

Effectiveness of Intervention Program on Nurses' Practices about Care of Children during Febrile Convulsion

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ABSTRACT

This study was objected to evaluate the effect of constructed program on the nurses' practices regarding the care of children during febrile convulsions. A quasi-experimental design (two groups) was utilized to guide the investigation study group and control group. It was applied by using (pre-test, post-test I & II design), non-probability of (42) nurse participated from Hospital for Maternal and Children, throughout the period 12th of September 2021 to 6th of October 2022. The constructed program based on previous literatures review that related to study purpose. The study instrument composed of nurses' socio-demographic data and questionnaire of (16) items to assess their practices for children with febrile convulsion, a self-report method was used to collect the data. SPSS program was used to analyze the data of the study through percentages, mean, standard deviation, and t-test. The study findings showed a statistical significant difference in nurses' practices scores between pre-test and post-test at ($p=0.000$) after the constructed program. However, no statistical significant difference in practices scores between post-test I and II at ($p=0.587$) after 4 weeks. The constructed program can have used as nursing guideline during care of children febrile convulsion, to prevent complication of febrile convulsion and reduce the burden of care.

Keywords: Effect, Constructed program, Nurses practices, Febrile convulsion children

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INTRODUCTION

Febrile convulsion, usually brought on by a viral illness, is what causes febrile convulsions. Although the exact mechanism is unknown, it is believed to entail genetics, environmental variables, immaturity of the brain, and proinflammatory cytokines. The primary cause of febrile convulsion is not a sudden increase or fall in body temperature. Verifying that there is no brain infection and that there haven't been any earlier seizures without a fever is part of the diagnosing process. Usually, no blood work, brain imaging, or electroencephalogram (EEG) is required. It's crucial to do an examination to identify the cause of the fever. A lumbar puncture is not always necessary in children who appear to be in good overall health [1].

About 35% of people will experience another febrile seizure. A febrile seizure is a neurological abnormality

that occurs as a result of a peripheral infection, to which the immune system reacts by producing an inflammatory response thereby, inducing a fever and subsequently increasing the core temperature of the body. According to, environmental factors such as the exposure to peripheral infections include bacterial infections in the middle ear and throat and viral infections such as influenza stimulate an inflammatory response, thereby changing the set temperature of the body, resulting in an increase in the core body temperature and subsequently triggering febrile seizures [2]. During a bacterial pathogen-associated molecular patterns (PAMPs) are expressed on the pathogen for example, Lipopolysaccharide (LPS). Pathogen recognition receptors such as Toll-Like Receptors (TLRs) found on the cells, which include macrophages and neutrophils, detect the PAMPs, and activate the innate (natural) immune response which is the second line of defense in the immune system. This line of defense elicits an inflammatory response upon infection [3].

Nurse is the first person to treat the child and should be knowledgeable about using universal precautions. Emergent intervention follows resuscitation and stabilization, and it includes therapeutic interventions like decontamination, antidote administration, and supportive therapy help to treat children during febrile convulsion. So that important done training program

and regular lectures should be provided to nursing staff in order updates their knowledge and practice regarding care of children during febrile convulsion [4-7].

Finally, Encouraging nurses to be enrolled in training sessions to improve their knowledge and practice to keep them up to date about management of children especially in emergency situation decrease mortality and morbidity in children [8-12].

METHODS

Study design

A quasi-experimental design (two groups) was utilized to guide the investigation study group and control group. It was applied by using (two group pre-test, and post-test design) to evaluate the effect of constructed program on the nurses` practices for children who diagnosed during febrile convulsion.

Ethical considerations

Ethical approval was obtained from the Scientific Research Ethical Committee in the College of Nursing University of Baghdad, and from hospitals participating in the study, before collecting the data.

Sample and setting

Effect size medium was used to determine level of statistical significance at P- value 0.05 [8]. The sample size was to be; five nurses participate in pilot study. The study sample was nurses who participate in the program and control group don't participate in the program. The setting for this study was Al-Diwaniyah Hospital for Maternal and Children. These hospitals provide similar standardized care because these hospitals only hospital has emergency department for children in Al-Diwaniyah City was provide health services during febrile convulsion. Eligibility criteria included all nurses who have more than one year of experience, nurses who work at emergency department, nurses with different educational levels, and nurses agreed to participate in the study. All subjects were matched by using non-randomization program to control variables affecting outcome variables. These variables were current relationship with partner, years of work in hospital, years of experience in emergency department, training courses. Thus, this study could decrease the threat to internal validity.

Instrument

The instrument constructed based on previous literatures review that related to study purpose

The demographic data form was developed by the researcher and used to collect demographic data including their (age, gender, marital status, residency, years of work in hospital, years of experience in emergency department, training courses).

Nurses Practices regarding management of children during febrile convulsion used to assess the nurses

practice regarding care of children during febrile convulsion g a questionnaire composed of [13-15] items that constructed main nurses practices the answer were scored according to Likert Scale (Never, Sometimes, Always).

All instruments were reviewed for content validity by 15 Iraq experts for cultural appropriateness. They were also pilot tested with 5 nurses who met the exclusion criteria as subjects in the study. In this study, content validity was tested for the Thai versions of the resilience enhancing nursing program and the handbook guidelines for resilience enhancing. They were examined by 15 experts. The experts were experts from different specialties related to the content of the study .The experts were: faculty members from the College of Nursing / University of Baghdad, faculty members from the College of Nursing / University of Babylon, Experts from Ministry of Health, Children Welfare Teaching Hospital, Expert from Directorate of operations and medical services, Expert from Ministry of Health, Al-Diwaniyah Hospital for Maternal and Children, Expert from Ministry of Health, Baquba Teaching Hospital.

Data collection of procedures

The researcher encouraged the subjects in each procedure. The procedures of the regarding care of children during febrile convulsion could be indicated through details including the researcher recruiting subjects for two group study group and control group at the Al-Diwaniyah Hospital for Maternal and Children. This study was carried out in emergency department in Al-Diwaniyah / Iraq. These one hospitals provide similar guidelines for standardized care children during febrile convulsion. The Hospital was open all time. The intervention program is carried out in the for the period from May11th, 2022 to 29th June, 2022.

The subjects who met the inclusion criteria were invited to participate in this study. The eligible subjects in this study were divided into two groups: Prior to implementing the intervention program, nurse's practices about care of children during febrile convulsion were assessed by using constructed questionnaire, pre-test started before intervention program during the period from May 11th - 13th May 2022. Each nurse took [16] minutes through observation checklist. The study group receive intervention program was started at period from May 15th – 26th May 2022 to the study group at Al-Diwaniyah Hospital for maternal and children. Each nurse took (15-30) minutes to through observation checklist method. After the program was intervention the data was collected from nurses from study group immediately by using observation checklist during the period from May 24th - 26th May 2022. Each nurse took minutes to answer questions, through observation checklist method. The data was recollected again from nurses after 4 week of the performed (Post-test I), by using observation checklist during the period from May 27th - 29 th Jun 2022. The post-test II time as a same time at post-test I during observation checklist for

nurse's about care of children during febrile convulsion.

Data analysis

Descriptive statistics (means, frequencies, standard deviation, and percentages) were used to describe the demographic data.

Inferential statistics were used to compare the mean scores of all dependent variables. The assumptions of normality and homogeneity of variance of the variable were tested using inferential statistics and checked before the appropriate statistical analysis was performed. Significance was set at a p value < 0.05. Analysis of Variance (ANOVA), it was used to determine the significant differences and the significant relationship among nurse's practices with their sociodemographic characteristics.

The guidelines of the program on nurses practices about care of children during febrile convulsion

Actions

First session: (A/)

Introduction of the program

Objectives of the program

Factors affecting body temperature; age, time of the day, exercise, stress, environment

The Relation between Core Temperature and Other Vital Signs; pulse, respiratory, temperature and blood pressure

B/ Watching VDO clip about nurse's care of children with febrile convulsion

Second session: (A/)

Definition of Fever; Fever (Pyrexia), Hyperpyrexia and Hyperthermia

Physiology of fever

Etiology of Fever

Phases of Fever

Manifestations during Fever (Symptoms and Signs).

Classification, Types and patterns of Fever; Sustained, continuous fever, Intermittent fever and Remittent fever.

Phase fever; The first phase (phase of temperature rise and chill), The second phase (fever phase) and Third phase (phase of body temperature falling).

Causes of fever.

B/ Watching VDO clip about nurse's care of children with febrile convulsion

Third session: (A/)

The following activities and topics are performed:

Define of Convulsion

Features of convulsions; sudden onset and abrupt interruption., limited period of time (brief duration,

usually seconds or minutes), a change in motor activity and/or behavior; if repeated, it is usually the same (stereotyped) image, the post-attack period of reduced response usually follows most seizures, with the duration of the post-attack period being proportional to the duration of seizure activity.

Description of some convulsion; absence seizures, tonic-clonic seizures, conic phase, atonic seizure, myoclonic seizure and clonic seizure

Etiology of convulsion; occasional acute symptom or provoked convulsion, with fever and without fever.

B/ Watching VDO clip about nurse's care of children with febrile convulsion

Fourth session: (A/)

Define of Febrile Convulsion

Sings and symptom of Febrile Convulsion

Types of Febrile Convulsion

Admission criteria

Causes of Febrile Convulsion

Infection

Laboratory tests of febrile convulsion

Application of febrile convulsion

Frequent febrile seizures

Advice for parent

Skills application and procedure practice that associated to the lecture

B/ Watching VDO clip about nurse's care of children with febrile convulsion

Fifth session: (A/)

Nursing process for Children with Febrile Convulsions

Assessment

Nursing diagnosis

Planning

Intervention

Nursing interventions during seizure refractory convulsions

Nursing Advise the parent about managing a fever at home interventions after seizure refractory convulsions

B/ Watching VDO clip about nurse's care of children with febrile convulsion.

RESULTS

Characteristics data of the participants

In relation to the subject of "age/years", findings show participants age, the mean age for nurses included in study group is 31.48, the age [17] and (33-34) years old. While, the mean age for nurses included

in control group is 29.81, the age (25-29) years. In regard with the participant's gender, the male nurses were predominated 81.0 % of sample study group but control sample group 52.4% were female gender. In regard residency associated findings, the majority 76.1 of the study sample group were urban (86.7%). While, more than half 52.4 from control sample group were in urban. Likewise, that 57.1% of sample study group at signal status. While 85.7 % [18] of sample control group at marital status. In respect to subject of "educational level", education related findings, the institute nursing & high school nursing were records less than half (38.1%). While, 52.4 (11 %) of sample control group ranged were in institute nursing.

In terms of years of experience, it is obvious among findings that the less than 5 years of experience were records highest percentage (57.1%) of sample study group. 66.7% [14] of sample control group years about (<5 years) of the years of experience. In relation to the Years of experience in emergency department, the majority were less than 5 years of experience and records highest percentage (81.0%) with regard to the sample study group, 76.2% (16) on the control sample group about (<5 years) (Table 1).

Summary statistics of the overall study group practices at the pre-test, post-test I and post-test II measurement n= (21)

Illustrated that the (95.2%) of nurses exhibited never

at apply the pre-test period of measurement M (± SD) =1.147 (± 221) with regard care of children during febrile convulsion. According to, that (100.0%) of nurses expressed always level of overall study group practices at the Post-test I M (± SD)= 2.952 (± 0.0829) and Post-test II measurement M (± SD)= 2.915 ± (± 0.116) with regard care of children during febrile convulsion (Tables 2 and 3).

Measurement and their socio-demographic data (n=21)

Illustrations the statistical person correlation table for the relationship between the overall study group practices at the post-test II measurement and their socio-demographic data at Value ≤ 0.05. The practice results in post-test shows non-significant correlations with all demographic variables, the post-test II results confirmations non-significant correlations with all variables of demographic, however the outcome of post-test II -test display significant correlations with general employments period at value (0.30), level of educational on value (0.024), likewise current working hospital period at value (0.003), up till now there remains non-significant correlations through extra variables of demographic The skills outcomes are artworks that non-significant correlations between the outcomes program (pre, post-test I and post-test II test) with all variables of demographic. These results agree with Aswan V (2018)

Table 1: Demographic characteristics.

Demographic characteristic	Study Group		Control Group	
	F	%	F	%
Age Years				
≤ 24	2	9.5	4	19
25-29	7	33.3	8	38.1
33-34	7	33.3	4	19
≥ 35	5	23.8	5	23.8
Mean ± SD	31.48 ± 5.428		29.81 ± 6.226	
Gender				
Male	17	81	10	47.6
Female	4	19	11	52.4
Marital Status				
Single	12	57.1	3	14.3
Married	9	42.9	18	85.7
Residency				
Urban	16	76.1	11	52.4
Rural	5	23.9	10	47.6
Education Level				
High School Nursing	8	38.1	3	14.3
Diploma	8	38.1	11	52.4
Bachelors	5	23.8	7	33.3
Experience Years in General Hospital				
2 - 5 years	12	57.1	14	66.7
10-Jun	4	19	3	14.3
15-Nov	4	19	4	19
16-20	1	4.8	0	0
Experience Years in Emergency Department				
2 - 5 years	17	81	3	14.3
10-Jun	4	19	16	76.2
15-Nov	0	0	2	9.5

Table 2: Mean of Score; Never Apply (1-1.66); Sometime Apply (1.67-2.33); Always Apply (2.34 – 3).

Measurement	Main Studied Domains	rating	Statistical Parameter				Evaluation
			F	%	M.S.	SD	
During Convulsion	Pretest1	Never	20	95.2	1.174	0.221	Low
		Sometime	1	4.8			
		Always	0	0			
	Posttest1	Never	0	0	2.952	0.0829	High
		Sometime	0	0			
		Always	21	100			
	Posttest11	Never	0	0	2.915	0.116	High
		Sometime	0	0			
		Always	21	100			

Table 3: Pearson Correlation for The Relationship between The Overall Study Group Practices at The Post-Test II

Sociodemographic Data	Pearson Correlation	Sig.(2tailed)
Age / years	0.364	0.1 NS
Gender	0.051	0.82 NS
Marital Status	0.304	0.18 NS
Residency	0.126	0.58 NS
Education Level	0.463	0.03 S
Experience Years in General Hospital	0.235	0.3 NS
Experience years in emergency department	0.149	0.52 NS

he explains in current study remained non-significant association amongst gender, age, religion, and occupation through study result [19]. But This results disagree with portrays that association amongst post-test practice score through selected variables of socio-demographic-age, sex, professional qualification, Clinical Experience, also Present area working then in- program service remained originate to be non-significant at p-value >0.05[20].

DISCUSSION

Through the data analysis distribution of demographic variables, the percentage distribution of participants according to their age groups of this study group and control group reveals that the majority of nurses (n=42) were within thirty years of age, with the average age of the nurses being (33.3%) (25-29) years and (33-34) for the study group sample and control group being (38.1); this suggests that the majority of nurses is from the youth category, and this may be a cause for concern. According to the researchers' perspective, the hospital policy favors hiring active nurses (26–30 years old) in the emergency department because the department needs active, efficient nurses to deal with the different patient admitted to emergency department. believes that the requirement for young adult nurses who can handle the unique job demands of the emergency room can be attributed to these results. These findings are in line with a research [21], which found that the majority of participants (n=51; 43.1%) were under the age of thirty. Furthermore, these results were in line with a study conducted in an emergency unit teaching hospital in the city of Al-Nasiriyah by Suror H. et al. (2020) [8]; the findings of this study showed that the majority of participants (n=100;76%) were under the age of thirty.

Additionally, these results supported an Indonesian study that found the vast majority (n=40; 95%) of individuals were the same results of this study.

From the researcher's perspective, even though the ratio between males and females was relatively close, the difficulty of working in emergency departments requires patience and endurance, and the remaining participants in the study were female. The results of the present study revealed that the distribution of the gender variable is different between the two groups, as there is a high percentage of males in the study group that made up more than three-quarters of the study sample (81%), and the remaining participants in the study were female. This outcome is consistent with an observational research carried out by Gondhalikar, et al. [10]. An evaluation of the plan teaching program's (PTP) impact on health care personnel' understanding of convulsions and how to manage them in a few rural districts of Kolhapur.) in Baghdad, which revealed that the majority (n=148; 63.5%) of participants (nurses) were male while the remaining were female. Furthermore, the findings of the present study differ from those of a study conducted by Naeem, et al. [8] in the Emergency Unit Teaching Hospital in AL-Nasiriyah City, which found that the majority of participants (n=17; 17%) were men. While the proportion of females in the study sample that made up more than half of the control group was high (52%), the study conducted in Iraq by Suror, Fatima, and Abbas in 2020[8] found that the majority of the study sample was made up of females (83%), while the study conducted in Turkey by Gok, et al. [11] found that the majority of the study sample was made up of females an and accounted (85.4%), also these results consistent with the study done by (Ghada, et al., 2013) in Egypt that found a high percentage of nurses were females (85.4%) and the remaining were males

[12]. There is no statistical difference between nurses' knowledge and marital status despite the majority of participants in the study group (62.5%) and nearly the same percentage of married individuals in the control group (65%) being married (p value 0.941). The current study's findings on the single status of the sample showed that the biggest percentage ($n=12$; 57.1%) was single, but that a majority of married individuals were in the control group (85.7%). This finding is consistent with an experimental study conducted in Iran by Sardari, Esmaeili, Ravesh, and Nasiri (2019), which found that 69.7% of participants were married [13]. Additionally, the findings of the current study were compared to those of a 2016 Egyptian study by Qalawa and El-Ata that showed, which revealed that majority (93.9%) of participants was married. While on the control group, the majority of the sample were married status (60%), this finding agrees with a study conducted in Iraq by Suror, et al. [8]. Moreover, it is supported by (Nahla et al., 2022) in Egypt that finds the majority of the sample (93.0%) were married status. According to the findings of the current study, high school nurses and institute nurses made up the majority of the sample in the study group (38.1%). This finding is in line with a study conducted by Suror et al. (2020) in Iraq at the Emergency Unit Teaching Hospital in the city of Al-Nasiriyah, which showed that the majority of participants ($n=32$; 32%) had graduated from high school as a nurse [8]. The results of a different survey conducted in Egypt's Menoufia University College of Nursing by, which found that the majority of participants ($n=22$; 45.8%) possessed diplomas, were in agreement with the findings of the current study [12]. Additionally, these results were in line with a research conducted in Alexandria, Egypt, in 2022 by that found the highest percentage of participants ($n=24$, or 33.8%) have a diploma in nursing. The majority of the sample in the control group (52.4%) were nursing institute members, in contrast to a study conducted in Egypt by that found the high majority of the sample (45.8%) to be nursing institute members [12]. Additionally, it is supported by (Walsh, et al., 2005) in medical wards of a metropolitan pediatric hospital, which found the majority of the sample (58.8%) to be nursing institute members, while these results by in Korea which was in conducted that shows the majority of the sample 94 (43.5) were 2-Year [14]. The researcher's opinion in these results is the percentage of those whose educational level is a secondary nursing school and nursing institute is more than the college of nursing, masters or PhD, because number of the nursing schools and institutes, more than the number of the nursing colleges in Iraq. The study group and control group revealed that the highest percentage of participants ($n=12$; 57.1%) had more than half or equivalent to five years of experience in nursing. The results of this study were consistent with those of a study by, which found that ($n=21$; 47.7%) of participants had fewer than or equivalent to five years of nursing work in Egypt. The results of the current study also concurred with a study conducted in Iraq's AL-Nasiriyah city's Emergency Unit Teaching Hospital

by Suror et al. (2020), which found that the majority of participants ($n=60$; 60%) had fewer than five years of nursing experience [8]. Additionally, the findings of the study group were in agreement with a Korean study that found the majority of participants had fewer than five years of experience. Additionally, this conclusion is congruent with a study conducted in Sudan by, which showed that the majority of participants ($N=75$ (35.0) %) obtained the same outcome. This finding contrasts with a study done in Turkey by which found that the majority ($n=20$; 41.6%) had worked as a nurse for more than ten years [12]. Additionally, it differs from a different cross-sectional study conducted by Anne et al. (2006) in Sydney, Australia, which found the largest percentage of participants ($n=25$; 12.44%) having 5 years or more of nursing work.

Additionally, the findings of the study group were in agreement with a Korean study that found the majority of participants had fewer than five years of experience [14]. Additionally, this conclusion is congruent with a study conducted in Sudan by, which showed that the majority of participants ($N=75$ (35.0) %) obtained the same outcome [15]. This finding contrasts with a study done in Turkey, which found that the majority ($n=20$; 41.6%) had worked as a nurse for more than ten years [12]. Additionally, it differs from a different cross-sectional study conducted by Anne et al. (2006) in Sydney, Australia, which found the largest percentage of participants ($n=25$; 12.44%) having 5. years or more of nursing work. And these results are the same line with a study done by in Australia that showed the majority of the sample (56%) were from (1-5) years. In the control group, the majority of the sample (76.2%) were within 5-10 years' experience in the nursing emergency department, this result agrees with the study by which was conducted in Iran that showed the majority of the study sample (33.8%) were from 5-10 years of experience [15]. Also supported with a study done by which was conducted in Ethiopia that shows the majority of the sample (65.9%) were (5-10) years of experience [16].

Illustrated that the (95.2%) of nurses exhibited never at apply the pre-test period of measurement $M (\pm SD)=1.147 (\pm .221)$ with regard care of children during febrile convulsion. According to, that (100.0%) of nurses expressed always level of overall study group practices at the Post-test I $M (\pm SD)=2.952 (\pm .0829)$ and Post-test II measurement $M (\pm SD)= 2.915 \pm (\pm 0.116)$ with regard care of children during febrile convulsion.

These results agree with a study conducted by in Mansoura, Egypt which shows that there is a statistically significant improvement in the nurse's knowledge regarding care of children with febrile convulsion (during convulsion) such as; put the child on a soft and safe place, put the child on his/her side, observe seizure manifestations and duration, put something in his/her mouth and remove secretion from the child's nose and mouth, state the majority of the critical care nurses

had inadequate practice as protest score, which has improved after the educational program introduction where the majority of critical care nurses had adequate practice post-test score [17]. Also, these results agree with a study conducted by in Egypt which shows there is a statistically significant improvement in the nurse's practice regarding care of children during fit, pre post of inadequate nursing intervention were (7.0 %), while post-test nursing intervention were 88.7% adequate nurse's practice [18].

The statistical assessment of the study group practices at (pre-test, post-test 1, post-test 2) measurement (n=21) about care of children with febrile convulsion during convulsion, the outcome pre-test results usually greatest of the samples that are never of applying several procedures of during convulsion, however after applications the program demonstrations that the post 1 and post 2 are greatest

of the samples are capable to always applying several procedures of during convulsion at always during observation, and this results in observing a significant change in nurses practice after the interventional program. These results agree with that shows control group there are no statistically significant differences in (post-test1 and 2), the chief issues which remained related by poor practice that remained assignment also local guidelines lack [21].

CONCLUSION

Based on the study's findings, the conclusion is drawn, discussed, and a list of the most crucial recommendations that could aid in developing a strategic plan for the emergency department at Al-Diwaniya Maternity and Pediatric Teaching Hospital's nursing staff practices regarding the care of children experiencing febrile convulsions is provided. The study's findings show that nurses with a high school nursing degree and an institute nursing degree achieved the highest practice scores, and that nursing staff who participated in training courses as a study group benefited from the program more than others because training increases the likelihood that trainees will learn the most recent information about how to treat children with febrile convulsions.

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