after implementation of education program, but nurses' practice was not improved

Conclusion: nurses had incompetent practice regarding cancer pain management. Nurses had more knowledge and attitude regarding pain management than those who did not attend the program. Attempt should more focus on nurses' practice towards cancer pain management.

Keywords: Nurse, Knowledge, Attitude, Practice, Pain Management, Cancer.

Introduction

Cancer is one of the main factors for mortality and morbidity all over the world. It is called approximately ten million people dead in 2020 (1). Cancer has been defined as a cell of the human body grows abnormally without control. It is a chronic disease and characterized by uncontrolled and distributed of abnormal and unregulated cell growth (2). The international Agency for research on Cancer estimated that in 2018 reported that higher than 2500 diagnosed as a new cancer and nearly 14000 cases were death in Iraq (3). Another study was reported that 73 cases per 100,000 populations has suffered from cancer in 2013 in Erbil city, and this number increased to 174 cases per 100,000 populations in 2019.

In Duhok city of Kurdistan region, Iraq, the number of cancer patients were 486 cases (36 per 100,000 populations) in 2013, while in 2019 the total number of cancer cases was 1365 (85 cases per 100,000 populations) (4).

Several studies reported that pain is one of the worst symptoms in cancer disease that drive patients to hospital (5,6). Pain has been defined as "unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage (7).

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Cancer pain is one of the chief international health issues among cancer patients, it also remains without treatment in many patients (8). The causes of cancer pain may be cancer disease, spread of tumor from original site to another organs (metastases), damaging of nerves, and treatments of cancer such chemotherapy and radiotherapy (9). Research survey was done in Lebanon that 400 cancer cases which, participated reported that higher than 37% of cases, argued that has cancer pain, management of cancer pain inadequately to be around 46% in all cancer cases (10). Nevertheless, another study was conducted in the USA showed that several cancer cases had an experienced regarding controlling cancer pain, large amount of opioid analgesics had prescribed increasingly for management of cancer pain (11).

Study was reported that nurses had poor knowledge and negative attitudes regarding cancer pain management in developing countries and all over the world (12). Another study regarding nurses' knowledge and attitudes towards cancer pain management illustrated insufficient knowledge level and poor attitudes. Obviously showed inadequate knowledge regarding physiology of pain, pharmacology of analgesic medications, and risks of opioid medications, as well as nurses had negative attitude about cancer pain assessment and opioid such as "inaccurate beliefs about tolerance and addiction (13). Educational program is one of the main process that improves health care workers' (specially nurses) knowledge, attitude and practice towards cancer pain management. It is the method to relieve and eliminate the barriers to cancer pain management. The main objectives of educational program and intervention was to provide information to nurses and enhancing their knowledge and practices, moreover nurses are to be more active cancer pain manager in giving the best care to their cancer patients (14). There were no any other studies have been conducted in Erbil, Kurdistan region's cancer hospitals/ Iraq. Therefore, this study was aimed to to assess the effectiveness of an educational program on nurses' knowledge, attitude, and practices regarding pain management for patients with cancer admitted to Nanakaly hospital in Erbil city.

Subjects and methods

Control and interventional groups of nurses were recruited as a quasi-experimental study design from the Nanakaly Teaching Hospital and chemotherapy department in Rzgari Teaching Hospital in Erbil city, Kurdistan region/ Iraq. A non-probability (purposive) sample of all nurses who were available in hospitals during the period of data collection were included. Inclusion criteria, included, nurses who provide care for cancer patients in the Nanakaly and Rzgari Teaching Hospitals, both genders (male and female). After an interviewing with 84 nurses (totally 9 nurses excluded because 7 nurses refused to participate for variety reasons, one nurse in intervention group was retired, and one nurse in control group refused). The remaining 64 nurses were recruited. Participants were randomly assigned to both groups (control and intervention groups) using a numbered list of nurse's name that were taken from the head nurse and randomly gave number to the nurses' name (the odd number recruited into the control group and the even number recruited into the intervention group) with proper matching the two groups in sex, academic qualification, years of experience. Interview was performed for 32 nurses in intervention group and 32 nurses in control group.

Self-administered questionnaires were used to collect data and It included three parts: Part one: Socio-demographic characteristics of nurses which included: age, gender, level of education, years of experience, place of work, and participated in training courses regarding pain management in the Nanakaly and Rzgari Teaching Hospitals. Part two: pre / post-test nurses' knowledge and attitude assessment questionnaire form: This instrument was adopted from "Nurses' Knowledge and Attitudes Survey regarding Pain (NKASRP)". This tool was applied to assess nurses' knowledge and attitude regarding cancer pain management before and after implementation of cancer pain educational program. This tool consists of 34 questions that covered aspects of pain assessment, patient variables, pharmacologic and non-pharmacologic interventions. Three types of questions were used, it includes 21 true/false questions and 13 multiple-choice questions. The nurses' knowledge and attitudes survey regarding pain content were based on the American Pain Society (15), the World Health Organization, and the Agency for Health Care Policy and Research pain management guidelines (Ferrell and McCaffery) (16). This tool was applied after some modifications. The total scores of nurses' knowledge are 29 grades, gave one for correct responses for questions and zero for incorrect answers. Total score of nurses' attitude are 9 grades, gave one for correct responses for questions and zero for incorrect answers.

Part three: Pre and post observational checklist was developed by researchers based on literatures of pain management. It was used before and after implementation of educational program regarding cancer pain management to evaluate the effectiveness of an educational program on nurses' practice. It includes 21 questions, which is about pharmacological and non-pharmacological pain management. The total score of observational checklist was 21 degrees; each item in checklist achieved was scored one and zero for the step that not achieved.

Regarding The validity of the tools, the questionnaire was reviewed by panel of experts from different health specialty (adult nursing, oncologist medicine). Pilot of the study, consistency of questionnaires was done by using Mann-Whitney (U- value test). Test-Retest was done by 11 nurses who were not part of the samples. The time interval between the test and the retest was two weeks. The pilot study was carried out before collecting the data among 11 nurses to test

all tools for clarity, objectivity, relevance, feasibility and the applicability of the tools. Data included in pilot study were excluded from the current study. The initial approval was obtained from the Ethics Committee of the College of Nursing, Hawler Medical University. Oral consent was also obtained from each nurse who agreed, during the initial interview the purpose of the study was explained.

The pre-test was conducted before starting the education program, post-test was done three months after educational program. Same questionnaires to assess knowledge, attitude, and practices were done for post- test. The nurse was selected to participate in the education program according to inclusion criteria. The educational training program and pamphlet was translated to the Kurdish language to be more interesting and understandable. All nurses who participated in educational program obtained a copy of booklet that contained all the educational program. The program was implemented 5 times in 5 subgroups of nurses, two educational sessions were implemented for each group to cover all information regarding pain management in cancer patient in the Nanakaly and Rzgari Teaching Hospitals. Each session has covered the following topics: Session one: definition of pain, types of pain, different types of tools for assessment of pain. Session two: pharmacological and non-pharmacological management of cancer pain and practice regarding pain management.

The data were collected and analyzed through using Statistical Package for Social Science (SPSS/version 20). For compare Pre-test and Post-test scores was used paired 't' test values to determine the significance of the difference between mean score of pre-test and post-test subjects, mean and standard deviation scores knowledge, attitude, and practice scores. P-value at 0.05 was used to determine level of significance. P-value ≤.05 considered statistically significant. P-value ≤.001 considered highly statistically significant.

Results

Table 1 showed that the number of participants (nurses) 32 nurses per each of the control and intervention groups. Participants were categorized into three age groups where the group of 21-33 years scored highest percentages among other groups of participants (50%) in intervention group, while the group of 34-46 years scored the highest percentage among other groups of participants (40.6%) in control group. Gender distribution was 68.8% male in control group and 50% in male and female in intervention group. Qualification of participants was 84% in control group and 71.9% in intervention group. The highest percentages of participants (84.4%) worked in the Nanakaly hospital in control and intervention groups. Most of nurses had >10 years of experience in oncology department in the Nanakaly and Rizgary teaching hospitals were 50% in control group while 1-5 were 43.8% in intervention group. The majority of participants were formal employment 71.9% and 78.1% in control and intervention group respectively. The highest percentage of participants had not attended any previous training on pain management for cancer patients (56.3%), however, in intervention group was opposed, were 56.3% nurses were participated in training courses previously. There was no significance difference between sociodemographic characteristics in control and intervention group (P=>0.05), except year of experience of nurses in the Nanakaly and Rzgari teaching hospitals.

Table 2 there was a very highly significant difference result was observed regarding overall nurses' knowledge about cancer pain management in pre and post-tests after three months in intervention group.

Table 3 reveals that there was a very high significant difference regarding overall nurse's knowledge about cancer pain management in control and intervention in post-test.

Table 4 shows that overall nurses' knowledge level regarding pain management in cancer patients in pre and post-test, where as fair knowledge level were observed about pain management in pre and post-test in control group (87.5 and 90.6%) respectively. However, in intervention group, the overall nurses' pain management knowledge was fair (81.3%) in pretest and good level at post-test (65.5%). Table 5 there is a very high significant difference regarding overall nurses' attitude about cancer pain management in pre and post-tests after three months in intervention group. Table 6 represent that there is a very high significant difference regarding overall nurse's attitude about cancer pain management in control and intervention in post-test.

Table 7 shows that overall nurses' attitude regarding pain management in cancer patients in pre and post-test, where negative attitude was observed about pain management in pre and post-test in control group (71.9% and 78.1%) respectively. However, in intervention group, the overall nurses' attitude about pain management was negative (75%) in pretest and positive attitude at post-test (62.5%). Table 8 there is a very high significant difference regarding overall nurses' practice about cancer pain management in pre and post-tests after three months in intervention group. Table 9 represent that there is a very high significant difference regarding overall nurses' practice about cancer pain management in control and intervention in post-test. Table 10 shows that overall nurses' practice regarding pain management in cancer patients in pre and post-test, where fair level of pain management practice was observed about pain management in control group and study group in both pre and post-test (96.9%, 90.6%, 93.8%, 87.5%) respectively.

Table 1. Sociodemographic characteristics of nurses

Sociodemographic Characteristic of nurses		**Group**				**P-value t-test**
		Pre T Control		**Pre T Intervention**		
		F.	**%**	**F.**	**%**	
Age Group (Years)	21-33	11	34.4	16	50	**0.349 NS**
	34-46	13	40.6	9	28.1	
	47-59	8	25	7	21.9	

Gender	Male	22	68.8	16	50	**0.131 NS**
	Female	10	31.3	16	50	
Qualification	Diploma	27	84.4	23	71.9	**0.179 NS**
	Bachelor	5	15.6	8	25	
	Master	0	0	1	3.1	
Name of hospitals	Nanakaly hospital	27	84.4	27	84.4	**0.998 NS**
	Rzgari Teaching Hospital	5	15.6	5	15.6	
Year of experience	1-5	8	25	14	43.8	**0.039 S**
	6-10	8	25	10	31.3	
	> 10	16	50	8	25	
Type of employment	Formal	23	71.9	25	78.1	**0.571 NS**
	Contract	9	28.1	7	21.9	
Training course about pain management	Yes	14	43.8	18	56.3	**0.325 NS**
	No	18	56.3	14	43.8	

Table 2. Overall nurses' knowledge mean score in pre and post-test in intervention group

Overall Knowledge nurses' knowledge regarding cancer pain management	**Intervention Group**		**P-Value of Paired t-test**
	Pre-test	**Post-test**	
	M ± SD	**M ± SD**	
Overall Knowledge	9.78 ± 2.69	17.00 ± 2.59	**< 0.001 VHS**

Table 3. Overall knowledge mean score in control and intervention group

Overall Knowledge of nurse's regarding cancer pain management	**Group**		**P-Value of Independent t-test**
	Control	**Intervention**	
	M ± SD	**M ± SD**	
Overall Knowledge	10.90 ± 2.87	17.00 ± 2.59	**< 0.001 VHS**

Table 4. Overall Nurses' knowledge regarding pain management for cancer patients in pre and posttest in control and intervention groups

Overall Knowledge of nurses regarding cancer pain management	**Group**							
	Pre T Control		**Post T Control**		**Pre T Intervention**		**Post T Intervention**	
	F.	**%**	**F.**	**%**	**F.**	**%**	**F.**	**%**
Poor	4	12.5	2	6.3	6	18.8	0	0
Fair	28	87.5	29	90.6	26	81.3	11	34.4
Good	0	0	1	3.1	0	0	21	65.6

Table 5. Overall attitude mean score in pre and posttest in intervention group

Overall nurses' Attitude regarding cancer pain management	**Intervention Group**		**P-Value of Paired t-test**
	Pre-test	**Post-test**	
	M ± SD	**M ± SD**	
Overall Attitude	3.34 ± 1.51	4.93 ± 1.62	**< 0.001 VHS**

Table 6. Overall attitude mean score in control and intervention group

Overall nurses' Attitude regarding cancer pain management	**Group**		**P-Value of Independent t-test**
	Control	**Intervention**	
	M ± SD	**M ± SD**	
Overall Attitude	3.25 ± 1.58	4.93 ± 1.62	**< 0.001 VHS**

Table 7. Overall nurse's attitude regarding pain management for cancer patients in pre and posttest control and intervention groups

Overall nurses' Attitude regarding cancer pain management	**Group**							
	Pre T Control		**Post T Control**		**Pre T Intervention**		**Post T Intervention**	
	F.	**%**	**F.**	**%**	**F.**	**%**	**F.**	**%**
Negative	23	71.9	25	78.1	24	75	12	37.5
Positive	9	28.1	7	21.9	8	25	20	62.5

Table 8. Overall nurses' practice mean score in intervention group

Overall nurses' practice regarding cancer pain management	**Intervention Group**		**P-Value of Paired t-test**
	Pre-test	**Post-test**	
	M ± SD	**M ± SD**	
Overall Practice	8.96 ± 2.22	11.50 ± 1.43	**< 0.001 VHS**

Table 9. Overall nurses' practice mean score in control and intervention groups

Overall nurses' practice regarding cancer pain management	**Group**		**P-Value of Independent t-test**
	Control	**Intervention**	
	M ± SD	**M ± SD**	
Overall Practice	9.31 ± 1.95	11.50 ± 1.43	**< 0.001 VHS**

Table 10. Overall nurses' practice regarding pain management in pre and posttest in control and intervention group

Overall nurses' practice regarding cancer pain management	Group							
	Pre T Control		Post T Control		Pre T Intervention		Post T Intervention	
	F.	%	F.	%	F.	%	F.	%
Poor	1	3.1	2	6.3	2	6.3	0	0
Fair	31	96.9	29	90.6	30	93.8	28	87.5
Good	0	0	1	3.1	0	0	4	12.5

Discussion

The present study showed that three months after educational program the overall knowledge and attitude of nurses towards cancer pain management at intervention group improved statistically very significantly (P- value = 0.000) as compared to control group. This finding is consistent with the study of Tse and Ho (17) showed a significant result was found in nurses' knowledge and attitude towards pain management after pain management education. Same result was observed from the study conducted by Machira et al. (18) showed that there was a significant difference in both pre and posttest of study group but not significant difference in posttest of control group.

The present study revealed that the majority of oncology nurses had fair knowledge level regarding cancer pain management in pre and post-test in control and in pretest in intervention group, while good knowledge level was found in posttest of intervention group. This result is consistent with result of study that was conducted in Jordan (19), while this result is inconsistent with study's result carried out in Jorden by (20,21) reported that oncology nurses had poor knowledge and attitude toward pain management for cancer patients. The result of the current study illustrated that nurses' knowledge and attitude towards pain management for cancer patients had been improved after implementation of educational program. This finding is compatible with the other studies which showed that education program was effective in improving nurses' knowledge and attitude towards pain management (22,23,24,). Implementation of education program to enhance and increase nurses' knowledge and attitude regarding pain assessment and management for cancer patient is essential and important (25,26). In addition, continuous education and professional development towards assessment and management of cancer pain for nursing graduation and post-graduation are necessary and important during systematic training program to enhance and boost nurses' knowledge and attitude regarding pain management for cancer patients (27,28).

The result of the present study demonstrated that most of oncology nurses had a negative attitude about cancer pain management in pre and post-test in control group. However, in intervention group, the same result was observed in pretest, but this result was changed as the most of nurses had a positive attitude at post-test and after three months of pain educational program. These findings were consistent with the study of Howell et al. (29) found that nurses' attitude had changed from negative attitude to positive attitude regarding pain management in post education program, the current results were also in accordance with Vallerand et al. (30) study.

The finding of the current study showed that very highly significant difference was determined regarding overall nurses' practice about cancer pain management in pre and post-tests after three months of education program in study group and in posttest of control group. This result is compatible with the study of Shaima et al. (31) as reported a highly significant difference in practice of nurses regarding cancer pain management in pre and post intervention and control group. These findings are in agreement with the study of Jihad and Khudur (32).

The result of the present study showed that there was a fair practice level among nurses regarding cancer pain management in both pre and post-test of intervention and control group. It means that nurses practice was not improved through implementation of educational program. This result is disagreement with Shaima et al. (31) reported the practice of nurses regarding cancer pain management has improved by providing education program. Another study was conducted in Egypt demonstrated that inadequate level of nurses' practice was observed towards cancer pain management in pre education program. While the level of nurses' practice was improved in post education program (33). The reason behind this result is due to the majority of nurses had diploma in nursing and do not provide active hands on practice the care of patients directly. The nurse always treats the cancer patient according to physician's order.

Conclusion

The study nurses had improved their knowledge and attitudes towards pain management for cancer patients. nurses had fair knowledge and negative attitude in pretest in control and intervention group. After post education nurses had good knowledge and positive attitudes in intervention group. However, nurses' practice had not improved in post education. It is suggested that extra educational program is required for effective practice of nurses towards pain management.

CONSENT FOR PUBLICATION

Not applicable.

COMPETING INTERESTS

The author declare that they have no competing interests.

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