

Effect of an Educational Program on nurses' performance level about Pain Assessment and Management

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Abstract

Background: Pain is commonly regarded as one of the most unpleasant experiences that people fear yet will have to deal with at some point in their lives, with variable intensity and duration. **Aim:** Determine the effect of an educational program on nurses' performance levels regarding pain assessment and management. **Design:** A quasi-experimental one-group, pre- and post-test intervention design was used to conduct this study. **Setting:** The present study was conducted at the inpatient medical and surgical department at Al-Zarqa Governmental Hospital, Jordan. **Subject:** 106 male/female nurses volunteered to participate in the study, providing direct nursing care for patients at medical and surgical wards. **Tools:** Two adopted tools were used by the researcher to conduct this study, a nurses' knowledge about pain assessment and management questionnaire and a nurses' practices observational checklist. **Results:** The study found that more than two thirds of the studied nurses were female and had a Bachelor of Science in Nursing. They had 2–5 years of experience, and 88.7% had not attended any educational sessions on pain assessment and management. There was a significant difference in the mean score of knowledge between the pre-educational program and post received pain education as measures by the knowledge questionnaire $P < 0.001$. After implementation of the education program, all dimensions of nurses' practices significantly differ, with a high correlation between knowledge and practices pre-, post-, and immediately after the implementation of the program. **Conclusion:** More than half of the studied nurses had a good total level of knowledge and a satisfactory level of practice regarding pain assessment and management after the implementation of the educational program. **Recommendations:** Nurses should be encouraged to attend pain assessment and management training.

Keywords: Pain management program (PMP), Nurses' Performance, Pain Assessment and Management

Introduction

Pain is commonly regarded as one of the most unpleasant experiences that people fear yet will have to deal with at some point in their lives, with variable intensity and duration. The International Association for the Study of Pain (Raja, 2020) defines pain as a distressing sensory and emotional experience caused by real or potential tissue damage. Despite pharmacological breakthroughs in pain therapy, research from around the world demonstrates that pain is still undermanaged, owing to a lack of information about pain and how to control it. (Gustafsson & Shahriary 2015). Poor pain evaluation and treatment have a negative impact on patient outcomes, extending hospitalization and prolonging healing (Liyew, 2020). As individuals' advocates and caregivers, nurses have a responsibility to assess and handle clients' experiences of suffering accurately. Nevertheless, investigations have revealed that physicians' perceptions and information concerning pain are insufficient (Karaman, 2019). Nurses must have sufficient knowledge of pain assessment and management to provide quality care for patients with pain using pharmacological or non-pharmacological therapies. Nurses play a key role in pain treatment because they are the ones who monitor patients and offer care 24 hours a day. (Mazilu et al, 2018). Each patient has the right to be pain-free. As a result, maintaining comfort and managing pain are key difficulties in nursing, and pain control has always been the responsibility of nurses. (Limakatso, 2020).

Aims of the study

Determine the effect of an educational program on nurses' performance level about pain assessment and management

Research hypothesis:

1. Nurses' who attended the developed educational program exhibit higher scores of knowledges about pain assessment and management after the program than before.

2. Nurses' who attended an educational program will exhibit higher practice scores in implementing pain assessment and management after the program than before

Materials and Method:

• Design:

A quasi experimental one group, pre and post-test intervention design used to conduct this study which aims to examine the effect of a effect of an educational program on nurses' performance level about pain assessment and management.

Setting:

The present study was conducted at the inpatient medical and surgical department at AL-Zarqa Governmental Hospital, Jordan.

Population and sample

The study subject comprised a convenience sample of 106 male/female nurses, from the total 137 of the nurses agreeing to participate who are involved in providing direct nursing care for patients at the above-mentioned wards medical and surgical wards were involved in the study.

Tools of the study:

Tool one: Nurses' knowledge about pain assessment and management questionnaire developed by (Ferrell, 2014). It was used by the researcher to assess nurse's knowledge about pain assessment and management. It's includes two parts as follows:

Part one: Nurses' Socio- demographic characteristics: This part included nurses' socio-demographic characteristics as: age, gender, marital status, nursing qualifications, years of experience in medical and surgical department, and attendance of pre- or in-service training program(s) related to pain assessment and management

Part two: Nurses' knowledge in related to pain assessment and management. This part is concerned with assessing nurse's knowledge about pain assessment and management in medical and surgical wards,

which was include 39 questions (17 MCQ questions, and 20 T or F questions). This tool was modified by the researcher, 2 questions about paediatric pain management were excluded which are not related to adult field (reliability and validity checked after the modification).

Tool II: Nurses' practices observational checklist about pain assessment and management to measure the nurse's practice Adopted observation checklist developed by. (Emilie, Patricia, Stephan, Robin and Anne et al, 2014) it was modified by the researcher to assess the actual nurses' practice about pain assessment and management in medical and surgical department, which was include 36 observation.

Method:

An Approval from the Research Ethics Committee Faculty of nursing, Alexandria University was obtained. An official Permission Form the Faculty of Nursing, Alexandria university was obtained and directed to ministry of health in Jordan to take their permission to conduct the study after explaining the aim of the study. An Approval from the Research Ethics Committee in AL-Zarqa Governmental Hospital, Jordan was obtained. Approval from the authors of the tools to use in present research was obtained. Using anonymous box to select the staff who would like to participate in the study. Program development: The educational program on enhancing nurse's performance about pain assessment and management in medical and surgical department in collaboration with pain management team and education department were developed based on review of literature. Validity: All tools used were tested for content validity by five experts in medical- surgical nursing, faculty of nursing- University of Alexandria to assure the content validity, clarity of items, comprehensiveness, appropriate translation and necessary modifications were introduced. Reliability: Reliability of the tools were testing using the Cronbach's Alpha test was (0.92) to measure its internal

consistency to evaluate how well the tools consistently measure what they were designed to measure. For inviting the nurses' to participate in the study: anonymous box used for the staff who would like to participate in the study kept in the nursing station for each medical and surgical unit . The training sessions were implemented within their mandatory 2-hour education sessions, a total of 22 nurses per day were divided into two groups. Each group consists of 11 nurses. The training sessions were done five times per week covering morning shift. The education sessions of the program was covering one-hour theoretical and one-hour practical sessions. The duration of each session was 60 minutes. Each session started with the objectives of the session. The theoretical sessions; were conducted through group discussion using a very simple language, using power point suits the level of nurses. Sessions of nurses' education were carried out to provide them with new knowledge. The duration of each group session was last 60 minutes to cover: Introduction of pain assessment and management, pain assessment skills and pain management methods and pain reassessment. The practical sessions; were provided using demonstration techniques by using real materials, instruments, case scenario and workshop. Sessions of nurses' training were carried out to provide them with new skills and practices. The duration of each group session was last 60 minutes to cover: subjective assessment on management, objective assessment and intervention and reassessment. For the observing the nurses' practice: The researcher got approval from all medical and surgical units to observe the studied nurses' practice regarding pain assessment and management for those agree to participate in the study with approximately 5 staff per- day for 21 days.

Evaluation- To evaluate program expected outcome. Post testing of nurses' knowledge and performance about pain assessment and management immediately after implementation of the education program and

after one month from the end of the program using all the study tools were done. The appropriate statistical tests were used to analyze the obtained data. For statistical analysis and tabulation, the Statistical Package for Social Science SPSS will be utilized. Comparison between the findings of pre and posttest were carried out using appropriate statistical analysis (t test) in order to determine the difference in mean score and measure the impact of using an educational program on nurses' knowledge and practice about pain assessment and management.

Statistical analysis of the data:

After the data were collected, they were coded and transferred into special design formats, so as to be suitable for computer feeding. Following data entry, checking and verification processes were carried out to avoid errors during data entry. Data was computed and statistically analyzed using the Statistical Package for Social Sciences "SPSS" software version 20.

Ethical considerations:

Informed consent was obtained from the nurses who participated in the study. Witness consent was obtained from administrative personnel at the selected setting, then from the head nurse for nurse's observation after explaining the aim of the study in Jordan. Confidentiality of the collected data were assured throughout the study. The subjects were assured that their participation is voluntary and they had the right to withdraw from the study at any time

Results:

Table (I) Demographic characteristics of the nurses studied'; 106 nurses from the Al-Zarqa hospital participated in this study. More than half (70.8%) of the study's participants were women, with a noticeable percentage (43.4%) of them ranging in age between 25 and 30 years old. Additionally, the findings revealed that nearly three-quarters (71.7%) of the

participants in the study had earned a Bachelor of Science in Nursing, and around one third of the nurses had experience ranging from two to five years. Only 14.2% of people have less than two years of experience. The results indicated that 88.7% of respondents hadn't gone to any educational sessions on pain evaluation and management in the previous two years. There is no relation between the studied nurses' socio-demographic data characteristics and their level of performance in pain assessment and management.

(Table II) The Mean distribution of the studied Nurses' according to their knowledge about pain assessment and management. Following the implementation of the education program, 0% of the studied nurses had poor knowledge immediately after the education program, while (16%) had fair knowledge and (84% had good knowledge). in addition (0%) of the studied nurses' had poor knowledge after one month from the education program, and (18.8%) of the studied nurses' had fair knowledge after one month from the education program. While (81.2%) had good knowledge

(Table III) The overall means score for the observed nurses' practices about pain assessment and management. The study found that there was a significant difference in the mean scores of all dimensions of the studied participants according to observed nurses' practices about pain assessment and management. The mean score between the pre-educational program and post received pain educational program about reassessment of pain was 1.82, while the mean score after receiving the program was 0.78. This suggests that there were statistically significant differences in the mean score of practice.

(Table IV) Distribution in studied nurses' according to Nurses' practices observational about pain assessment and management. Two third (86%) of the studied nurses' had Satisfactory level after education program immediately. and 14% had an unsatisfactory

level. In addition, 83% of the studied nurses' had a satisfactory level after one month in the

education program. And (17%) had unsatisfactory level.

(Table V) The correlation between knowledge and practices in the studied nurses' pre and post implementing the educational program regarding pain assessment and management. Pre, post and one month after educational program show high correlation between knowledge and practices ($r= 0.956, 0.969, 0.954$).

Discussion

The majority of nurses in Saudi Arabia are aged between 25 and 30 years, due to low nurse recruitment from the government. Alreshidi (2016), Abdul-Jaleel (2020), and Samarkandi (2021) all found that the majority of the sample was between the ages of 21 and 30. The highest percentage of the study subjects were females, due to the majority of male nurses immigrating to another country in search of a higher salary. Females also had a higher level of education than males. The largest group of samples in the study was a Bachelor of Science in Nursing. Many previous B.S.N. studies were in agreement with this result; they found that the majority of the nurses working in medical and surgical wards are graduates of the Bachelor of Science in nursing program, such as Abdul-Jaleel (2020).

Concerning the year of experience, the result of the present study revealed that the majority of nurses in the study have between 2 and 5 years of experience. From the researcher's point of view, this can be explained by both very low nurse recruitment from the government and nurses' immigration. In terms of pain assessment and management training, the study found that 88.7% of participants in the study group had no training sessions within the previous two years. This finding is related to the fact that the majority of the studied nurses have very busy shifts due to a shortage of staff that is restricting their education. This result agrees with several studies that indicate in their results that the majority of the study sample had no training sessions as D'emeh (2016) mention in his research about "Pain-related knowledge and barriers among

Jordanian nurses: a national study." health," as well as AlReshidi (2016). The result of the present study shows there is no relation between the studied nurses' socio-demographic data characteristics and their level of performance in pain assessment and management. Which is supported by Abdul-Jaleel (2020), who stated, no significant finding between studied nurses' socio-demographic data characteristics regarding their knowledge and practice about pain assessment and management.

Concerning the effectiveness of educational program on nurses' level of knowledge about pain assessment and management, the result of the present study indicated that the study sample had poor knowledge before the educational course; the study found that about 79% of the study group did not pass before the educational course. According to the researcher, this could be due to a lack of in-service educational activity, a lack of continuous staff evaluation, or a lack of pain management competency. Quliti and Alamri (2015) completed their research on "Pain Assessment." Knowledge, Attitude, and Practice of Health Care Providers" that there is a deficit in pain assessment and management before an educational course. In regard to the implementation of the educational program about pain assessment and management, the results in the above tables show that nurses' knowledge regarding the assessment and management of patients with pain has improved after exposure to the educational program. The study found that about 84% of nurses had good knowledge after exposure to the educational program immediately and 81.2 percent after one month from the implementation. This might be because of Well-structured in-service education sessions are able to improve knowledge. This is indicated by the significant difference between the pre-test and post-test results, which is supported by a previous study that indicated that there was a high significance difference between the pre-test and post-test. In addition, Issa (2019) found in their study that applying a pain educational program could improve nurses' knowledge regarding patients with pain. This result is in agreement with Samarkandi's (2021) findings, which indicate

that providing education classes to nurses can be successful in increasing nurses' knowledge. Therefore, the implemented educational program is effective and has an impact on the nurse's knowledge about the assessment and management of patients with pain. Moreover, the study claimed that there was no significant drop in nurses' knowledge after one month of implementation of the educational program ($P > 0.05$). Which is supported by Zhang (2008).

Concerning the effectiveness of educational programs on nurses' level of practice in pain assessment and management, Regarding the results in the preceding tables indicating that nurses' practice regarding assessment and management of patients with pain has improved after exposure to educational programs, the study discovered that approximately 86% of nurses reached a satisfactory level after immediate exposure to educational programs and 83% after one month of implementation. This finding may be related to the fact that well-structured in-service training sessions are able to improve nurses' practice. Mahmoud (2020) found in their study that applying the pain educational program improved nurses' practice level regarding patients with pain ($p = 0.001$). Uysal & Yilmazer (2021) concluded that the result of their study, "The Effect of Pain Management Training on the Nurses' Knowledge and Practices for Pain," was that the practice of the nurses significantly increased after the training ($p = 0.005$).

The relationship between nurses' level of knowledge and practices regarding pain assessment and management According to the results of the present study, there is a highly significant relationship between knowledge and practice regarding pain assessment and management ($P = .001$), both immediately and after one month of program implementation about pain assessment and management. From the researcher's point of view, knowledge is an important component that promotes behavior changes, and nurses must have adequate and correct information on pain assessment and management as found in the current study and other supporting studies. As Rahman (2021)

In their study, "A Nonrandomized Pre-Test Post-Test Study on the Impact of an Educational Pain Management Program on Nurses' Knowledge and Attitudes Regarding Pain in a Middle Eastern Country," they stated there was a significant relationship between knowledge and practices regarding pain assessment and management. This result is supported by Issa et al. (2019) in their study, "Impact of an Educational Program on the Knowledge and Attitude about Pain Assessment and Management among Critical Care Nurses" ($P = .001$). From the foregoing discussion, it is clear that the study hypothesis is supported and accepted by the present study data. It can be concluded that the educational program about pain assessment and management is able to improve nurses' knowledge and show an impact on practice changes. Furthermore, continuous staff evaluation and pain management competency should be taken into consideration. The educational program has a positive effect on the patient's life by improving their experience and decreasing their suffering from pain.

CONCLUSION

More than half of the studied nurses' had a good total level of knowledge and satisfactory level of practice regarding pain assessment and management after implementation of the educational program, which proved the effectiveness of the educational program on the nurses' level of performance about pain assessment and management.

RECOMMENDATIONS

- Including the PMP as an essential session of a general orientation program for newly hired staff.
- Implementation of the educational program should be performed in collaboration between the pain management team and education department .
- Continuous staff evaluation and pain management competency should be taken into consideration.
- Interactive teaching strategies, such as on-the-job training, improvisational learning,

and case studies, should be tested for their influence on pain knowledge and practice.

- Encourage nurses to attend conferences, workshops about pain assessment and management .

Future researches:

- To do further study to assess the impact of the pain education program on the patients' quality of life.

Table (I): Distribution of the studied subjects according to their socio-demographic characteristic

nurses' characteristics	Studied nurses' (n=106)	
	No	%
Age (in years)		
20-25 Years	37	34.9
25-30 Years	46	43.4
30> Years	23	21.7
Min-Max	20-50	
Mean ± SD	30± 1.23	
Gender		
Male	31	29.2
Female	75	70.8
Level of qualification		
Diploma of nursing	23	21.7
Bachelor of Science in Nursing	76	71.7
Master of Science in Nursing	7	6.6
Year of Experience		
Less than 2 Years	15	14.2
2- 5 Years	35	33.0
5- 10 Years	25	23.6
>10 years	31	29.2
Attended any educational programs about pain assessment and management within the last 2 years		
No	94	88.7%
Yes	12	11.3%

Table (II): Differences in studied nurses' according to their overall knowledge before and after implementing the education program regarding pain

Nurses' knowledge about pain assessment and management	Pre-educational program		post educational program immediately		After one month from educational program	
	No	Percent %	No	Percent %	No	%
Poor knowledge (Less than 60%)	84	79.3%	0	0	0	0
Fair knowledge (60- 85%)	22	20.7%	17	15.1 %	20	18.9%
Good knowledge (More than 85%)	0	0	89	83.9%	86	81.1%
Total	106	100	106	100	106	100

Table (III): The overall means score for the observed nurses' practices about pain assessment and management (n = 106).

Nurses' practice about pain assessment and management	Pre-educational program	post educational program immediately	After one month from educational program	Test		Sig. bet. periods		
	Mean ± SD	Mean ± SD	Mean ± SD	F	p	p1	p2	p3
Initial Assessment	5.43 ± 0.805	9.08 ± 1.061	9.02 ± 1.087	371.75	*<.001	*<.001	*<.001	0.326
Try to obtain a self-reported assessment of pain	2.04 ± 0.935	3.64 ± 0.733	3.65 ± 0.704	98.89	*<.001	*<.001	*<.001	1.000
Looks for potential of pain or discomfort	2.02 ± 0.743	7.63 ± 0.667	7.59 ± 0.714	1964.08	*<.001	*<.001	*<.001	0.308
Observes the patient's behaviors	7.72 ± 1.766	19.57 ± 1.441	19.53 ± 1.468	1738.98	*<.001	*<.001	*<.001	0.308
Non-pharmacological interventions to alleviate pain	2.02 ± 1.033	8.63 ± 1.482	8.59 ± 1.459	858.90	*<.001	*<.001	*<.001	1.000
Uses pharmacological to alleviate pain	2.45 ± 0.745	3.49 ± 0.605	3.44 ± 0.618	13.789	*<.001	*<.001	*<.001	0.074
Reassessment pain	0.78 ± 0.414	1.82 ± 0.385	1.79 ± 0.407	213.19	*<.001	*<.001	*<.001	0.250
Assess possible side effects	2.28 ± 1.271	6.34 ± 0.994	6.31 ± 1.018	369.24	*<.001	*<.001	*<.001	0.250
Overall Practice (72)	25.68 ± 3.485	60.21 ± 2.377	59.96 ± 2.423	4956.5	*<.001	*<.001	*<.001	0.081

Table (IV) Distribution in studied nurses' according to Nurses' practices observational about pain assessment and management

Nurses' practices observational about pain assessment and management	Pre- educational program		post educational program immediately		After one month from educational program	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Unsatisfactory level (Less than 85%)	100	100%	15	14%	18	17%
Satisfactory level (> 85%)	0	0%	91	86%	88	83%
Total	106	100	106	100	106	100

Table V: The correlation between knowledge and practices in the studied nurses' pre and post implementing the educational program regarding pain assessment and management (n=106)

		Practices		
		Pre- educational program	post educational program immediately	After one month from educational program
Knowledge	R	0.956**	0.969**	0.954**
	P	<.001	<.001	<.001

r: Pearson coefficient

*: Statistically significant at p ≤ 0.01

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