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Original Research Article

A study to evaluate the effectiveness of video assisted teaching programme on knowledge regarding intra uterine balloon tamponade in management of pph among staff nurses working in selected hospitals of Mysuru city

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ABSTRACT

A Quasi experimental study to evaluate the effectiveness of Video assisted teaching programme on knowledge regarding use of Intra Uterine Balloon Tamponade in the management of PPH among staff nurses in selected hospitals of Mysuru. The sample consisting of 60 Staff Nurses in selected hospitals by using non-probability convenient sampling method. The tool comprised of structured self-administered questionnaire. The mean of pre test knowledge score in experimental group was 8.966 with standard deviation of 4.205. While in control group, mean was 8.533 with standard deviation of 3.471. The post test knowledge score from both experimental and control group showed that the obtained post test mean value in experimental group (18.03) was higher than post test mean value in control group (8.93). The mean difference value of experimental group (9.07) is greater than control group (0.4), and the obtained 't' test value (9.977) is found to be more than 't' table value (2.00). Since, the obtained 't' value is highly significant at $p<0.05$ level. Therefore, null hypothesis (H_0) is rejected. This shows that there is a significant improvement in the knowledge level of staff nurses in experimental group compared to control group. This indicates that administration of video assisted teaching programme was effective in improving the knowledge of staff nurses regarding use of intrauterine balloon tamponade in the management of PPH. The findings established that there was no association between knowledge of samples on use of intrauterine balloon tamponade in the management of PPH and selected demo graphical variables in both experimental and control group. Hence, the research hypothesis H_3 was rejected and the present study revealed that VAT on knowledge regarding use of intrauterine balloon tamponade in the management of PPH was effective among staff nurses.

1. Introduction

PPH is an obstetrical emergency that can follow vaginal or cesarean delivery. PPH remains a major cause of both maternal mortality and morbidity worldwide more so in developing countries with an estimated mortality rate of 1, 40,000 per year or 1 maternal death every 4 hours.[1] PPH is one of the most alarming and serious emergencies a midwife may face. WHO has defined PPH as a blood loss of 500 ml or more within 24 hours after birth.[2] PPH is clinically defined as any amount of bleeding from or into the genital tract following birth of the baby up to the end of puerperium, which adversely affects the general condition of the patient evidenced by rise in pulse rate and falling blood pressure.[3]

There are two types of PPH based on timing of bleeding they are, Primary Post Partum Hemorrhage and Secondary Post Partum Hemorrhage. Primary PPH is excessive bleeding occurring during the third stage of labour or within 24 hours of delivery where as secondary PPH is excessive bleeding occurring beyond 24 hours and within puerperium.[3] There may be one or more causes for PPH

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related to 4T's, Tone, Tissue, Trauma and Thrombin. The most common cause of primary PPH is uterine atony which occurs in about 80% of cases.[4]

In atonic PPH the myometrium fails to contract and compress the maternal blood vessels that tear as the placenta pulls away from the wall of the uterus. Most bleeding after birth comes from the place where the placenta was previously attached. If the myometrium fails to constrict strongly, it cannot compress the blood vessels to control the bleeding.[3]

The conservative management techniques such as uterotonics medications, external uterine massage and bimanual compression are generally used as first line treatments. These compression techniques encourage uterine contractions that counteract atony and assist with expulsion of retained placenta.[5]

If these conservative methods fail to control bleeding in case of atonic PPH, the next intervention is mechanical method of control by balloon catheter tamponade is instituted before considering surgical procedures.[6] As per WHO recommendations the use of intra uterine balloon tamponade as the most effective intervention for the management of PPH due to uterine atony if women do not respond to uterotonics.[7]

The intrauterine balloon catheter is considered to act by exerting inward-to- outward pressure that is greater than the systemic arterial pressure to prevent continual bleeding.[8] A variety of devices have been used for uterine tamponade which include the Sengstaken-Blakemore tube, Bakri balloon, Rusch balloon, Foley catheter and the condom catheter balloon. In 1983 Goldrath reported on the use of Foley catheter as tamponade devices to arrest PPH.[9]

Globally, postpartum hemorrhage is the leading cause of maternal mortality with a prevalence rate of 6%.[10]About 830 women dies from pregnancy or childbirth-related complications around the world every day. 52% of maternal deaths are attributable to three leading preventable causes-hemorrhage, sepsis, and hypertensive disorders. WHO statistics suggest that 25% of maternal deaths are due to PPH. Postpartum bleeding is the quickest of maternal killers, can kill even a healthy woman within two hours, if not treated.[11]

Every year about 14 million women around the world suffer from PPH. With 56000 maternal deaths, India accounted for 19% of global burden of maternal deaths, though it has only 16% of global population. In the south regions of India, Karnataka is leading in maternal mortality rate as compare to other neighboring states contributing for about 108 maternal deaths out of 100,000 live births per year.[12] In developing country like India about 1.2% deliveries are associated with PPH and when it occurs about 3% of women die. PPH accounts to about 30% of maternal deaths in india.[13] PPH may result from failure of the uterus to contract adequately (atony), genital tract trauma (vaginal or cervical lacerations), uterine rupture, retained placental tissue, or maternal bleeding disorders. Uterine atony is the most common and leading cause of maternal mortality worldwide which occurs in about 80% of cases.[4]

2. Research Elaborations

2.1. Statement of problem

"A study to evaluate the effectiveness of Video Assisted Teaching Programme on knowledge regarding Intra uterine balloon tamponade in management of PPH among staff nurses working in selected hospitals of Mysuru city."

3. Objectives

1. To assess the pre interventional level of knowledge regarding intrauterine balloon tamponade in management of PPH among staff nurses in experimental and control group.
2. To evaluate the effectiveness of VAT on post interventional level of knowledge of staff nurses in experimental group.
3. To compare the post interventional level of knowledge of staff nurses on intrauterine balloon tamponade between experimental and control group.
4. To find out the association between pre interventional level of knowledge and selected demographic variables of staff nurses in experimental group and control group.

4. Hypothesis

1. **H_1 :** There will be a significant difference in the level of knowledge among staff nurses regarding intrauterine balloon tamponade in the management of PPH before and after video assisted teaching programme in experimental group.
2. **H_2 :** There will be significant difference in the post interventional level of knowledge among staff nurses regarding intrauterine balloon tamponade in the management of PPH in experimental and control group.
3. **H_3 :** There will be a significant association between pre interventional level of knowledge of staff nurses with selected demographic variables among experimental and control group.

5. Materials and Methods

5.1. Population

Staff Nurses

5.2. Sample

Staff Nurses working in selected hospitals of mysuru city.

5.3. Sample size

60 Staff nurses (Experimental Group — 30 and Control Group — 30

5.4. Settings

The study was conducted at Sigma and Suyog hospitals, Mysuru.

5.5. Sampling technique

Non-probability convenient sampling method

The conceptual frame work selected for this study was based on Program Evaluation Model, (CIPP MODEL) developed by Daniel Stuffle Beam (1966).

6. Research Design

The research design adopted for this study is Quasi-experimental non equivalent control group pre test-post test study design.

Table 1:

Group	Pre-test	Intervention	Post test
E	0_1	X	0_3
C	0_2	-	0_4

6.1. Key

1. 0_1: Pre test experimental group (Structured knowledge questionnaire).
2. 0_2: Pre test control group (Structured knowledge questionnaire).
3. X: Intervention (video assisted teaching programme)
4. 0_3: Post test experimental group (Structured knowledge questionnaire).
5. 0_4: Post test control group (Structured knowledge questionnaire).
6. E: Experimental group
7. C: Control group

6.2. Ethical consideration

The research title and objectives were approved by the Institutional research committee. Formal permission was obtained from the administrator of selected hospitals. Confidentiality was ensured. An informed consent was obtained from the each staff nurse. The individual had right to refuse to participate in this study. No physical and psychological pain was caused.

6.3. Description of the tool

1. **Part-I:** It comprised of 7 items seeking information on demographic data such as age, gender, educational status, years of experience, working area, recent attendance to any educational programme related to PPH, any previous knowledge about intrauterine balloon tamponade.
2. **Part-II:** It consisted of 30 structured questionnaire on use of IUBT in the management of PPH. Each item has one correct response and each item carries score of one. The maximum possible score was 30 and minimum possible score was 0. The score were arbitrarily graded as

Table 2:

0-10	Poor Knowledge
11-20	Average Knowledge
21-30	Good Knowledge

6.4. Data collection and data analysis

6.5. Data collection

The method of data collection adopted for the study was demographic performa and structured knowledge questionnaire. After selecting the samples the purpose of the study was explained and got informed consent from the participants

1. **Phase I:** In this phase, pretest was conducted by distributing questionnaire on demographic variables and the structured knowledge, instructions was given on answering the questionnaire for both experimental and control group.
2. **Phase II:** In this phase, video assisted teaching programme on knowledge regarding use of intrauterine balloon tamponade for the management of PPH was administered to the experimental group. All the questions or queries asked by the subjects were clarified. For control group no intervention was given.
3. **Phase III:** In this phase, post test was conducted after one week of video assisted teaching programme. It was conducted by administering the same structured knowledge questionnaire for both experimental and control group.

Data Collection process was terminated after intimating the participants and thanking each respondent for their participation and cooperation.

6.6. Data analysis

The data obtained was analyzed on the basis of the objectives of the study using descriptive and inferential statistics.

6.7. Descriptive statistics

1. Frequency and Percentage distribution of demographic variables were calculated
2. Mean, Mean percentage and standard deviation were used to determine the pretest and Post test knowledge of staff nurses regarding use of intrauterine balloon tamponade for the management of PPH.
3. Distribution of scores on level of knowledge regarding use of intrauterine balloon tamponade for the management of PPH was interpreted by summarizing into 3 categories such as poor, average, and good.

6.8. Inferential statistics

1. Paired "t" test was used for comparison within the experimental group
2. Unpaired "t" test was used to make comparisons between the experimental and control group.
3. Chi square test was to find the association between the pre interventional level of knowledge score with the selected demographic variables.

7. Result

The data presented in the Table 1 shows that mean percentage of post test level of knowledge score of staff nurses in experimental group that is M= 18.03, SD = 3.167 were higher than mean of postest level of knowledge score of staff nurses in control group that is M= 8.93 , SD = 3.128.

The data presented in Table 2 shows that the paired t test computed between pre and post test knowledge score in experimental group was statistically significant at 0.05 level of significance. The calculated't' value 10.12 is greater than table value($t_{(29)}$)=1.699. Hence, research hypothesis(H_1) is accepted. This shows that the video assisted teaching programme was effective in improving the knowledge of staff nurses regarding use of intrauterine balloon tamponade in the management of PPH.

The data presented in Table 3 shows that, the unpaired't' test computed between post test knowledge score between experimental and control group was statistically significant at 0.05 level of significance. The calculated 't' value 9.977 is greater than table value($t_{(58)}$)=2.00. Hence, research hypothesis (H_2) is accepted. This shows that the there is significant difference in the knowledge gain in experimental group. Experimental group who have undertaken the intervention have significantly more knowledge as compare to control group who had not subjected to any intervention.

1. **H_1 :** There will be a significant difference in the level of knowledge among staff nurses regarding intrauterine balloon tamponade in the management of PPH before and after video assisted teaching programme in experimental group. In the present study, mean score of posttest knowledge in experimental group (18.03) was apparently greater than the mean score of pretest knowledge in the same group (8.966). the paired 't' test showed that there was significant improvement in the knowledge of the samples that is t= 10.12 at *p<0.05. the mean difference (9.07) between pretest and posttest knowledge score of staff nurses in experimental group was found to be significant. Hence, H_1 was accepted and H_{01} was rejected suggesting that the VAT was effective in increasing the knowledge of staff nurses regarding use of intrauterine balloon tamponade in the management of PPH .
2. **H_2 :** There will be significant difference in the post interventional level of knowledge among staff nurses regarding intrauterine balloon tamponade in the management of PPH in experimental and control group. The post test knowledge score from both experimental and control group showed that the obtained post test mean value in experimental group (18.03) was higher than post test mean value in control group (8.93). The mean difference value of experimental group(9.07) is greater than control group (0.4), and the obtained 't' test value (9.977) is found to be more than 't' table value (1.671). Since, the obtained 't' value is highly significant at p<0.05 level. Therefore, null hypothesis H_{02} was rejected and H_2 was accepted. This shows that there is a significant improvement in the knowledge level of staff nurses in experimental group compared to control group. This indicates that administration of video assisted teaching programme was effective in improving the knowledge of staff nurses regarding use of intrauterine balloon tamponade in the management of PPH.
3. **H_3 :** There will be a significant association between pre interventional level of knowledge of staff nurses with selected demographic variables among experimental and control group. The findings established that there was no association between knowledge of samples on use of intrauterine balloon tamponade in the management of PPH and selected demographical variables like age, gender, educational status, years of experience, area of working, recent attendance to any educational programme related on PPH, any previous knowledge on IUBT in both experimental and control group. Hence, the research hypothesis H_3 was rejected.

8. Conclusion

This study concluded that there is improvement in the level of knowledge of staff nurses which indicates that the Video assisted Teaching Programme was effective. The demographic variables of staff nurses was significantly not associated with the pre-test knowledge score. The development of Video assisted Teaching Programme will help the staff nurses to enhance their knowledge regarding

Table 3: Overall mean, standard deviation and mean percentage of pre-test and post-test level of knowledge of staff nurses in experimental and control group.n=60

Groups	Knowledge scores	Max possible score	Min score obtained	Max score obtained	Mean	Mean %	SD
Experimental group (30)	Pre-test knowledge score	30	02	17	8.966	29.88%	4.205
	Post-test knowledge score	30	12	26	18.03	60.1%	3.167
Control group (30)	Pre -test knowledge score	30	03	15	8.533	28.44%	3.471
	Post-test knowledge score	30	03	16	8.93	29.76%	3.128

Table 4: Overall mean , standard deviation (SD) and mean difference, paired t value between pre-test and post-test level of knowledge of staff nurses in experimental group. n=30

Aspects	Knowledge level of staff nurses			Significant difference in level of knowledge		Paired t-test
	Mean	Mean difference	SD	df	't' value	
Pre test	8.96	9.07	4.205	29	10.12	t=1.699
Post test	18.03		3.167			

$t_{(29)}$ = 1.699, highly significant at p≤0.05

Table 5: Overall mean, standard deviation (sd) and mean difference, unpaired "t" value between post-test level of knowledge of staff nurses in experimental and control group.n=60

Group	Aspects	Knowledge level of staff nurses			Significant difference in level of knowledge		unpaired t-test
		Mean	Mean difference	SD	Df	Unpaired 't' value	Table value
Experimental group	Post test	18.03	9.07	3.167	58	9.977	t=2.00
Control group	Post test	8.93	0.4	3.128			

use of Intra Uterine Balloon Tamponade in the management of Atonic PPH.

9. Source of Funding

None.

10. Conflict of Interest

None.

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