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Effectiveness of an educational program on nurses- midwives' knowledge regarding nursing measures for uterotonic drugs use in Al_Kut City Hospitals

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Abstract---Objectives: To determine the effectiveness of utero-tonic drugs use educational program on nurses- midwives' knowledge and to predict the variables which may affect their knowledge. Method: A quasi experimental study was conducted from 1st May 2021 to 10th March 2022 in two hospitals at al- kut city on nurses and midwives who work at maternity hospitals. Non- probability (Convenience sampling) was used to collect the data from select 65 nurses and midwives, (32) of them for study group and (33) for control group. A questionnaire is an instrument to collect the demographic, occupational information and knowledge which consists of 40 items. An educational program is designed to involve two components which are: General information about utero-tonic drugs and Common use drugs (indication, side effects, contraindications, complications from misuse, and nursing interventions). and it was implemented on the study group only. Pretest and post-test had been conducted before and after the implementation of program for both groups. Validity of content was determined through reviewing it by (13) experts and reliability of tools was determined through a pilot study. descriptive and inferential statistics were used to analyze the data. Results: The results of study indicated that nurses – midwives' knowledge assessment before the implementation of program for both study and control groups was low related to utero-tonic drugs use There were high significant differences in participants' knowledge at pretest and post-test for study group which exposed to program implementing. The study findings showed that program had been an effective method of increasing the nurses – midwives' knowledge about nursing

measures related to Utero-tonic Drugs. An age, social status, variable was significant effect on nurses – midwives' knowledge for study groups, and there were highly significant differences between pre and post implementation of the program. Establish program as training courses concerning nursing measures about uterotonic drugs use for all nurses and midwives who work at maternity hospitals in al-kut city hospitals. Conclusion: The knowledge of maternity nurses about uterotonic drugs improved between the pretest and post-test, as evidenced by the pretest and post-test knowledge scores.

Keywords---effectiveness program, nursing measures, uterotonic drugs, nurses-midwives knowledge.

Introduction

For many women, labour and giving birth is a life-changing experience. In interacting with all women, nurses must be respectful, available, encouraging, helpful, and professional. Comfort measures, emotional support, information and education, advocacy, and support for the partner should all be included in the nursing care of labor and birth. (Simkin & O'hara, 2002). For millennia, the failure of the uterus to contract and retract after childbirth has been recognized as the most common cause of postpartum hemorrhage (PPH), which affects up to 10% of births around the world. In developing countries, PPH is responsible for one maternal death every seven minutes (Potts, Prata et al. 2010). Because problems might arise at any time during birth, it's critical to keep an eye on the laboring lady and her fetus while also offering emotional support to her and her family. Even when everything is going smoothly, the hours of labor are stressful. If a difficulty emerges and assurances cannot be offered as freely, it is even more critical that a woman has someone who is both educated about the deviation and the necessary steps, as well as sympathetic to her sense of helplessness and the necessity to adjust her birth plan. Nurses are uniquely qualified to provide this type of care since they are trained in both physical and mental care (Zielinski, Brody, Low, & Nursing, 2016). Pregnancy and childbirth-related disorders claimed the lives of an estimated 303 000 women and adolescent girls in 2015. Complications during labor and childbirth cause more than a third of maternal deaths, half of stillbirths, and a quarter of newborn deaths (Lawn et al., 2016). The majority of these deaths occur in low-resource settings and may be avoided if timely interventions were implemented (WHO, 2019). Preventing poor birth outcomes requires careful monitoring of labor and childbirth, as well as early detection and treatment of problems. When compared to antenatal or postnatal care techniques, improving the quality of care around the time of birth has been found as the most effective strategy for reducing stillbirths and maternal and neonatal mortality (Bhutta et al., 2014). Improving birthing care to avoid PPH is a critical step toward meeting the third Sustainable Development Goal's (SDG 3) health targets, particularly target 3.1: reduce global maternal mortality to less than 70 per 100 000 live births by 2030. Efforts to prevent and reduce PPH-related morbidity and mortality can aid in the resolution of worldwide imbalances in maternal and perinatal health. Experienced health professionals, health managers, policymakers, and other stakeholders will need up-to-date, evidence-

based recommendations to guide clinical policies and practices in order to achieve this (Moran et al., 2016).

Methodology

From May 1, 2021, to March 10, 2022, a quasi-experimental design was used throughout the study, using a pretest and post-test method on nurses and midwives for both the study and control groups regarding uterotonic medication usage educational information. The data was collected from participants (nurses and midwives) who work at maternity hospitals in al-kut city hospitals using non-probability (convenience sampling)., 65 nurses and midwives were selected, (32) of them for a study group and (33) for the control group. Dropouts of the sample were five participants to be the entire sample consisted of (60) nurses and midwives, (30) of them for each group. The following criteria were used to select the study sample: Nurses-midwives who work morning and night shifts, have varying levels of education, and work inwards, such as birth rooms, maternal wards, and maternal monitoring, and who agree to participate in the study. The samples were exposed to a pretest to assess knowledge in both the study and control groups, after which the researcher implemented the program on the study group exclusively. At the same time, a post-test was administered to both the study and control groups. A program is constructed to contain two components which are: General information about uterotonic drugs and Common use drugs (indication, side effects, contraindications, complications from misuse, and nursing interventions). Instrument is constructed relative to the program to determine the assessment of the program on nurse midwives' knowledge concerning uterotonic drug use education. The questionnaire was a research tool that consisted of three parts: demographic information, occupational information, and general knowledge of uterotonic medicines. It included (40) multiple-choice questions. The rating score of response options was (2) for a truth answer and (1) for a false answer with a cut-off point (1.5). The program and the instrument's content validity are determined through panel of (13) experts. A pilot study was conducted before starting actual data collection on (10) nurses and midwives who work at Gynecology and Maternity Teaching Hospital in Al-Kut city hospitals. The pilot study was conducted to find out whether the items of questionnaire were clearly understood, applicable and to determine the reliability and to estimate the time required for the interview. The reliability of instrument was determined through the test and re-test approach, with distance period two weeks between these tests. The result of the reliability was ($r_1 = 0.934$) with Pearson correlation coefficient was calculated ($r = 0.876$) for knowledge items. Statistical procedures were employed to examine the data, with descriptive (frequency, mean, percentage, standard deviation) and inferential (pearson correlation, T-tests) statistics with a p-value less than 0.05 being considered significant.

Results

Table (1): Distribution of Demographic and occupational Characteristics of study sample

Characteristics	Study group		Control group	
	f	%	f	%

Age (years)	20 – 24	15	50	16	53.3
	25 – 29	3	10	2	6.7
	30 – 34	1	3.4	3	10
	35 – 39	3	10	2	6.7
	40 – 44	4	13.3	4	13.3
	45 ≤	4	13.3	3	10
	Mean ± SD	29.30± 9.233		30.53± 10.352	
Educational level	Nursing school	2	6.7	1	3.3
	Nursing secondary	2	6.7	5	16.7
	Midwifery secondary	16	53.3	17	56.7
	Nursing institute	0	0	0	0
	Midwifery institute	9	30	7	23.3
	College	1	3.3	0	0
Social status	Unmarried	12	40	12	40
	Married	16	53.4	16	53.4
	Widowed	1	3.3	0	0
	Divorced	1	3.3	2	6.6
Years of experience (years)	≤ 1	14	46.7	12	40
	1 – 4	3	10	5	16.7
	5 – 9	7	23.3	7	23.3
	10 – 14	4	13.3	4	13.3
	15 – 19	0	0	0	0
	20 ≤	2	6.7	2	6.7
	Mean ± SD	5.23 ± 6.415		5.40 ± 6.003	
Participating in training course	No	16	53.3	10	33.3
	Yes	14	46.7	20	66.7

Table (2): Analysis of Variance for Nurse-midwives' Knowledge with regard to their demographic and occupational characteristics among Study and Control Group (Post-test)

Variables		Study Group (N=30)						Control Group (N=30)				
Independent	Dependent	Sources	Sum of squares	df	Mean Square	F	Sig.	Sum of squares	df	Mean Square	F	Sig.
Age	Nursing measures for use of utero-tonic drug	Between Groups	58.762	5	11.753	3.756	.012	4.283	5	.857	.392	.849
		Within Groups	75.104	24	3.129			52.417	24	2.184		
		Total	133.867	29				56.700	29			
Educational level		Between Groups	1.762	4	.441	.201	.936	9.211	3	3.070	.640	.596
		Within Groups	54.938	25	2.198			124.655	26	4.794		
		Total	56.700	29				133.867	29			
Social Status		Between Groups	42.117	3	21.058	6.197	.006	5.846	3	1.949	.996	.410
		Within Groups	91.750	27	3.398			50.854	26	1.956		
		Total	133.867	29				56.700	29			

Years of experiences	Between Groups	34.152	4	8.538	2.141	.105	1.855	4	.464	.211	.930
	Within Groups	99.714	25	3.989			54.845	25	2.194		
	Total	133.867	29				56.700	29			

Table (3): Significant Differences in Nurse-midwives' Knowledge with regard to Pre-test and Post-test among Study and Control Group

Knowledge	Group	Pre-test					Post-test				
		Mean	t	df	p-value	Sig.	Mean	t	df	p-value	Sig.
Nursing measures for use of uterotonc drug	Study	14.40	.383	29	.705	N. S	19.10	18.489	29	.001	H. S
	Control	14.27					11.27				

Discussion

Table (1) shows that the largest percentages (50%) and (53.3%) of nurses and midwives were found in the study and control groups, respectively, and within age ranges (20-24 years old), with mean and standard deviation (SD) of age for both groups being (29.309.233) and (30.5310.352), respectively. This result is consistent with the findings of a study conducted by (Mohamed, Desoky et al. 2019): who found that the average age of participants was (25.25.8) years with a standard deviation. The results of this study contradict those of (Bulndi, Seljul et al. 2017), which reported the range of age groups was (41-50 years). The highest percentage (53.3%) of the subjects in the study group were graduates from midwifery secondary. In comparison, the highest percentage (56.7%) of the participants in the control group were also have midwifery secondary graduated, as shown in table (1). this may be the cause of they have poor knowledge scores in some domains. These results agree with Muzeya,F. (2015) who mentioned study revealed that two-thirds of studied nurses had secondary nursing education. The present study revealed that the highest percentage related to social status (53.4%) of study sample were equal in both the study and control group, and they were married, as shown in table (1). The findings of the present study are consistent with those of (Wake and Wogie , 2020), who reported that the majority of respondents (67.6%) were married while (24.8%) were single, and (6.5, 1.2) for Divorced and Widowed, respectively. The result shows that (46.7%) and (40%) respectively, for both study and control groups were had (≤ 1) years with mean and standard deviation (SD) of experiences years for both study and control groups were (5.23 ± 6.415) (5.40 ± 6.003), respectively as shown in table (1). This result was inconsistent with those of (Natarajan, Ahn et al. 2016), who stated that the length of experience was: 0-9 years (72%), 10-19 years (20%), 20-29 years (5%), and >30 years (3%). Most participants have (≤ 1) years of experience because most nurses- midwives who went to complete medical gradient do not return again to the same place and search for another place. Nursing is a profession that needs lifelong learning to keep up with the struggle of dynamic healthcare settings surrounding nursing practices in the current century. Nurses need continuous education to provide a safe level of practice and expand their

level of competency as professionals. Therefore, the nurses who strive to provide safe, quality patient care must continuously seek to expand their professional knowledge and practice (Masters K., 2014). The present study's finding shows that the highest percentage (46.7%) of subjects in the study group were not participating in a training course, while (66.7%) of the control group were participating in the training course, as shown in table (1). So, the present study results agree with Faiza, (2015) who assess the knowledge and practice of nurse-midwives who reported that one-third of studied nurses received training courses. The present study indicates a significant difference in nurse-midwives overall knowledge regarding their age, social status, among those in the study group at $p\text{-value} = .006$ as shown in table (2). The study also found that the study and control groups had extremely significant differences in nurse-midwives' understanding of the pretest and post-test as shown in table (3). The results of the study was consistent with (Mohamed, Desoky et al. 2019), which revealed that the overall percentage of adequate knowledge of nurses related to uterotonic drugs given improved with a significant difference after the intervention program (Mohamed, Desoky et al. 2019). Also, the present study's findings are consistent with those of (Esmail Shady, Ibrahim et al. 2020), who mentioned that There is a highly statistically significant difference between pre & post-test regarding complete knowledge and practices of studied maternity nurses regarding oxytocin drugs $p\text{-value}$ of 0.001 for both. The knowledge of maternity nurses about uterotonic drugs improved between the pretest and post-test, as evidenced by the pretest and post-test knowledge scores (Esmail Shady, Ibrahim et al. 2020).

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