

A Study to Assess the Effectiveness of Protocol Regarding Infection Control in Labour Room in Terms of Knowledge Gain among B. Sc Nursing III Year Students of Govt. College of Nursing Indore

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Abstract

Background and aim of the study: WHO, UNICEF, UNFPA reported that in 2008, there are 5,29,000 per year maternal death in 13 countries. Puerperal sepsis is the 2nd leading cause for maternal mortality. Worldwide the puerperal sepsis rate is 15%. In our India the puerperal sepsis rate is 11%. In our India maternal mortality rate is 5.29 lakhs, 1.36 lakhs due to puerperal sepsis

The study aims at determining the effectiveness of protocol on infection control in labor room among B.Sc Nursing III year students.

Method: An evaluative research approach was selected. In this study, pre-experimental one group pretest, post-test design was used to observe the effectiveness of protocol on infection control in labor room among B.Sc Nursing III year students. A questionnaire was prepared and distributed among B.Sc Nursing III year students using random sampling technique.

Result & Discussion: The total mean pretest score of the students were 15.4 on the scale of 1-30. The mean post-test knowledge score (25.5) was higher than the mean pre-test knowledge score (15.4). The dispersion of pretest score (SD \pm 2.84) is less than that of post test score (SD \pm 2.91) and paired 't' test computed (' t_{39} '=24.76 $P \leq$ 0.001) shows a significant difference suggesting that the Protocol was effective in increasing the knowledge regarding infection control in labor room among B.Sc nursing III year students. There was no significant association between demographical variables i.e. age, academic qualification and previous knowledge and pretest knowledge score.

Conclusion: The findings of the study have implications for nursing practice, nursing research, nursing education and nursing administration. Protocol was considered an effective education strategy to improve knowledge of the students.

Key words: Knowledge, Infection Control, Protocol, Labour Room, B.Sc (N) III year student

Background of the Study

“Neonates constitute the foundation of a nation and mothers are its pillar”.

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Pregnancy and childbirth are the most important events of a women's life. Pregnancy, delivery is a normal physiological process. Most of the time the women achieve a normal pregnancy outcome without any complication. The birth of a baby is a momentous occasion in the life of a couple. But this pleasant experience can be deteriorating if any uneventful experiences occur¹³.

Women in labor rooms are exposed to invasive devices and/or procedures that are known to pose significant infection risk. Although the duration of contact with the facilities is generally brief, the infection risk associated with care in labor rooms is probably quite high. But fortunately, most nosocomial infections in these settings are largely preventable by the combination of simple good hygienic practice and appropriate decontamination of instruments (WHO 2004)²⁵.

Sepsis after childbirth is emerging as a significant cause of maternal mortality and morbidity, raising questions about the quality of obstetrics and postnatal care given to women and the efficacy of infection-control practices in hospitals directly reflects the aspects of quality of obstetric care. The unhygienic delivery practices by health personnel, shortage of suitable clean implements and materials all contribute to the problem of infection to the mother after childbirth. The burden of this disease resulting from infection has led to a revival of general interest in infection control.²⁵

Sepsis remains a leading cause of preventable maternal death. Most postpartum infections take place after hospital discharge, typically 24 hours after delivery. Sepsis accounts for approximately 10% of all maternal deaths. Puerperal sepsis causes at least 75000 maternal deaths every year, mostly in low-income countries. Postpartum infections may also result in maternal morbidities which include a wide range of maternal complications such as septicemia, endotoxic shock and peritonitis or abscess formation leading to surgery and compromised future fertility. For each maternal death associated with puerperal infections, around 50 women experience life-threatening morbidity from sepsis.²

Some of patient factors predisposing to the development of puerperal infection include home birth in unhygienic conditions, prolonged labor with or without rupture of membranes, multiple vaginal examinations in labor, obstetrical maneuvers, retained secundines within the uterus and postpartum hemorrhage. In addition, it has been shown that pre-existing medical problems, febrile illness or taking antibiotics during 2 weeks prior to presentation, operative vaginal delivery and cesarean section may be associated with severe puerperal infections¹³.

Hospital labor room can be crawling with germs and drug resistant viruses. Pathogens may introduce infection to the patient through contact with the environment, personnel or equipment. Due to general lack of resources and awareness of infection control procedure in the developing countries even the life-saving equipment can become the sources of fatal outbreak of infection. The problem can only be tackled by implementing effective preventive strategies. Infection control measures encompasses many aspects like educating nursing personnel regarding infection control practices like proper hand washing, use of protective barriers, safe handling and disposal of sharp instruments, proper use of disinfection and sterilization of instruments and articles, making a sterile disposal of waste material etc.³

Students or staffs, who all are working in hospital should have proper knowledge regarding usage of sterilized equipments, avoidance of overcrowding, isolation of infected clients, aseptic procedure and proper nursing care. Nurses help in reducing risks of morbidity and mortality in patients and care givers at all levels. As nurses or care givers share responsibility for infection risk and also thereby preventing risk of complication in patient's present health status and health care personnel. Labor room is an area where personhood is achieved. For getting a healthy mother and child should have an environment which is healthy, clean, free from infection as they have a tendency of getting the nosocomial infection¹³.

Material & Method

This study was conducted study to assess the effectiveness of protocol regarding infection control in labour room in terms of knowledge gain among B. Sc Nursing III Year students of Govt. College of Nursing, Indore. An evaluative research approach was selected for the present study as it is the most suitable approach to fulfill the objectives of the study and pre-experimental one group pretest, post-test design was used. Simple random sampling technique was cast-off to select the sample of 40 B Sc Nursing III year students who were present at the time of data collection and who fulfilled the inclusion criteria. A structured knowledge questioner is prepared to assess the knowledge of the B.Sc Nursing

III year. Content of infection control protocol and tools were developed after extensive review of literature and were validated by experts in field. Pilot study was conducted in SAFE institution of Nursing, Indore and reliability of tools was checked by test-retest method which was conducted in R.D Gardi college of Nursing, Indore. Ethical permission for the study was taken from institutional ethical committee of GCON, Indore. A self-reporting data collection technique by using paper and pencil method was used in order to obtain data. After taking pre-test of the samples, a booklet- "Infection control protocol in labour room" was distributed to them and after 10 days post-test was taken.

Analysis

Analysis and interpretation of data was done by using descriptive and inferential statistics based on the objectives of the study and hypothesis to be tested. Paired t- test was used to assess the effectiveness of the infection control protocol for labour room and area wise knowledge score was also calculated by the same. Chi-square is used to find out the association between the pre-test knowledge score and demographic variable.

Results

In present study:

- Maximum students 29(72.5%) were belonged to the age group of 21-23 years, 11 students (27.5%) belongs to age group 18-20 years. While none belongs to age group 24 & above. Academic qualification of 39 (97.5%) were 12th pass, only 1(2.5%) has done B.Sc and

no one had any other course. 23(52.5%) students had no previous knowledge regarding infection control in labor room while 17(52.5%) had previous knowledge.

- In pretest 04(10%) students had average knowledge (1-10) while no students belong in average in post-test, 35(87.5%) students had good knowledge, range between 11-20 in pre-test whereas 04(10%) students in post-test. In pretest 01 (2.5%) students had very good knowledge ranging between 21-30 while 36 (90%) students scored very good in post-test. (**Table 1**)

- The post-test mean score (25.5) is apparently higher than mean score of pre-test(15.4). The dispersion of pre-test (SD±2.84) is smaller than post-test (SD±2.91) (**Table 2; Fig 1**)

- Computed 't' value shows that there is a significant difference between pre-test & post -test mean knowledge score (' t_{39} '= 24.76, $P \leq 0.001$ level). In the 't' table the value of ' t_{40} ' is 3.55 at 0.001.

- Hence, Post-test knowledge score is higher than pretest knowledge score. This indicates that the protocol is effective in increasing knowledge. So, Null Hypothesis (H_0) is rejected and Research Hypothesis (H_1) is accepted

- There is no association between pretest knowledge score and demographic variable.

(Table-3)

Table 1: Grading of sample based on pre-test and post-test knowledge score (N=40)

Grade	Score	Pretest		Post test	
		Frequency	Percentage	Frequency	Percentage
Very Good	21-30	01	2.5%	36	90%
Good	11-20	35	87.5%	04	10%
Average	1-10	04	10%	00	0%

Table 2: Comparison between mean, mean difference, standard deviation and ‘t’ value of Pre-test and post-test knowledge score

(N=40)

Knowledge Score	Mean	Percentage	Standard deviation	Mean difference	‘t’ value
Pre-test	15.4	51.3%	2.84	10.35	24.76
Post-test	25.5	85%	2.91		

‘t₄₀’= 24.76, P ≤ 0.001

Table:3 Association between pretest knowledge scores and selected demographic variables

(N=40)

S.No.	demographical variables	Frequency	Scores			df	X 2 value
			Average (1-10)	Good (11-20)	VeryGood (21-30)		
1.	Age in years						
1.1	18-20	11	03	08	00	1	0.138*
1.2	21-23	29	01	27	01		
1.3	24 and above	00	00	00	00		
2.	Academic Qualification						
2.1	12th pass	39	04	34	01	1	0.167*
2.2	B.Sc	01	00	01	00		
2.3	Other	00	00	00	00		
3.	Previous knowledge						
3.1	Yes	17	03	13	01	1	0.001*
3.2	No	23	01	22	00		

Note: * non significant

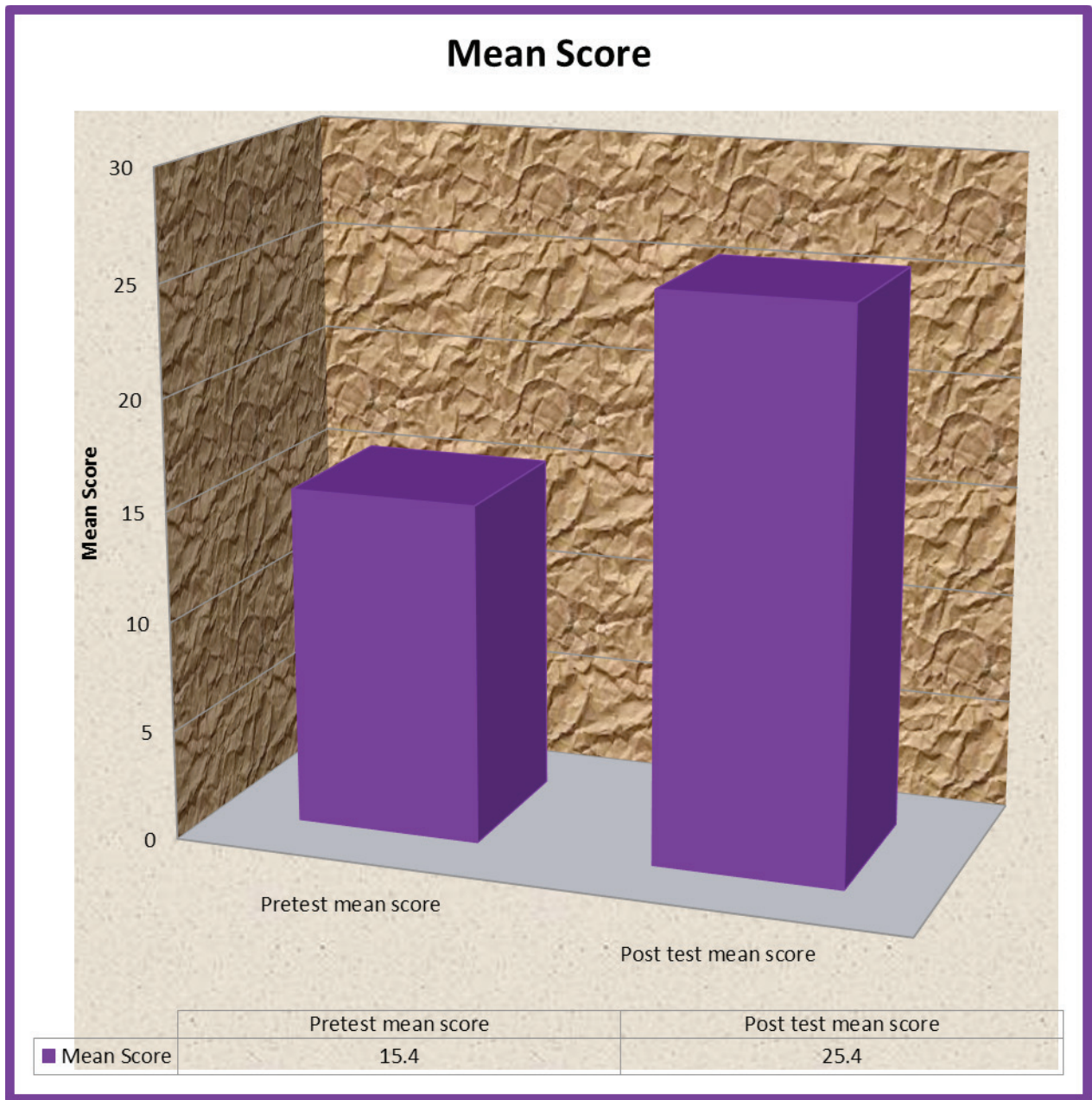


Fig 1: MEANSORE OF PRE-TEST & POST-TEST

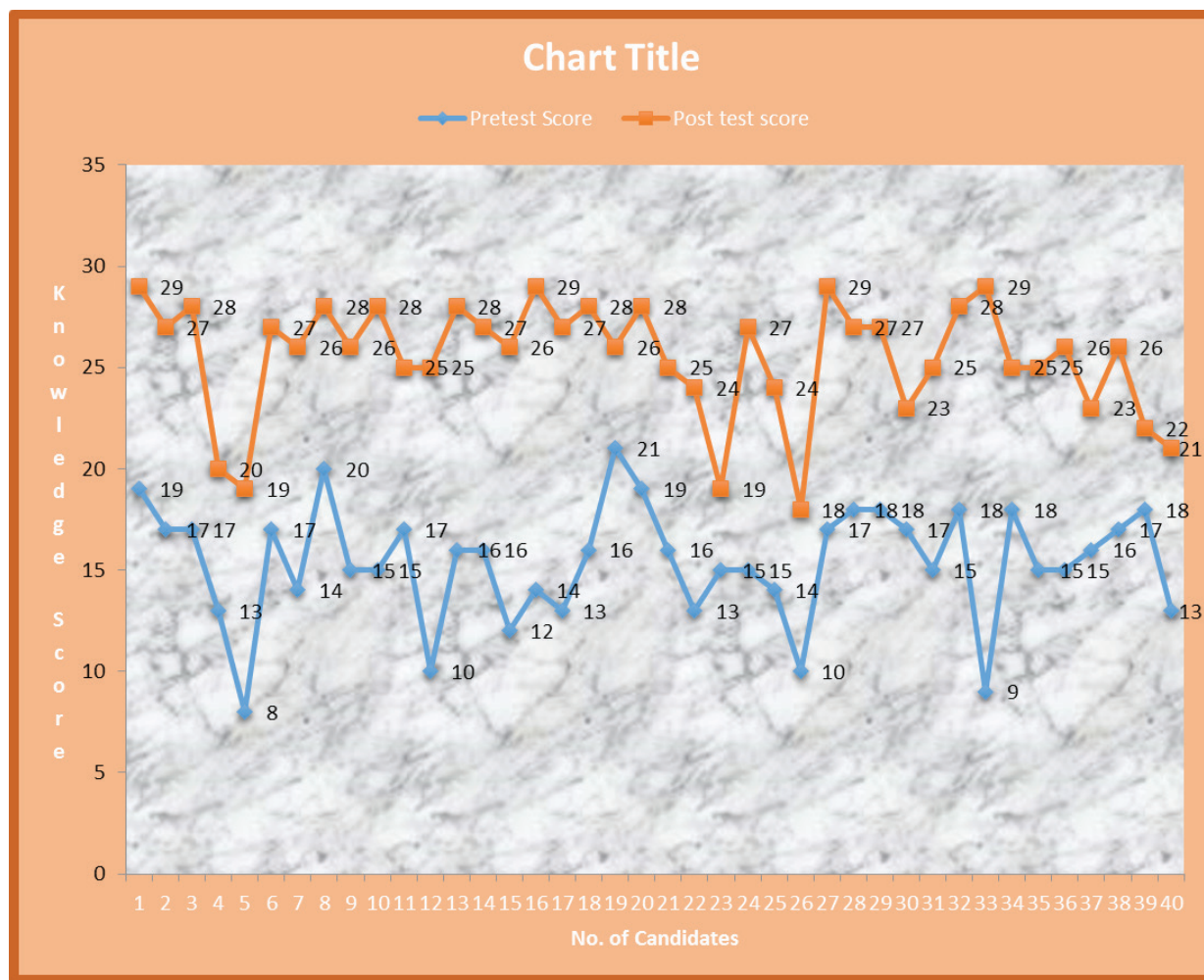


Fig 2 Comparison of pre-test and post test knowledge score of each student

Discussion

The main aim of this study was to evaluate the effectiveness of protocol regarding infection control in labor room in terms of knowledge gain among the B.Sc Nursing III year students. The objectives of the study are to assess the pre-existing knowledge of the students through pre-test score regarding protocol on infection control in labor room, to evaluate the effectiveness of protocol in terms of knowledge regarding infection control in labor room and to find out the association between the pre-test knowledge score with the selected demographical variables.

The total mean pre-test knowledge score secured by the sample is 15.4. Pre-test knowledge score of 1 respondent was scored to 21-30 score (75-100%) and 35 respondents had score limited to 11-20 (50-75%) scores and 4 respondents had score limited to 1-10 (25-50%)

score. In the post-test all the 36 respondents had scored between 21-30 score i.e. very good, 4 respondent score between 11-20 i.e. good, none of the respondent score between 1-10 i.e. average score. The mean post-test knowledge score was 25.5 which is apparently higher than the pre-test score.

The above results clearly indicate that protocol was effective in increasing the knowledge score among B.Sc Nursing III year students regarding infection control in labor room. The above findings is supported by a study conducted by:

Sr. Angelina Mathias (2013) conducted a study on effectiveness of protocol on management of women in the first stage of labor. This study was conducted by a descriptive evaluative approach was used to assess the existing practice of the management of women in the first stage of labor and to test the effectiveness of protocol

prepared for the women in the first stage of normal labor, and selection is done by purposive sampling technique¹⁹

The result show that almost all women (95%) received quality care in all area after implementation of protocol, effectiveness of protocol was tested by unpaired t-test the mean difference between the pretest practice score (19) and post-test practice score (33.4) was found to be significantly high [$t(28)=14.84$ $P<0.05$] this suggest that the protocol was effective in increasing the quality of care⁴.

The conceptual framework adopted for this study is based on Imogene King's Goal Attainment model that aims on attaining goal of promoting the knowledge of the B.Sc Nursing III year students regarding infection control in labor room .

Conclusion

After the detailed analysis, this study leads to the following conclusion:

That students did not have sufficient knowledge regarding infection control in labor room. They required further education and information. After providing booklet- infection control protocol in labour room the knowledge of sample highly increased. Thus, it is concluded that the protocol regarding infection control in labor room is effective as a teaching strategy. Selected demographic variables do not show any role in pretest knowledge score.

Ethical Clearance- Taken from IEC of Govt. College of Nursing, Indore

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Conflict Of Interest- Nil

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