EFFECT OF SELF-INSTRUCTIONAL MODULE ON KNOWLEDGE TOWARDS NEONATAL SEPSISAMONG NURSING STUDENTS, ODISHA, INDIA.

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Abstract: Background: Neonatal sepsis considers as a serious health issue throughout the world as it is a major neonatal problem in developed and developing countries.Early diagnosis and proper management of sepsisamong neonates can preventpermanent disability and deathrate in neonates. The vital role of nurses about sepsis and their ability to detect the clinical features of the neonatal sepsis, which helps to make paramount importance for early diagnosis and prompt management. Objectives: To find out the level of knowledge regarding neonatal sepsis among nursing students in selected school of Nursing, Bhubaneswar.To evaluate the effect of self-instructionalmodule on neonatal sepsis among nursing students.To evaluate the association between level of knowledge regarding neonatalsepsis with their selected demographic variables among nursing students. Methods: The present study was carried out as pre-experimental design at selected School of Nursing Bhubaneswar, Odisha. A total 120 number of nursing students were selected by purposing sampling technique. Validity was checked by experts and reliability test wasdone. Descriptive and inferential statistics were used to analyze the data. Results: The result shows, in pretest, students (66%) were having poor level of knowledge regarding neonatal sepsis where as in posttest after implication of intervention teaching module, students (68%) were having very good knowledge. Likewise, in pretest 35% were having less knowledge in the area of clinical manifestation and diagnostic evaluation, but in posttest it was increased to 86%. And there was no significant association found with sociodemographic variables. Conclusion: Study concluded that the self-instructional module was effective in increasing the level of knowledge amongnursing students. Nursing personnel can also utilize this module at educational setting as well as clinical setting in improving knowledge of nursing students.

Keyword: Effect, self-instructional module, knowledge, neonatal sepsis, nursing students

INTRODUCTION

Neonatal period is from birth to four weeks of life. Neonatal sepsis is a clinical syndrome resulting from systemic infection and bacteremia in the first month of life.Neonatal sepsis manifested by systemic infection and isolation of bacteria from blood [1]. Neonatal sepsis classified into two i.e. early onset of neonatal sepsis (occurs within 1st week of life) and late onset neonatal sepsis (occurs between 7-28days of life). The first 28 days of life is known as neonatal period and it has seen that 40% of all deaths in children are under five. Even during neonatal period there is major variation in mortality rates, with 75% of all neonatal deaths which are occurring in the first week of life – including 25% to 45% in the first 24 hours after birth [2,3]. Neonatal conditions accounted for 30,72,000 deaths worldwide. Among the many neonatal conditions, the three major contributors to the global burden of disease are premature birth, birth asphyxia, and neonatal sepsis.Sepsis is still one of the major reasonsof morbidity and mortality in neonatesthroughout the world, in spite of many recent advancement in health care units [4]. More than 40% of under five deaths globally occurs in neonatal period, resulting in 3.1 million newborn deaths each year.More than one third of the estimated 4 million neonatal deaths around the world each year are caused by severe infections and quarter around 1 million death are due to neonatal sepsis or pneumonia [5]. According to the WHO four million newborn child death occurs in each year during the first four weeks of their lives. Among these, (75%) death occurs due to prematurity during the first week of life. In worldwide the major causes of neonatal deaths were estimated (35%) due to infections, (28%) preterm births, (24%) intrapartum complication, and (23%) birth asphyxia [6].The neonatal sepsis mortality rates can reach 52%, leading to nearly one million deaths and accounts for around 30-50% of total neonatal deaths in the developing countries, while sepsis related fatality can be largely prevented by sepsis prevention itself, timely identification and supportive care [7]. The incidence of neonatal sepsis varies from 1-4 per 1000 live births in developed countries and 10-50 per 1000live births in developing countries [8]. Annually in developing countries neonatal infection or sepsis causing 1.6 million deaths.Neonatal Sepsis and meningitis among neonates are responsible for most of these deaths. Bacteria is the most common organism that causes neonatal sepsis.Chance of transmissions like vertical or horizontal transmission of infectious organisms are more for neonates [9,10].

MATERIALS AND METHODS:

Research design and settings
A Pre-experimental descriptive research design was used for present study. The research approach used for the present study was quantitative approach. The present study was conducted at SUM Nursingschool, Bhubaneswar in Odisha.

Sample and sampling technique
The samples for the present study was the nursing students who were in general nursing and midwifery courses in Bhubaneswar, Odisha and was selected by Purposive sampling technique. The sample size was calculated by single population proportion formula $(n=(Z_{\partial/2})2\ p(1-p)/d^2)$and the proportion were derived from previous literature in Odisha.where z is SD at 95% confidence interval (1.96), p is population proportion, d is the margin error (0.05) thus, the calculated sample size for present study was 280. Thoughstudentschosen only who were studying in 2nd year and 3rd year and the strength was 130, so the sample size for the present study was 120 and the sample were chosen who can read and understand local language and who were willing to be part of the study.

Method of data collection
In this pre-experimental study, a self- administeredquestionnaire was designed to collect data from participants, to know the knowledge regarding neonatal sepsis and effect of instructional module, to compare per-test and post-test the variables and to test hypothesis quantitatively. Self-structured questionnaire has two parts. Part A: contains socio – demographic characteristics of students. Part B: consists of 34 questionnaires which was divided into three portions such as cause and predisposing factor

of neonatal sepsis (6), Clinical feature and diagnostic test (8) and management and prevention of neonatal sepsis (20). Each item has three options with one correct response.For each correct response one mark has given and for incorrect response zero mark has given. The,information booklet was provided to the students and instructed them to read it thoroughly and after seven days, Post test was conducted by using the same self-administeredknowledge questionnaire.

After collecting all data, the data was entered into the Statistical package for Social Sciences (SPSS) which is licensed by institution. Descriptive and inferential statistics were calculated to summaries the variables

Ethical consideration

Participation in the present study was voluntary and a written informed consent was taken from all the participants after informing the purpose of the study and privacy of participants was ensured. The institution ethical committee approved the study.

RESULTS

In sociodemographic data findings revealed that less than half i.e.40% ofstudents were in the age group of 20 – 22years. Majority of the students i.e. 72% were unmarried.Highest percentage of students i.e. 54 % were belong to intermediate.And maximum 56% of students got previous knowledge from teacher.

Table-1: Description of pre-test and post-test knowledge scoreson different parts of neonatal sepsis (N=120)

Sl No.	Area of knowledge	Max. Score	Pre-test			Post-test			Difference in mean percentage
			Mean	Standard Deviation	Mean percentage	Mean	Standard Deviation	Mean Percentage	
1.	Cause and predisposing factor of neonatal sepsis	6	2.4	1.47	40%	5.26	0.75	87.6%	47.6
2	Clinical feature and diagnostic test	8	2.8	1.38	35%	6.88	0.84	86%	51
3	Management and prevention	20	7.6	2.44	38%	17.06	1.84	85.3%	47.3
4	Overall Total	34	12.78	3.47	37.58%	29.14	2.81	85.7%	48.12

Table1 shows, majority 40% students were having adequate area of knowledge regarding cause &predisposing factor of neonatal sepsis in pre-test. And majority 87.6% students were having increased knowledge in that same area in post-test.

Figure-1 showing pre-test and post test score on level of knowledge. (N=120)
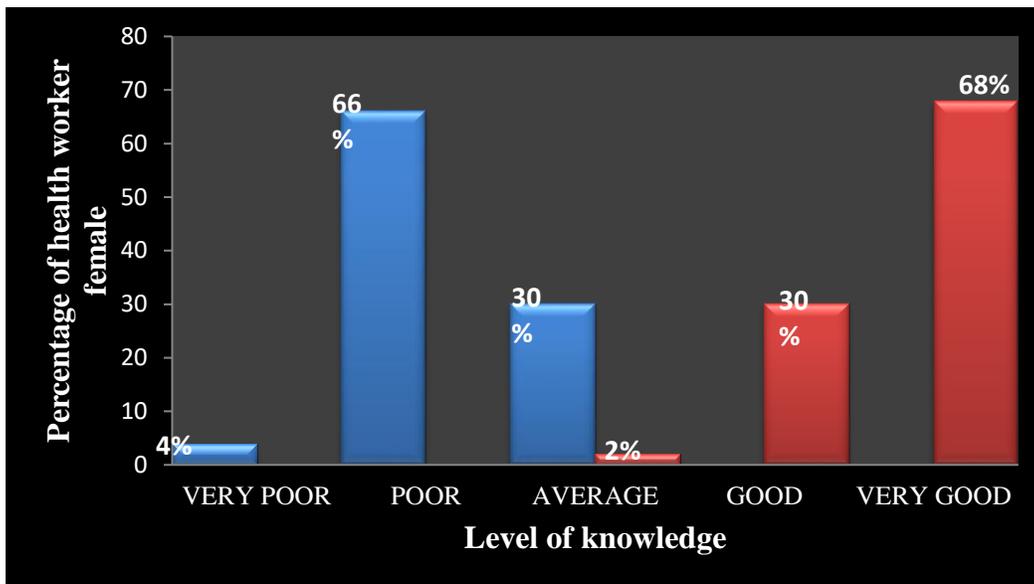
The figure-1 showsthat, in pre-test majority 66% students were having poor level of knowledge. But in post-test majority 68% students were having very good knowledge regarding neonatal sepsis.

Table2:Comparison between pre-test and post-test scores on level of knowledge among students using 't' test (N=120)

Sl. No.	Area	't' value	Remarks
1	Definition,cause,risk factor,predisposing	12.24	Highly significant
2	Clinical features, diagnostic test	17.76	Highly significant
3	Management &prevention	21.81	Highly significant
5	Overall Total	25.85	Highly significant

Above table reveals that there was significant difference between pre-test and post test scores on level of knowledge.

Table3: Association between post –test knowledge score of students with their selected demographic variables (N=120)

SL NO.	Demographic variable	X^2 value	Level of significant
1	Age	0.01	Not significant
2	Marital status	0.97	Not significant
4	Educational qualification	0.80	Not significant
5	Previous source of information	0.92	Not significant

X^2 = 3.84(Table value), (P≤0.05), df=1

Above table depicts that there were no significant association between post-test knowledge score with age,marital status,educational qualification & previous source of information.

DISCUSSION

Thecurrent study shows that self-instructional module was statistically significant for increasing the level of knowledge among nursing students as calculated paired 't' value is (12.24), (17.76), (21.81), (25.85) and 'p' value is (<0.00001) which is being less than 0.05 level of significance. And there were no significant association found between level of knowledge with selected demographic variables in chi-square analysis.

From the findings of the present study it can be concluded that, the highest percentage i.e.40% of students were 20 – 22 years.Majority72% ofstudents were unmarried and 54% of students according to their education was having plus two qualification of any stream.Maximum 56 % of students got knowledge through their teacher. Further overall pre-test mean score was 12.78, 3.37 which is 37.58% of maximum score where as poor knowledgewas 85.7% and during post- test showing a difference of 48.12 % of effectiveness and good knowledge.It can be interpreted that self-instructional module was effective both area wise.Other study conducted in 2016 by Hanaa I, El Sayed, et al conducted a descriptive exploratory research design study on neonatal sepsis in Menofia university and central hospital,Egypt. A total 90 number of   intensive care unit nurses were participated in this study by using convenient sampling technique. Result revealed that only 33.3% of nurses were able to identify sign and symptoms of child for sepsis. And 64.4% of nurses were able to identify features of septic shock but unable to distinguish the earlier stages of the neonatal sepsis [11].

A study conducted by Ritu Kundu in 2020 on effectiveness of self-instructional module regarding neonatal nosocomial infection among nursing personnel shows that 52% and 48% of nursing personnel had moderate and inadequate knowledge in pre-test respectively where as in post-test level of knowledge was increased and 74% of nursing personnel had adequate knowledge. In pre-test lowest mean percentage was 42.1% in arear of prevention and complication of neonatal nosocomial infection whereas in post-test lowest mean percentage was 75.9% in the same area. The result also shows that there was a significant association between demographic variables and level of knowledge at 0.05 level of significant [12].

Generally, after completion of a particular course in nursing,staff nurses are working in the clinical field with lot of experiences.So, they should have more knowledge,practice and expertise in comparison to student nurses. In 2019, Pawani Hewamalage1, Siriwardhane1et al conducted a descriptive cross-sectional study at SJGH,Sri Lanka.Data were collected from 81 nurses through an interviewer administered questionnaire method.Among all 72.8% were having overall good knowledge and the rest 27.2% were having satisfactory knowledge. Knowledgeregarding risk factors, majority 80.2% had a greater knowledge, while 19.8% were having less knowledge. And majority (85.5%) of the nurses, knew about actions to take upon after identification of neonatal sepsis [13].

CONCLUSION

On the basis of results of preset study findings, it was concluded that the students had moderate knowledge on neonatal sepsis and have less knowledge in some areas of neonatal sepsis. Thus, a self-instructional module was used to improve the knowledge of students so they can practice it in the hospital.Student nurse are the future nurse and they have the major role in preventing and providing proper management to neonatal sepsis.

REFERENCES

1. Sankar M J, Neogi S B **et. al**. State of newborn health in India. Journal of perinatology, J Perinato**logy**. 2016 Dec; 36(Suppl 3): S3–S8.

2. Sorsa Abebe. Epidemiology of Neonatal Sepsis and Associated Factors Implicated: Observational Study at Neonatal Intensive Care Unit of Arsi University Teaching and Referral Hospital, South East Ethiopia. Ethipian journal of health science. 2019 May; 29(3): 333–342.

3. John Bua, David Mukanga et al.Risk factors and practices contributing to newborn sepsis in a rural district of Eastern Uganda, August 2013: a cross sectional study. BMC research notes. 2015; 8: 339.

4. Dorthy R Marlow. Textbook of Peadiatric Nursing. 6th edition. USA: B Sounders Company, 1997, 371, 422.

5. Ferrari Banerjee KT, Hazra A, Biswas A, Ray J, Roy T, Raut KD et al. (2003-2004) Disorder in neonates Indian J Pediatric. 2011; 76(2):139.

6. G. Yamey, H. Horváth, L. Schmidt, J. Myers, and C. D. Brindis, "Reducing the global burden of Preterm Birth through knowledge transfer and exchange: A research agenda for engaging effectively with policymakers," Reproductive Health, vol. 13, no. 1, article no. 26, 2016.

7. Singh S. Effect of structured teaching programme on knowledge and practice related to neonatal nosocomial infection among staff nurses. Nursing journal of India. 2011; 58:126-127.

8. Institute of pediatric disorder and health committee of pediatric disease. Retrived on, 2012, November 10th. From http;// www.medicinent. com.
9. Lin -Yan Hu, Parmer RC, Sahu DR, Bavadekar SB. Knowledge attitude and practice of parents about nosocomial infection. 2014; (1):126-27.
10. B.obaid Khamees, Hussein Adraa et al. Nurses' knowledge concerning neonatal sepsis in neonatal Intensive care units at pediatric teaching hospitals in Baghdad city. Asian academic research journal of multidisciplinary. July -2016 volume-3 issue-7 pp. 136-138.

11. Hanaa I, El Sayed, Hanaa M, et al.Knowledge and identification of sepsis among pediatric nurses at neonatal intensive care units, Innovative Journal of Medical and Health Science 7: 3, May - June (2017) 21 – 26.
12. Ritu Kundu. Effectiveness of sel-insructional module regarding neonatal nosocomial infection among nursing personnel. International j of research in pediatrc nursing. 2020; 2(2): 14-17.
13. Pawani Hewamalage et al. Nurses' knowledge on neonatal sepsis in a tertiary care hospital in Sri Lanka Nurses' knowledge on neonatal sepsis in a tertiary. Sri Lanka Journal of Child Health, 2019; 48(4): 316-320