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RESEARCH ARTICLE

Educational Program for Nurses about Pain-Related Management for Children with Burns Injuries

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ABSTRACT
Pain management is a very important aspect of nursing care. However, due to a lack of overall understanding, it is not uncommon to see inadequate pain management by health workers. Therefore, the knowledge of nurses are important factors for the effective management of pain in children. Therefore, the purpose of the study is to evaluate the effectiveness of an educational program for nurses about pain-related management for children with burns injuries. This study adopted a pretest-posttest I and II a pre - experimental design. The sample consisted of 30 participants. The reliability of the questionnaire was achieved through a pilot study and then presented to experts to prove its validity. The total number of items included in the questionnaire was 45-items for knowledge. The data was collected by using the self-report method; and analysed by applying a descriptive and inferential statistical data analysis approach. The results of the study indicated that the nurses expressed a good level of knowledge with regard pain management at the post-test period of measurement (*M± SD= 4.27±0.720*) after application of educational program as compared pre-test period of measurement (*M± SD= 2.57± 0.568*) were unsatisfactory knowledge. There were significant differences in nurse's knowledge between pre-test and post-test I scores ($P < 0.05$); and there were no significant differences in nurse's knowledge between post-test I and post-test II ($P > 0.05$). An educational training program is effective in improving nurses' knowledge about pain-related management for children with burns injuries. Findings from this study showed that after the training, nurses' knowledge toward pain management were enhanced and not affected by time. There is a need for burn training program that should be provided to nurses in order to improve their knowledge regarding burn management is recommended, and all nurses should be exposed to pain management training to equip them with necessary knowledge with which to provide better quality of nursing care in the health-care setting. Further research need to be under taken to involve national level and investigate the influencing factors of knowledge of pain management in paediatric hospitals.
Keywords: Educational Program, Nurses, Pain Management, Burns Injuries

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INTRODUCTION

Burn injury occurs to the skin or other organic tissue primarily result in from exposure or direct contact to any type of chemical, thermal, electrical, or radiation (WHO, 2021).

Burns are the fourth most common type of trauma in the world, after car accidents, falls, and interpersonal abuse. Burns are becoming more common as people's socioeconomic status declines, especially in low- and middle-income countries (David & Greenhalgh, 2019), and the results of treatment over time are improving as a result of the scientific revolution. Every year all over the world are affected by burn injuries. Although the majority of these burns are mild, some require long-term care and recovery (Garcia-Espinoza et al., 2017).

Burn injuries are a common type of childhood trauma caused by scalds and contact heat, but they can also be caused by flames, friction, electricity, or chemicals (Gill et al., 2017).

The degree of a burn injury can be divided into four categories, the first or superficial burn affects the partial surface of the skin, the epidermis and a part of the dermis are both affected by a burn. Partial thickness burns are categorized into superficial and deep partial thickness based on the depth of skin injury. Pink, moist, and painful to the touch, superficial partial thickness burns are the most common type. Deep partial thickness burns are usually dry, speckled pink and white. complete thickness burns affect the epidermis and the entire dermis, and they are brown-black, leathery, and cause no or little pain (Klein et al., 2014).

The extent or depth of the burn injury determines the degree or severity of pain in burn injury, so the initial or surface burn injury is the most painful, followed by the second or part thickness burn injury. Burns to the third or full thickness are characterized with little or no sensation. (Jaya, et al., 2018).

Standard care for children with burns includes wound cleaning and removal of dead tissue, followed by daily dressing change. Fluid therapy, healthy nutrition, minimizing infection, surgical treatment, assessment and management of associated pain during wound care and after surgical treatment (Morgan et al., 2018) and long-term care, which can have serious physiological and psychological consequences in the long run, Unfortunately, children's burn pain is frequently underestimated and untreated. (Bayat et al.,2014).

Pain is a major concern in the management of children with burns because they are related to a variety of unpleasant events. The severity of a burn injury has also been shown to be related to the level of overall pain (Sarah et al., 2018).

Pain can limit burn care, cause healing to be delayed, and result in secondary effects. The burns unit's uncomfortable environment, as well as burn staff's lack of time to psychologically ready children for frequent interventional procedures, may lead to pain aggravation (Patterson et al.,2015). In response to hospitalization, conditioned anxiety, regression, and behavioral acting out occur in children with serious thermal injury, this could potentially develop to severe pain and sleep difficulties (Stoddard et al., 2015).

METHOD

The study selected quantitative research " a pre-experimental design" to carry out at Specialized Burn Center at Al-Fayhaa Teaching Hospital in Basra City to determining the effectiveness of an nurses practice about pain-related management for children with burns Injuries, the study started from (3th of December 202١ to 20th of March 2022). The Sample of the Study choosing the study sample, the total population was taken into consideration and the excluded sample was determined. A non-probability (Purposive) sample is used to obtain accurate data and are presentative sample was selected for the current study. The sample consists of (30) nurses was participating and applied in the study related to pain management for child with burns injuries at Al-Fayhaa Teaching Hospital / Specialized Burn Center in Basra City. The current study was carried out Specialized Burn Center in Al-Fayha Teaching Hospital in Basra City, the hospital was established in the year 1962 A.D., and it was a military hospital called (Basra Military Hospital). After 2003, it was turned into a civilian hospital. It includes many departments and specialized medical centers, including the Burns Specialized Center.

RESULTS

Table 1. Demographic characteristics related to participants.

NO.	Demographic Variables	Items	Freq.	%	Mean	St. D.
1.	Age	(21-30)	12	40.0	1.90	0.845
		(31-40)	9	30.0		
		(41-50)	9	30.0		
2.	Gender	Male	15	50.0	1.50	0.509
		Female	15	50.0		

3.	Level of Education	Nursing School	11	36.7	1.63	0.490
		Nursing Institute	**19**	**63.3**		
4.	Years of Experience in nursing	(1-5)	**12**	**40.0**	2.27	1.258
		(6-10)	6	20.0		
		(11-15)	4	13.3		
		(16-20)	8	26.7		
5.	Years of practice in burn unit	(1-5)	**15**	**50.0**	1.67	0.758
		(6-10)	10	33.3		
		(11-15)	5	16.7		
6.	training courses	Inside Iraq	2	6.7	2.87	0.507
		NO	**28**	**93.3**		
7.	Number of training courses	Never	**28**	**93.3**	0.07	0.254
		One Time	2	6.7		
8.	Reading Sources	Yes	14	46.7	1.53	0.507
		No	**16**	**53.3**		
	Total		30	100.0	30	100.0

Table 2. **Statistical Differences Result for Nurses' Knowledge regarding Types and Management for children with Burn Injuries.**

Items	**Estimate**	**Pre-test**		**Post-test 1**		**Post-test 2**		**Paired Samples**	**t**	**P. value**	**Sign**
		Freq.	**%**	**Freq.**	**%**	**Freq.**	**%**				
Types of burn pain	Fail	5	16.7	0	0.0	0	0.0	Pretest - Posttest 1	-6.656	**0.000**	**HS**
	Unacceptable	**18**	**60.0**	6	20.0	7	23.3	Pretest - Posttest 2	-6.176	**0.000**	**HS**
	Acceptable	5	16.7	**13**	**43.3**	**14**	**46.7**				
	Good	2	6.7	11	36.7	9	30.0	Posttest 1- Posttest 2	1.795	0.083	NS
	Excellent	0	0.0	0	0.0	0	0.0				
General Management of Burns	Fail	11	36.7	0	0.0	0	0.0	Pretest - Posttest 1	-7.225	**0.000**	**HS**
	Unacceptable	**13**	**43.3**	3	10.0	3	10.0				
	Acceptable	6	20.0	7	23.3	9	30.0	Pretest -	-7.109	**0.000**	**HS**

								Posttest 2-			
	Good	0	0.0	**20**	**66.7**	**18**	**60.0**	Posttest 1- Posttest 2	1.439	0.161	NS
	Excellent	0	0.0	0	0.0	0	0.0				
Surgical Management	Fail	2	6.7	0	0.0	0	0.0	Pretest- Posttest 1	-4.892	**0.000**	**HS**
	Unacceptable	**13**	**43.3**	7	23.3	7	23.3				
	Acceptable	12	40.0	6	20.0	7	23.3	Pretest- Posttest 2	-4.626	**0.000**	**HS**
	Good	3	10.0	**17**	**56.7**	**16**	**53.3**				
	Excellent	0	0.0	0	0.0	0	0.0	Posttest 1- Posttest 2	1.000	0.326	NS
Total		30	100.0	30	100.0	30	100.0				

Table 3. **Statistical Differences Result for Nurses' Knowledge regarding Pain Management for children with Burn Injuries**

Items	Estimate	Pre-test	Post-test 1			Post-test 2		Paired Samples	T	P. value	Sign
		Freq.	%	Freq.	%	Freq.	%				
Assessment of Pain	Fail	12	40.0	0	0.0	0	0.0	Pretest- Posttest1	-7.737	**0.000**	**HS**
	Unacceptable	**16**	**53.3**	3	10.0	3	10.0				
	Acceptable	2	6.7	5	16.7	6	20.0	Pretest- Posttest2	-6.620	**0.000**	**HS**
	Good	0	0.0	6	20.0	6	20.0				
	Very good	0	0.0	7	23.3	7	23.3	Posttest1- Posttest2	1.682	0.103	NS
	Excellent	0	0.0	**9**	**30.0**	**8**	**26.7**				
Management of Pain-Pharmacological approaches	Fail	9	30.0	1	3.3	1	3.3	Pretest- Posttest1	-6.746	**0.000**	**HS**
	Unacceptable	**10**	**33.3**	1	3.3	1	3.3				
	Acceptable	6	20.0	7	23.3	7	23.3				
	Good	2	6.7	4	13.3	4	13.3			**0.000**	**HS**

	Very Good	3	10.0	5	16.7	5	16.7	Pretest-Posttest2	-6.746		
	Excellent	0	0.0	**12**	**40.0**	**12**	**40.0**				
Management of Pain- Non-Pharmacological Techniques	Fail	**15**	**50.0**	3	10.0	3	10.0	Pretest-Posttest1	-6.934	**0.000**	**HS**
	Unacceptable	4	13.3	3	10.0	3	10.0				
	Acceptable	9	30.0	7	23.3	7	23.3				
	Good	2	6.7	6	20.0	6	20.0	Pretest-Posttest2	-6.934	**0.000**	**HS**
	Very Good	0	0.0	**11**	**36.7**	**11**	**36.7**				
	Excellent	0	0.0	0	0.0	0	0.0				
Total		30	100.0	30	100.0	30	100.0				

Table 4 The Statistical Correlations between effect of an Intervention Program for Nurses' Knowledge results with the Demographic Variables

Nurses' Knowledge	Age	Gender	Level of Education	Experience in Nursing	Practice in Burn Unit	Training Courses
Post-Test 1						
General nurses' Knowledge	0.267	**0.028**	0.407	0.436	0.875	0.126
Types of burn pain	**0.000**	0.266	**0.027**	**0.000**	**0.006**	0.060
Assessment of Pain	**0.050**	**0.025**	0.361	**0.002**	**0.003**	0.103
General Management of Burns	**0.001**	0.688	**0.001**	**0.007**	**0.034**	0.085
Surgical Management	**0.027**	0.058	0.218	**0.010**	**0.039**	0.359
Management of Pain-Pharmacological approaches	**0.030**	0.846	0.074	0.169	0.432	0.270
Management of Pain- Non-Pharmacological Techniques	0.113	**0.063**	0.576	**0.050**	**0.021**	0.364
Total sample knowledge	0.645	0.895	0.778	0.837	0.343	0.502
Nurses Intervention about Pain management for children with Burn injuries	**0.007**	0.141	**0.042**	**0.004**	**0.009**	0.150
Post-Test 2						
General nurses' Knowledge	**0.000**	0.230	**0.017**	**0.000**	**0.015**	0.064
Types of burn pain	0.124	**0.046**	0.384	**0.005**	**0.024**	0.401
Assessment of Pain	**0.000**	0.543	**0.001**	**0.005**	**0.043**	0.090
General Management of Burns	**0.034**	**0.060**	0.169	**0.007**	**0.072**	0.291
Surgical Management	0.057	0.695	0.101	0.271	0.481	0.243
Management of Pain-Pharmacological approaches	0.113	0.063	0.576	**0.050**	**0.021**	0.364

Management of Pain- Non-Pharmacological Techniques	0.645	0.895	0.778	0.837	0.343	0.502
Total sample knowledge	**0.002**	0.315	**0.004**	**0.002**	**0.014**	0.102

The table (1) shows the demographic characteristics of the nurses sample in the study, that 40.0% (12) of the sample at age (21-30) years with mean (1.90) and standard deviation (0.845), the sample gender was equal in number between male and female with mean (1.50) and standard deviation (0.509), 63.3% (19) of them was nursing institute of educational level with mean (1.63) and standard deviation (0.490), 40.0% (12) of the sample at (1-5) years of experience in nursing with mean (2.27) and standard deviation (1.258), 50.0% (15) of the sample at (1-5) years of experience in nursing with mean (1.67) and standard deviation (0.758), 93.3% (28) of the sample not having training courses with mean (2.87) and standard deviation (0.507), also 93.3% (28) of the sample not having number of training courses with mean (0.07) and standard deviation (0.254), finally 40.0% (12) of the sample not reading sources with mean (1.53) and standard deviation (0.507).

The table (2) shows the statistical differences result for nurses' knowledge regarding types and management for children with burn injuries, that the types of burn pain was 60.0% (18) of the sample at unacceptable level of knowledge in pretest, but 43.3% (13) of the sample at acceptable level of knowledge in posttest 1, also 46.7% (14) of the sample at acceptable level of knowledge in posttest 2, for that the paired samples t-test at Pretest- Posttest 1 was (-6.656) with P. value (0.000) high significance, the t-test at Pretest- Posttest 2 was (-6.176) with P. value (0.000) high significance, but the t-test at Posttest1- Posttest 2 was (1.795) with P. value (0.083) non-significance. The general management of burns was 43.3% (13) of the sample at unacceptable level of knowledge in pretest, but 66.7% (20) of the sample at good level of knowledge in posttest 1, also 60.0% (18) of the sample at good level of knowledge in posttest 2, for that the paired samples t-test at Pretest- Posttest 1 was (-7.225) with P. value (0.000) high significance, the t-test at Pretest- Posttest 2 was (-7.109) with P. value (0.000) high significance, but the t-test at Posttest1- Posttest 2 was (1.439) with P. value (0.161) non-significance. The surgical management was 43.3% (13) of the sample at unacceptable level of knowledge in pretest, but 56.7% (17) of the sample at good level of knowledge in posttest 1, also 53.3% (16) of the sample at good level of knowledge in posttest 2, for that the paired samples t-test at Pretest- Posttest 1 was (-4.892) with P. value (0.000) high significance, the t-test at Pretest- Posttest 2 was (-4.626) with P. value (0.000) high significance, but the t-test at Posttest1- Posttest 2 was (1.000) with P. value (0.326) non-significance.

The table (3) presents the statistical differences result for nurses' knowledge regarding pain management for children with burn injuries, that the assessment of pain was 53.3% (16) of the sample at unacceptable level of knowledge in pretest, but 30.0% (9) of the sample at excellent level of knowledge in posttest 1, also 26.7% (8) of the sample at excellent level of knowledge in posttest 2, for that the paired samples t-test at Pretest- Posttest 1 was (-7.737) with P. value (0.000) high significance, the t-test at Pretest- Posttest 2 was (-6.620) with P. value (0.000) high significance, but the t-test at Posttest1- Posttest 2 was (1.682) with P. value (0.103) non-significance. The management of pain-pharmacological approaches was 33.3% (10) of the sample at unacceptable level of knowledge in pretest, but 40.0% (12) of the sample at excellent level of knowledge in posttest 1, also posttest 2, for that the paired samples t-test at Pretest- Posttest 1 was (-6.746) with P. value (0.000) high significance, the t-test at Pretest- Posttest 2 was (-6.746) with P. value (0.000) high significance. The management of pain- non-pharmacological techniques was 50.0% (15) of the sample at fail level of knowledge in pretest, but 36.7% (11) of the sample at very good level of knowledge in posttest 1and posttest 2, for that the paired samples t-test at Pretest- Posttest 1 was (-6.934) with P. value (0.000) high significance, the t-test at Pretest- Posttest 2 was (-6.934) with P. value (0.000) high significance.

The table (5) presents the statistical correlations between effect of an intervention program for nurses' knowledge results with the demographic variables, there was significant correlations between the most demographic variables with most parts of nurses knowledge at p. value ≤ 0.05 at pretest and posttest, and also non- significant correlations between the some demographic variables with some parts of nurses knowledge at p. value ≤ 0.05 at pretest and posttest.

DISCUSSION

Findings show the participants age, most of the volunteers (nurses) in the study were their age 21-30 years as being young adult nurses. This results come due to the increasing number of graduates from medical institutes and colleges in Iraq and their enrolment in the directly job more than before. These findings agreed with study conducted Tripura deals with hospital acquired infection knowledge. Findings depicts majority of the study participants were from 18 to 25 years' age group (70.7%) (Datta et al., 2018). Also this finding is consistent with Rasha (2021), A quasi experimental design was conducted in Minia general hospital, this study shows that half (50%) of the studied nurses had 20 to <40 years' old.

Regards to the participant's gender, the study included 50% were male nurses and 50 % were female nurses, due to the nurses those who are male and female more responses and cooperative to participants in the study. In fact, pediatric hospitals mostly need

nurses from female. According to Kilpatrick et al (2021), the majority of nurses in pediatric wards are female.

Education level related findings, (63.3%) of nurses who work in pediatric hospitals were hold (diploma) nursing institute. This finding come because the presence of institutes in most of the governorates and the graduation of batches of morning and evening study in large numbers in addition to the presence of several departments and various specialties. Many previous studies were in agreement with this result, Okwii (2017), found diploma health care workers constituted 48.9% as a majority. In Middle-East Hospital found that majority of respondents depicts to have diploma which indicate of 63.6% (n = 42) (Mohd-Nor & Bit-Lian, 2019). A study of Gawad (2017), found that respondents with diploma degree and bachelor's degree made up the highest proportions, (61.7 %) and (34.7%) respectively. The higher proportion (47%) of the respondents was diploma in study of Desta et al. (2018). Also these results are supported by Mona (2021), A quasi - experimental research design was conducted in Egypt, this study show their educational level revealed that around half of them had nursing technical institute degree (41.8%, 78.2% respectively). Studies above, all hospitals rely on diploma graduates as this educational degree works in all hospital units, in addition to the many institutions that graduate this degree.

Half of studied sample were had less than 5 years of experience, this is one of the factors affecting their knowledge and skills related to pain management in children. This finding come in line with Lulie et al. (2022), who find that the majority of nurses deals with importance pediatric areas were low years of experience, nurses with higher years of experience were better than those who are less years. Also this result agrees with study done by Mukhlif & Mansour, (2021), at teaching hospitals selected in Mosul city, among experience years in nursing and experience in burns were (1-5) years represent the highest percentage (56.7 %).

The majority of nurses in the study (93.3%) did not have any formal training on paediatric pain management. This is in line with a study in Rwanda by Ufashingabire et al. (2016) and Zeb et al. (2019) in Pakistan where most of the nurses 59.4% and 83.3%, respectively, had no formal training on paediatric pain management. Having a large number of nurses not having formal training on pain management mostly tends to influence their practice.

In current study findings, sexily percentage of nurses were unaware the type of burn pain, (43.3%) of them were unacceptable level in terms of general pain management, (43.3%) were unacceptable level associated surgical management, (53.3%) of nurses unable to assess pain, (33.3%) unaware pharmacological pain management and (50%) give a fail answer in terms of non-pharmacological pain management. In general, (33.3%) of nurses expressed unsatisfactory knowledge about pain management related burn injuries. These are worrisome consequences for the management of pain received by burns leading to infections and child care.

Similar findings have also been reported in other studies (Rampanjato et al., 2007; Albertyn et al., 2009; Latimer et al., 2009). Inability to assess pain therefore, meant nurses may not have been giving appropriate treatment according to pain severity. Consequently, children were likely to endure untreated pain and its effects such as prolonged hospital stay, and long term psychological manifestations (Alotaibi et al., 2019). The study in addition revealed inadequate knowledge of the WHO analgesic ladder and drugs to use at each step of the ladder. Lack of knowledge of pharmacological and non-pharmacological pain interventions has similarly been documented (Vagnoli et al., 2019).

The finding of this study was lower than a study conducted in Australia (77.56%) moderate level of knowledge (Peirc et al., 2018). The possible justification for this difference might be due to the differences in the study setting. The study conducted in Australia included only those nurses who were working in pediatric surgical wards, which might increase their knowledge of the subject matter because of the recent exposure to pain management in children. In addition, the study done in Australia included nurses who were working only in a tertiary pediatric hospital, and did not include other nurses, which might escalate their knowledge level.

Also, the result of this study also showed that nurses' knowledge toward pain management was lower than the studies done in Mekelle city (58.6%) (Miftah et al., 2017), Nigeria Calabar Metropolis health center (60%) (Ojong et al., 2014), and Uganda Mulago Hospital (41%) (Kizza, 2012).

The reason behind this inconsistent finding between these studies might be due to the differences in the study setting, educational level of nurses, and the data collection tool. A study done in Mekelle city includes three public hospitals which is a multicenter study and the participants were diploma and bachelor holders, whereas this study was done in a single referral hospital and includes also MSc degree holders. In addition, studies performed in Nigeria and Uganda used a comprehensive tool to assess the knowledge of pain management for all patients regardless of age category, whereas this study focused on pediatric pain management.

In Ghanaian tertiary hospital, the results of the study were that the nurses had good knowledge regarding pain management in children associated burns, as justified by the nurses had more years of experience (Tetteh et al., 2021).

Another, nurses expressed a satisfactory knowledge related pan management in Blantyre, Malawi due to higher academic qualification (Kholowa et al., 2017).

In another directory, nurses in Turkey exhibited poor knowledge related pain management of pediatric

as being the majority were low level of education (diploma) (Ekim & Ocakcı, 2013).

The unsatisfactory pain-management knowledge in University of Gondar Comprehensive Specialized Hospital due to lack of training (Lulie et al., 2022).

In current study findings, nurses expressed a good level of knowledge with regard pain management at the post-test period of measurement (*M± SD= 4.27±0.720*) after application of intervention program as compared pre-test period of measurement (*M± SD= 2.57± 0.568*) were unsatisfactory knowledge. With respect to the statistical mean, the study results indicate that there is an improvement in the knowledge scores in post test I after the application of the intervention program compared with the pre-test before application of intervention program (effectiveness of an intervention program).

There is accepted hypothesis that states (There were significant differences in nurse's knowledge between pre-test and post-test) (*p=0.000*), nurses participated in the study achieved considerable benefit from intervention program concerning pain management related burns injuries.

After a month has been passed, there were no significant differences in knowledge scores between post-test I (*M± SD= 4.27±0.720*) and post-test II (*M± SD= 4.20±0.714*), this means that nurses' knowledge is not affected by the passage of time (*p > 0.05*).

This finding is supported by findings from Practices in China, experimental group nurses had an improvement in pain assessment. The percentage of nurses who correctly used the Chinghai Pain Scale to assess patients' pain intensity increased significantly after the PEP, and the increased usage of the assessment tool between experimental and control groups also shows a statistical difference in trend (*x2=93.281, P < 0.001*). The PEP has been demonstrated to be effective in improving nurses' pain knowledge assessment (Zhang et al., 2008).

Sujatha et al. (2015), showed that the Pre-test and Post–test knowledge scores found statistically significant 't' = 1.671, p<0.05. It reveals the effectiveness of structured teaching program. And the study also shows that there is no significant association between the knowledge scores of the staff nurses with the selected demographic variables like age, gender, educational qualification, total clinical experience, previous knowledge regarding Neonatal pain management.

Findings presents the statistical correlations between effect of an educational program for nurses' knowledge results with the nurse's demographic variables such as (age, gender, education level and years of experience). This correlation and the moral differences are considered as factors affecting their knowledge. Further studies need to be under taken to assess in more details the influencing factors of pain management among pediatric nurses.

Olsson (2011), confirmed that the nurses experience is significantly (positive) correlated with their knowledge regards pediatric pain management, that is, more years of experience is significantly increased nurse's knowledge.

A study by Mohammed (2016) is consistent with the current study through revealed a significant correlation between knowledge with their age at pre-test and post-test assessment of (P= 0.462) and (P= 0.315) at p. value equal or less than (0.05).

Also, the result of this study is consistency with a study by ALSudani & Ali, (2014), that finding of the study show there was a significant association with level education and nurses' knowlege.

Heo et al. (2016), find that there were significant differences in nurse's knowledge concerning pediatric pain management with regards different education level and stated that the education level considered factors inflecting pain management. The differences in favor those who are higher education, that is, nurses with low level of education is significantly associated with nurse's knowledge (positive correlation).

CONCLUSIONS

An educational training program is effective in improving nurses' knowledge and practices about pain-related management for children with burns injuries. Findings from this study showed that after the training, nurses' knowledge and practice toward pain management were enhanced and not affected by time.

ETHICAL CONSIDERATIONS COMPLIANCE WITH ETHICAL GUIDELINES

This study was completed following obtaining consent from the University of Baghdad and ministry of health.

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AUTHOR'S CONTRIBUTIONS

Study concept, Writing, Reviewing the final edition by all authors.

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REFERENCES

Bayat, Ahmad; Ramaiah, Ramesh; Bhananker, Sanjay M (2014). Analgesia and sedation for

children undergoing burn wound care. Expert Review of Neurotherapeutics, 10(11), 1747–1759. doi:10.1586/ern.10.158

David, G., & Greenhalgh, M., D. (2019). Management of Burns. The new england journal of medicine. 380(24). 2349

Gatea, A. A., Niazi, S. M., Pakzad, R., Mohammadi, M., & Abdullah, M. A. (2019). Epidemiological, demographic and outcomes of burns among females at reproductive age in Baghdad/Iraq. International journal of burns and trauma, 9(2), 41,42, 44. Available at: http://www.IJBT.org . ISSN:2160-2026/IJBT0090891

Gill P, Falder S. Early management of paediatric burn injuries. J Pediatr Child Health. 2017;27(9):406–14. https ://doi.org/10.1016/j.paed.2017.03.011.

Jaya, A.A.G.P.S., Anggreni, A.A.A., Senapathi, T.G.A. 2018. PAIN MANAGEMENT IN BURN INJURY. Bali Journal of Anesthesiology 2(3): 72-76. DOI:10.15562/bjoa.v2i3.86

Klein MB. Thermal, chemical, and electrical injuries. In: Grabb and Smith's Plastic Surgery. Seventh Edition. Thorne CH (Ed). Philadelphia, Lippincott Williams & Wilkins, 2014, pp 127–41.

Norambuena C, Yañez J, Flores V, Puentes P, Carrasco P, Villena R. Oral ketamine and midazolam for pediatric burn patients: a prospective, randomized, double-blind study. J Pediatr Surg. 2013;48(3):629–634.

World Health Organization. Burns [Internet]. Geneva: World Health Organization. Available from: https://www.who.int/news-room/fact-sheets/detail/burns. Accessed 20 Aug 2021.

Nelson, Sarah; Conroy, Caitlin; Logan, Deirdre (2018). The Biopsychosocial Model of Pain in the Context of Pediatric Burn Injuries. European Journal of Pain, (), –. doi:10.1002/ejp.1319 treatment. *Pain Medicine*. 2018 April; 19(4): 708–34. DOI: 10.1093/pm/pnx228

Macintyre PE, Schug SA. Acute Pain Management: A Practical Guide. Fourth Edition. Boca Raton, CRC Press, Byers et Stoddard et al., 2002al.,2001 Byers et al.,2015, pp 1-27