Effectiveness of Educational Program on Nurses-Midwives' Preventive Measures about Puerperal Sepsis at Baghdad Maternity Hospitals

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Abstract

Objective: To evaluate the effectiveness of the educational program on nurses-midwives' preventive measures about puerperal sepsis.

Method: quasi-experimental study design carried among 60 Nurses and Midwives chosen by non-probability sample (purposive sample) at maternity hospitals. The data collected by the observation checklist Pretest and posttest after the implementation of the educational program. Data were analyzed using descriptive statistical data analysis approach of frequency, percentage, mean, mean of scores, a total of scores, range and standard deviation and inferential statistical data analysis approach T-test, multiple linear regressions, person correlation coefficient, and analysis of variance (ANOVA).

Results: (35.3%) of them at age 20-29 years old, (75%) of them had secondary nursing school graduate level of education and (35%) of them had 11-15 years of services in the nursing field. there is a highly significant difference at $P < 0.01$ between the initial period of Pretest and posttest of the study sample preventive measures toward puerperal sepsis. The grand mean at pretest was (1.69) and at posttest (2.38). There is a statistically significant difference between years of service and preventive measures at posttest and Pretest of the educational program at (p-value > 0.05).

Conclusion: there is an improvement in the nurses-midwives' preventive measures level at the periods of tests after the implementation of the educational program.

Keywords: *Effectiveness, Educational Program, Nurses-Midwives, Preventive Measures, Puerperal Sepsis.*

Introduction

Puerperal sepsis is a significant preventable reason for maternal mortality, representing roughly 11% (95% vulnerability interval 5.9%–18.6%) of maternal mortality internationally. Improved comprehension of maternal sepsis is vital to accomplishing the feasible advancement goals (SDGs) and executing systems toward closure preventable maternal and neonatal mortality [1, 2].

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Puerperal sepsis is one of the five leading reasons for maternal mortality around the world and records for 15% of all maternal mortality. The WHO presented the term postpartum infections, which likewise include non-genital infections in the obstetric populace. Puerperal sepsis is a significant reason for morbidity and mortality for moms in developing countries. It is one of the commonest reasons for maternal deaths [3].

In any case, the recurrence of PIDs in pregnancy is ineffectively comprehended; records of obstetric morbidity recognized no distributed deliberate writing survey of (systematic literature review) of infection rate, making it the one significant direct reason for maternal morbidity without such literature as far as

anyone is concerned. Ongoing 2017 Worldwide Weight of Ailment (GBD) information gauge 12.1 million occurrence instances of maternal sepsis and other maternal infections, including mastitis [4, 5].

Puerperal sepsis represents 15% of maternal dead women around the world. In Africa, puerperal sepsis is the 2nd significant reason for maternal morbidity and deaths, representing over 10% of maternal dead women [2].

Health training and education have been a basic piece of nursing for a considerable significant period. Training of health givers and patients is as significant currently as could be. The nurses need to know the terms of health instruction programs and the pedagogical role of the nurse has the option to give wellbeing instruction to patients [6].

Methodology

A quasi-experimental study was conducted to evaluate the effectiveness of the educational program on nurses-midwives´ knowledge and preventive measures about puerperal sepsis at delivery rooms in Baghdad maternity hospitals conducted from January 24th, 2019 to May 20th, 2020. The study sample was nonprobability "purposive sample" includes (60) nurses-midwives working at delivery rooms in Al-Elwia maternity teaching hospital, Ibn Albalady maternity and pediatric hospital, Al-Karckh maternity hospital, Al-Yarmouk Teaching Hospital, and Baghdad teaching Hospital. A questionnaire composed of two parts (demographic data and the third part about preventive measures of puerperal sepsis items). Content validity of the questionnaires is determined through a panel of (25) experts, and reliability of the questionnaire is based on the test-retest for the stability reliability (reliability coefficient 0.76 for knowledge and 0.83 for preventive measures). The process of gathering information was conducted from January 20th to August 18th, 2019 it included (Pretest, implementation of the educational program, posttest). Data were collected using an observation checklist for preventive measures. Data were analyzed through the application of descriptive and inferential statistical data analysis (SPSS) version 20. Through descriptive statistics (frequency, percentage, mean, mean of scores, a total of scores, range, and standard deviation) and statistical inferential (T-test, multiple linear regressions, person correlation coefficient, and analysis of variance ANOVA).

Results were determined as highly significant at ($P \leq 0.01$) significant at ($P \leq 0.05$) and non-significant at ($P > 0.05$).

Results

Table (1) Distribution of the Study Sample by their Demographic Characteristics

Variables		Frequency	Percent
Age (years) Mean & standard deviation (35.783±10.294)	20-29	23	38.3
	30-39	14	23.3
	40-49	18	30.0
	50 and more	5	8.3
	Total	60	100
Level of education	Secondary nursing school graduate	45	75.0
	Nursing institute graduate	14	23.3
	Nursing college graduate	1	1.7
	Total	60	100
Years of services in the nursing field	1-5	5	8.3
	6-10	20	33.3
	11-15	21	35.0
	16 and more	14	23.3
	Total	60	100

This table shows that (35.3%) of the study sample at age 20-29 years old, (75%) of them had secondary nursing school graduate level of education and (35%) of them had 11-15 years of services in the nursing field.

Table (2) Comparison between the Nurses-Midwives' Preventive Measures about Puerperal Sepsis at pretest and posttest

No.	Domains	Pretest		Posttest	
		Mean	Ass.	Mean	Ass.
1	Prepare tools	1.9	M	2.39	H
2	Prevention and control of infection	1.69	M	2.39	H
3	Midwife Preparation for the woman	1.69	M	2.39	H
4	Method of sterilization and disinfection	1.47	L	2.38	H
5	Postpartum prevention	1.43	L	2.35	H
6	Grand mean	1.69	M	2.38	H

M= mean, Ass. = assessment, level of assessment: (1-1.66) = low = L, (1.67-2.33) = moderate = M, (2.34-3.00) = high = H

This table indicates that the grand mean of the study sample preventive measures toward puerperal sepsis is (1.69) at a moderate level at pretest, and (2.38) at a high level at posttest

Table (3): Study Sample preventive measures toward Puerperal Sepsis Levels of Assessment Through the "Mean of Score" Among (Pre, Post Test)

Period	Level of Assessment	Frequency	Percent
Pretest	Low (1-1.66)	32	53.3
	Moderate (1.67-2.33)	28	46.7
	High (2.34-3)	-	-
	Total	60	100
	$\bar{x} \mp S.D$	1.69±0.14	
Posttest	Low (1-1.66)	-	-
	Moderate (1.67-2.33)	16	26.7
	High (2.34-3)	44	73.3
	Total	60	100
	$\bar{x} \mp S.D$	2.38±0.107	

$\bar{x} \mp S.D.\bar{x} \mp S.D.$=Arithmetic Mean ($\bar{x}$)$\bar{x}$) and Std. Dev. (S.D.)

There is a low level of assessment of 32 (53.3%) of the study sample at level (1-1.66), the **$\bar{x} \mp S.D.\bar{x} \mp S.D.$** are (1.69±0.14) at the pretest. While it is a high level of assessment of 44 (73.3%) of the study sample at level (2.34-

3), the $\bar{x} \mp S.D.\bar{x} \mp S.D.$ are (2.396±0.086) at the Posttest.

Table (4) Significant Comparison of the Period (Pre and Post) for Nurses' Preventive measures toward Puerperal Sepsis

Variables	Periods		Matched Paired t-test	Sig. P- value	C.S.
Preventive measures	Pretest	Posttest	-50.264	0.000	HS

C.S. : Comparison Significant, Highly Significant at P < 0.01

There is a highly significant difference at P < 0.01 between pre and posttest of preventive measures toward puerperal sepsis.

Table (5): Distribution and difference of nurses preventive measures with their age, education level, and years of experience.

Variable		preventive measures test periods	
Age	**No.**	**Pretest Mean ± S.D.**	**Posttest Mean ± S.D.**
20-29	23	1.72±.176	2.40±.105
30-39	14	1.69±.098	2.40±.080
40-49	18	1.66±.123	2.35±.120
50 and more	5	1.66±.126	2.33±.121
Total	60	1.69±.141	2.38±.108
ANOVA		F =0.585	F =1.615
		d.f.=59	d.f.=59
		P =0.627	P =0.196
Education	No.	Pretest Mean ± S.D.	Posttest Mean ± S.D.
Secondary nursing school graduate	45	1.66±.114	2.38±.101
Nursing institute graduate	14	1.78±.182	2.40±.12
Nursing college graduate	1	1.64±.00	2.19±.00
Total	60	1.69±.141	2.38±.108

Cont... **Table (5): Distribution and difference of nurses preventive measures with their age, education level, and years of experience.**

ANOVA		F =4.442	F =1.959
		d.f.=59	d.f.=59
		P =0.016	P =0.15
Years of service	No.	Pretest Mean ± S.D.	Posttest Mean ± S.D.
1-5	10	1.70±.137	2.41±.091
6-10	21	1.70±.158	2.37±.122
11-15	21	1.71±.146	2.35±.073
16 and more	8	1.59±.081	2.29±.120
Total	60	1.69±.141	2.38±.108
ANOVA		F =1.305	F =3.302
		d.f.=59	d.f.=59
		P =0.282	P =0.027

No. = Number of frequencies, S.D.=Standard deviation, ANOVA= Analysis of Variance, F = Fisher test, d.f. = degree of freedom, P = probability value, NS : Non Significant at P > 0.05 , S : Significant at P < 0.05 , HS : Highly Significant at P < 0.01.

There is no statistically significant difference between age and preventive measures at pretest and posttest of the educational program at (p-value > 0.05)

While there is a statistically significant difference between education level and years of service with preventive measures at the pretest of the educational program at (p-value > 0.05).

Discussion

Regarding to the socio-demographic characteristics of the study sample in Table (1). The results show that (35.3%) of the study sample at age 20-29 years old. This result agrees with the findings of (Fashafsheh, Ayed, Eqtait & Harazneh, 2015) in their study, they found that (64.2%) of the nursing staff their age (20-30) years [5]. (Momoh, Ezugworie, & Ezeigwe, 2010) found that in their study about half of the sample aged from 38-47 years old [7]. Also Kebalepile (2001) found that the nurses' age was from 30-39 years [8].

Concerning the educational level, (75%) of them had secondary nursing school graduate level of education. (Fashafsheh, Ayed, Eqtait & Harazneh, 2015) disagree with our finding they found the majority of the study sample have a Diploma and Bachelor graduate in nursing [5].

Most of them had 6-15 years of services in the nursing field. Fashafsheh, Ayed, Eqtait & Harazneh, 2015) supported our finding they found most of the study sample had years of experience (6-11) years [(5)]. While these results not consistent with the finding of Kebalepile (2001) they found the nurses had experienced more than 15 years [8].

In the Table (2) the study sample preventive measures toward puerperal sepsis at Pretest at a low level. The grand mean of the study sample preventive

measures toward puerperal sepsis is (1.69) at a moderate level**.**

Also, (Fashafsheh, Ayed, Eqtait & Harazneh, 2015) found that (91.1%) of the nursing staff had good preventive measures level [5]. These findings supported our findings.

In Table (2) the study sample preventive measures toward puerperal sepsis at posttest. The grand mean of the study sample preventive measures toward puerperal sepsis is (2.38) at a high level.

The findings of the present study indicate that the nurses´ level of preventive measures is enhanced or improved to a good level of preventive measures at posttest. This finding agrees with Kebalepile (2001) findings, a majority 46 (71%) mentioned the use of sterile gloves during delivery, 43(66%) will use sterile delivery packs and ensure, 49 (75%) of nurses have demonstrated good preventive measures on measures to take in the prevention of postpartum infections [8].

The point of view of the researcher related to the present study considers that the educational program affects the level of preventive measures.

Educational programs are very important to all nurses in different filed of nursing specialty. Nursing research adds new information that is used in theoretical and practical nursing fields. it is used in the practical field, which improves the experience and preventive measures of nurses and thus increases the experience in finding problems facing nursing staff, finding suitable solutions, and acting appropriately to avoid obstacles in work and nursing care. Therefore, it is necessary to enroll nursing staff in theoretical and practical training sessions to develop their skills in patients care.

Regarding the two periods of educational program implementation on the study group in Table (3), the findings revealed that the level of nurses´ preventive measures toward puerperal sepsis has been developed by the implementation of the educational program to be at a good level. This results inconsistent with the result of Bayoumi and Mahmoud, (2017) they found that the nurses level of preventive measures had been improved after the implementation of an educational program [1].

In Table (4), the study sample preventive measures toward puerperal sepsis high significant difference at P <0.01 between the initial period of pre and posttest of the study sample. This result agrees with the findings of Kaur & Jairus (2015) they found that there was a significant difference between the means of the Pretest and posttest [9].

Results indicate that there is a significant statistical relationship between the study sample preventive measures at the pretest period and their level of education and between years of service and preventive measures at the posttest of the educational program at (p-value > 0.05). There is no significant statistical relationship between the study sample preventive measures at the pretest and posttest of the educational program and their socio-demographic characteristics (age).

(Fashafsheh, Ayed, Eqtait & Harazneh, 2015) found that there are no statistically significant differences between mean preventive measures scores towards age, years of experience [5].

This result may be related to the different levels of education and most of them graduate from secondary nursing school. The educational level of nurses may play a role in the results of any program which improves nurses´ preventive measures.

Conclusion

The educational program improves the preventive measures toward puerperal sepsis. The grand mean at pretest was (1.69) and at posttest (2.38). There is a highly significant difference at P < 0.01 between the initial period of pretest and posttest of the study sample preventive measures toward puerperal sepsis. There is a statistically significant difference between years of service and preventive measures at the posttest of the educational program at (p-value > 0.05). there is a statistically significant difference between education level and preventive measures at the Pretest of the educational program at (p-value > 0.05).

Recommendation

Implementation of the educational program about the prevention of puerperal sepsis for nurses-midwives on how to work in the delivery room. Follow up and evaluation of nurses' intervention toward women in the

labor Room and postpartum period and find the obstacles and work to solve them.

Conflict of Interest: Nil.

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