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A study to assess the effectiveness of structured teaching programme on knowledge regarding prevention of congenital anomalies among staff nurses at selected hospitals, Jaipur

¹Vishnu Dev Mishra and ²Dr. Mohammed Umar Khan

¹Professor, NIMS University, Jaipur, Rajasthan, India

²Associate Professor, Upchar College of Nursing, Jaipur, Rajasthan, India

Corresponding Author: Vishnu Dev Mishra

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Abstract

Introduction: Some congenital anomalies can be treated with surgical and non-surgical options, such as cleft lip and palate, clubfoot, and hernias. Others, including heart defects, neural tube defects, and Down syndrome, can cause lifelong impacts.

Objective: To assess the effectiveness of structured teaching programme on knowledge regarding prevention of congenital anomalies among staff nurses.

Methods: A pre experimental one group pre test post test research design was conducted among the 200 staff nurses selected through purposive sampling technique. The study was conducted at Liberty Hospital, Jaipur, Manipal, Hospital, Jaipur and C. K. Birla Hospital, Jaipur from 10/06/2019 to 30/07/2019.

Results: The mean of pre test score is 15.3 whereas the mean of post test score is 26 with 10.7 mean differences. The median of pre test score is 15 and the median of post test score is 26 and the standard deviation of pre test was 1.71 whereas in post test the standard deviation was 1.66.

Discussion: on the basis of the results it is concluded that structured teaching programme regarding prevention of congenital anomalies was effective to improve the knowledge of staff nurse.

Keywords: Assess, effectiveness, STP, congenital anomalies, staff nurses

Introduction

Children with significant birth defects need more medical care, require more frequent hospitalizations, need community support services, and often require special education programmes. The happiness of a family depends on the health of the children. In order to prevent anomalies, there are measures that help include avoidance of teratogenic exposures and radiation, smoking, drinking alcohol, medical treatment of maternal illnesses, good nutrition, and routine obstetrical care [1]. Dietary deficiency of maternal folic acid is associated with spina bifida. Ingestion of harmful substances by the mother like alcohol, mercury or drugs such as phenytoin can cause recognizable combinations of birth defects. Several infections which a mother can contract during can also be teratogenic [2].

Congenital anomaly was defined as a permanent change produced by an intrinsic abnormality of development in a body structure during prenatal life. A congenital anomaly may be viewed as a physical, metabolic, or anatomic deviation from the normal pattern of development that is apparent at birth or detected during the first year of life. It was reported that congenital anomalies occur in 3% of all

infants worldwide. Congenital anomalies including structural malformations, chromosomal abnormalities and metabolic disorders are becoming the most important cause of perinatal mortality. Congenital anomalies have been known and recognized for centuries. It is a stimulating problem for research study because of the high frequency of their occurrence and the devastating effect they may have on the child and his/her family. It contributes a significant proportion of perinatal and infant morbidity and mortality. Approximately 50% of all congenital anomalies, however, cannot be assigned to a specific cause [3]. Some congenital anomalies can be treated with surgical and non-surgical options, such as cleft lip and palate, clubfoot, and hernias. Others, including heart defects, neural tube defects, and Down syndrome, can cause lifelong impacts [4].

Need of the study

According to WHO, the term-Congenital malformations should be confined to structural defects present at birth. Congenital malformations account for 8-10% of all perinatal deaths and 13-16% of all Neonatal deaths. With improvement in perinatal and neonatal care, birth defects

will become leading cause of neonatal mortality and morbidity. Congenital malformation will begin to emerge as one of the major childhood health problems. As other causes of infant mortality like infections and nutritional deficiencies are being brought under control, congenital malformations are rapidly emerging as one of the major worldwide problem. In India congenital malformations have emerged as the third commonest cause of perinatal mortality [5]. Based on WHO report (2012), about 3 million fetuses and infants are born each year with major congenital anomaly worldwide. The impact of the congenital anomalies on the fetus and newborn infant is great as they are responsible for 495,000 deaths worldwide. The great majority of these deaths occurred during the first year of life and thus contributes mostly to infant mortality rate. Several large population based studies place the incidence of major congenital anomalies at about 2-3% of all live births. It account for 15-30% of all pediatric hospitalizations and they exert a proportionately higher health care cost than other hospitalizations i.e. they impact a significant burden to families and society. The actual numbers of children with congenital anomalies vary from country to country; it was reported to be as low as 1.07% in Japan and as high as 4.3% in Taiwan. Congenital anomalies account for 2% in England, 1.49% in South Africa and 3.65% in India. The reason for the regional difference of congenital anomalies might be attributed to the many factors, such as: maternal risk factors, environmental exposures, ecological, economical, and ethnic and other factors [6].

Congenital anomalies are more frequent among resource constrained families and countries. It is estimated that about 94% of serious congenital anomalies occur in middle- and low-income countries, where mothers are more susceptible to macronutrient and micronutrient malnutrition and may have increased exposure to any agent or factor that induces or increases the incidence of abnormal prenatal development, particularly infection. Advanced maternal age also increases the risk of some chromosomal abnormalities including Down syndrome. Maternal infections such as syphilis and rubella are a significant cause of congenital anomalies. Consanguinity increases the prevalence of rare genetic congenital anomalies and nearly doubles the risk for neonatal and childhood death, intellectual disability and serious birth anomalies in first cousin unions. Iodine deficiency, folic acid insufficiency, overweight, or conditions like diabetes mellitus are linked to some congenital anomalies. For example folic acid insufficiency increases the risk of having a newborn with neural tube defects. Maternal exposure to pesticides, drugs, tobacco and certain chemicals during the early pregnancy, and high doses of radiation increase the risk of having a baby with congenital anomalies. Working or living near or in waste sites, smelters, or mines may also be a risk factor [7].

Aim of the study

The main aim of the study is to assess the effectiveness of structured teaching programme on knowledge regarding prevention of congenital anomalies among staff nurses at selected hospitals, Jaipur

Research methodology

The research design adopted for the present study was pre experimental one group pre test post test research design. The researcher assesses the effectiveness of structured teaching programme on knowledge regarding prevention of congenital anomalies among staff nurses. In present study independent variable refers to the structured teaching programme regarding prevention of congenital anomalies. The dependent variable refers to the knowledge of staff nurses. Demographic variables selected for this study are age, gender, religion, professional qualification, working experience. The present study was conducted in Liberty Hospital, Jaipur, Manipal, Hospital, Jaipur and C.K. Birla Hospital, Jaipur. The target population for the study was staff nurses working in Liberty Hospital, Jaipur, Manipal, Hospital, Jaipur and C.K. Birla Hospital, Jaipur. Sample size is 200 staff nurses working in Liberty Hospital, Jaipur, Manipal, Hospital, Jaipur and C.K. Birla Hospital, Jaipur. The sampling technique used for this study is Non-probability purposive sampling technique.

The instrument select in a research should as far as possible be the vehicle that would best obtain data for drawing conclusions pertinent to the study and add to the body of knowledge in discipline. As the study aimed to assess the effectiveness of structured teaching programme on knowledge regarding prevention of congenital anomalies among staff nurses, the following data collection instruments were constructed in order to obtain data:

- **Section I:** This section is the first section seeking information on demographic background of staff nurses i.e. age, gender, religion, professional qualification, and working experience.
- **Section II:** This section is the second part of structured knowledge questionnaire, which consists of 30 questions which include questions related to introduction, questions related to incidence, questions related to causes, question related to clinical manifestation and questions related to prevention and treatment.

The reliability was calculated by using split half method. Inter rated score was 0.90 and found to be highly reliable. A written formal permission was obtained from medical superintendent of Liberty Hospital, Jaipur, Manipal, Hospital, Jaipur and C.K. Birla Hospital, Jaipur to conduct the study from 10/06/2019 to 30/07/2019. The samples were informed by researcher about the nature and purpose of study. The investigator himself assess the effectiveness of structured teaching programme regarding prevention of congenital anomalies.

Results

Effectiveness Of structured teaching programme regarding prevention of congenital anomalies

There were 200 nursing students taken for the study. Each of them had to answer 30 questions. Their pre and post-test correct answers were recorded and the mean, median, standard deviation, mean difference of the test scores and value of t' test were obtained as below:

Table 1: Mean, Median, SD, Mean Difference and t Test Value

S. No.	Aspect Of Knowledge	Pre Test			Post Test			Mean Difference	t Value
		Mean	Median	SD	Mean	Median	SD		
1.	Questions related to Introduction	5.125	5	1.25	8.67	9	1.01	3.55	29.52
2.	Questions related to incidence	1.17	1	0.37	1.77	2	0.41	0.6	14.73
3.	Questions related to causes	3.95	4	0.92	6.95	7	1.00	3	33.56
4.	Questions related to clinical manifestation	3.45	3	0.92	5.95	6	0.84	2.5	28.23
5.	Questions related to Treatment	1.6	2	0.56	2.65	3	0.52	1.05	19.00
Total		15.3	15	1.71	26	26	1.66	10.7	63.61

The first part that is related to introduction the pre test mean is 5.12, median is 5 and the SD is 1.25 whereas the post test mean is 8.67, median is 9 and SD is 1.01. The mean difference is 3.55. The calculate value of t is 29.52.

The second part that is related to incidence the pre test mean is 1.17, median is 1 and the SD is 0.37 whereas the post test mean is 1.77, median is 2 and SD is 0.41. The mean difference is 0.6. The calculate value of t is 14.73.

The third part that is related to causes the pre test mean is 3.95, median is 4 and the SD is 0.92 whereas the post test mean is 6.95, median is 7 and SD is 1.00. The mean difference is 3. The calculate value of t is 33.56.

The fourth part that is related to clinical manifestation the pre test mean is 3.45, median is 3 and the SD is 0.92 whereas the post test mean is 5.95, median is 6 and SD is 0.84. The mean difference is 2.5. The calculate value of t is 28.23.

The fifth part that is related to prevention and treatment the pre test mean is 1.6, median is 2 and the SD is 0.56 whereas the post test mean is 2.65, median is 3 and SD is 0.52. The

mean difference is 1.05. The calculate value of t is 19.00.

The overall mean of pre test score is 15.3 whereas the mean of post test score is 26 with 10.7 mean differences. The median of pre test score is 15 and the median of post test score is 26 and the standard deviation of pre test was 1.71 whereas in post test the standard deviation was 1.66.

The calculated value of t' is 63.61 at the 0.05 level of significance and the tabulated value of t' is 1.96 at the 0.05 level of significance on 199 degree of freedom.

The calculated value is higher than the tabulated value so we can say that the structured teaching programme on prevention of congenital anomalies can enhance the knowledge of staff nurses. It means that the structured teaching programme regarding prevention of congenital anomalies is effective to improve the knowledge of staff nurses.

Association Level of Knowledge Regarding Prevention of Congenital Anomalies of Staff Nurses with Their Demographic Variable

Table 2: Association Level of Knowledge Regarding Prevention of Congenital Anomalies of Staff Nurses with Their Demographic Variable

S. No.	Demographic Variable	Df	Tabulated Value	Calculated Value	Significant/ Not Significant
1.	Age (in year)	6	12.59	8.44	Not Significant
2.	Gender	2	5.99	6.65	Significant*
3.	Religion	6	12.59	10.28	Not Significant
4.	Professional qualification	6	12.59	20.54	Significant*
5.	Working experience	6	12.59	14.34	Significant*

Data presented in table 02 reveals that the demographic variables like age (χ^2 8.44, $p>0.05$), religion (χ^2 10.28, $p>0.05$), was less than the table value, which indicates that there was no association with the knowledge of staff nurses at 0.05 level of significance. The hypothesis H₂ is rejected.

The demographic variables like gender (χ^2 6.65, $p>0.05$), professional qualification (χ^2 20.54, $p>0.05$), working experience (χ^2 14.34, $p>0.05$) was more than the table value, which indicates that there was association with the knowledge of staff nurse at 0.05 level of significance. The hypothesis H₂ is accepted.

Conclusion

The following conclusion were drawn on the basis of the findings of the study

1. The overall pre test mean of knowledge of staff nurses was 15.3.
2. The overall pre test median of knowledge of staff nurse was 15.
3. The overall pre test SD of knowledge of staff nurses was 1.71.
4. The overall post test mean of knowledge of staff nurses

was 26.

5. The overall post test median of knowledge of staff nurse was 26.
6. The overall post test SD of knowledge of staff nurses was 1.66.
7. The t value was 63.61.
8. The demographic variables like gender, professional qualification, working experience were show the significant association with knowledge of staff nurses.

Conflict of Interest: The authors certify that they have no involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

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