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Effectiveness of structured teaching Programme on knowledge regarding prevention of congenital anomalies among staff nurses at selected hospitals, Jaipur

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Abstract
Pregnancy period is the most exciting and remarkable time for mother because she used to dream acute and healthy baby. Whatever the antenatal mother consumes, it affects the fetus.
Aims and objective: To evaluate the effectiveness of structured teaching programme regarding prevention of congenital anomalies by comparing pre-test post-test knowledge score.
Methodology: quantitative research approach with one group pre-test post-test design was used. 200 staff nurses were selected with purposive sampling technique data were collected with structured questionnaire.
Result: overall mean of pre-test score is 15.3 whereas the mean of post-test score is 26 with 10.7 mean differences 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. Gender, professional qualification and working experience were had significant association with knowledge level.
Summary and conclusion: STP improve the knowledge of staff nurses regarding prevention of congenital anomalies.

Keywords: Effectiveness, structured teaching programme, prevention, congenital anomalies, staff nurses

Introduction
Pregnancy period is the most exciting and remarkable time for mother because she used to dream acute and healthy baby. Whatever the antenatal mother consumes, it affects the fetus [1]. Children with significant birth defects need more medical care, require more frequent hospitalizations, need community support services, and often require special education programmes [2]. 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 [3].

Need of the Study
Congenital anomalies are one of the main causes of the global burden of disease, and low- and middle-income countries are disproportionately affected. These areas are also less likely to have facilities to treat reversible conditions such as clubfoot, leading to more pronounced and long-lasting effects [4].
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 [11]. For the better future of the neonates, an early recognition of correctable defects is essential, which calls for a systematic approach to the study of congenital malformations [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 new born 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 paediatric hospitalizations and they exert a proportionately higher health care cost than other hospitalizations [6].

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. It is estimated that about 94% of serious congenital anomalies occur in middle- and low-income countries, where mothers are more exposure to any agent or factor that induces or increases the incidence of abnormal prenatal development, particularly infection [7].

Aim of Study: To assess the effectiveness of structured teaching programme on knowledge regarding prevention of congenital anomalies among staff nurses at selected hospitals, Jaipur.

Objectives

- To assess the level of knowledge of staff nurses regarding prevention of congenital anomalies before administration of structured teaching programme
- To assess the level of knowledge of staff nurses regarding prevention of congenital anomalies after administration of structured teaching programme
- To evaluate the effectiveness of structured teaching programme regarding prevention of congenital anomalies by comparing pre-test post-test knowledge score
- To find out the association between pre-test knowledge of staff nurses with their selected demographic variables

Hypotheses

H₁: There will be a significant difference between pre-test and post-test level of knowledge scores of staff nurse regarding prevention of congenital anomalies.

H₂: There will be a significant association between the pre-test knowledge score of staff nurses with their selected demographic variables.

Conceptual Framework: The framework of the study is based on the general system theory developed by Von Bertalanffy. System model consists of three phases:

- Input (Demographic factors, which are age, gender, religion, professional qualification and working experiences.)
- Process (Pre-test, and administration of STP regarding congenital anomalies.)
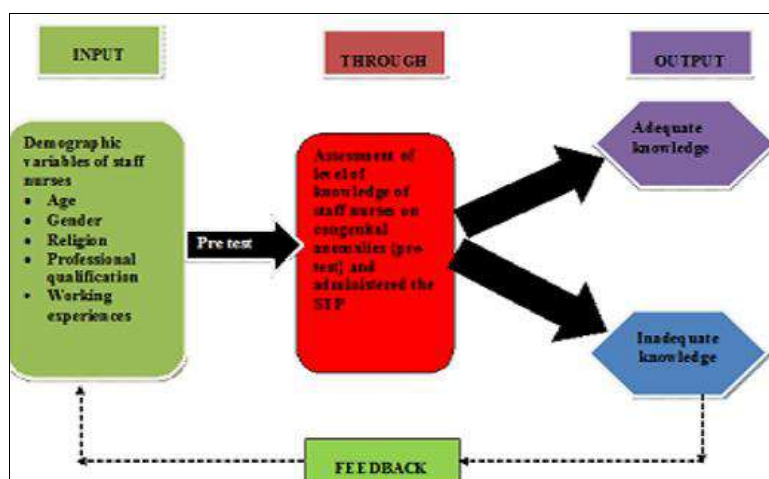- Output (Adequate and inadequate knowledge of staff nurses on congenital anomalies)

Fig 1: Conceptual framework based on Von Bertalanffy general system theory

Review of Literature-

Review of literature for the present study has been organized under the following headings:-

- Studies related to knowledge of staff nurses regarding congenital anomalies. (25)
- Studies related to Effectiveness of Structured Teaching Programme. (15)

Methodology

Research Approach: A quantitative research approach was used for the study.

Research Design: A pre-experimental; one group pre-test post-test research design was used.

Variables under study- Independent Variable (structured teaching programme on prevention of congenital anomalies.), Dependent Variable (knowledge of staff nurses regarding prevention of congenital anomalies) and Demographic Variables (age, gender, religion, professional qualification, and working experience).

Study Setting- Chirayu Hospital, Jaipur, Liberty Hospital, Jaipur, Manipal, Hospital, Jaipur and C.K. Birla Hospital, Jaipur.

Sample & sampling technique: 200 staff nurses were selected with purposive sampling technique.

Data Collection Tool & Procedure: Self structured knowledge questionnaire regarding prevention of congenital anomalies was tool for study. The tool consists of two sections: Section I: demographic information of staff nurses, Section II: structured knowledge questionnaire tool was validated by 11 Experts. The reliability of the tools was established by using split half method, calculated r value was 0.90. Data was collected by implementation of structure questionnaire after getting consent from sample.

Data analysis: Data was analysis with descriptive and inferential statistics.

Result

Table 1: Description of demographic variables of the staff nurses-

S. No.	Demographic Variables	Frequency	Percentage (%)
	Age (in year)		
1	20 – 25	85	42.5%
	26 – 30	55	27.5%
	31 – 35	40	20%
	Above 35 Years	20	10%
	Gender		
2	Male	130	65%
	Female	70	35%
	Religion		
3	Hindu	70	35%
	Muslim	30	15%
	Christian	80	40%
	Sikh	20	10%
	Professional Qualification		
4	G.N.M	60	30%
	B.Sc. Nursing	65	32.5%
	P.B. B. Sc. Nursing	50	25%
	M. Sc. Nursing	25	12.5%
	Working Experience		
5	1 – 5 Years	40	20%
	5 – 10 Years	70	35%
	10 – 15 Years	60	30%
	> 15 Years	30	15%

Researcher was found that majority of sample 42.5% were 20-25 years of age group, 65% sample were male, 40% sample were belong to Christian community, and 32.5% had B.Sc. Nursing as professional qualification and 35% had 5-10 years of working experience.

Part II: Comparison of pre-test and post-test level of knowledge regarding prevention of congenital anomalies
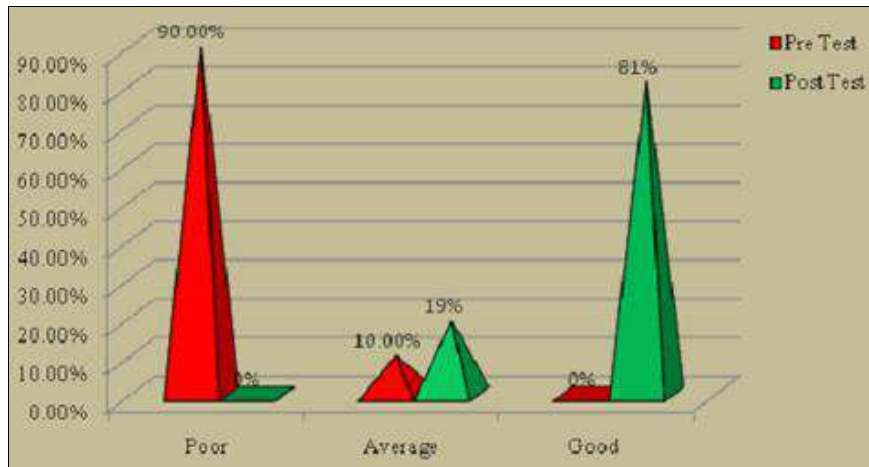

Fig 2: Pre-test and post-test level of knowledge

Figure 2 shows that in pre-test 180 (90%) staff nurses had poor knowledge, 20 (10%) staff nurses had average knowledge and 00 (00%) of staff nurses had good knowledge regarding prevention of congenital anomalies while during post-test 00 (00%) staff nurses had poor knowledge, 38 (19%) staff nurses had average knowledge and 162 (81%) staff nurses had good knowledge regarding prevention of congenital anomalies.

Part III: Evaluate the effectiveness of structured teaching programme regarding prevention of congenital anomalies
Table 1 show that 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.

Table 2: Effectiveness of structured teaching programme regarding prevention of congenital anomalies

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

Part IV: Association level of knowledge regarding prevention of congenital anomalies with selected demographic variables

Table 3: Association level of knowledge with selected demographic variables

S. No.	Variables	Df	X^2 Value	Table Value	Remarks
1	Age (in year)	6	8.44	12.59	NS
2	Gender	2	6.65	5.99	S*
3	Religion	6	10.28	12.59	NS*
4	Professional Qualification	6	20.54	12.59	S*
5	Working Experience	6	14.34	12.59	S*

Calculated chi square value for gender, professional qualification and working experience was 6.65, 20.54 and 14.34 respectively, which is higher than tabled value. So gender, professional qualification and working experience have significant relationship with knowledge level of sample. Hypothesis H2 is accepted.

Conclusion
It is concluded that the level of knowledge regarding prevention of congenital anomalies was inadequate. Therefore the knowledge of the staff nurses can be further improved by providing structured teaching programme.

Nursing Implications
Nursing education; Nurse educator can develop and motivate the staff nurses and other people regarding prevention of congenital anomalies. Nursing practice: provide better and quality health care regarding prevention of congenital anomalies. Nursing administration- Nurse administrators can effectively plan for medical camp and screening programme for staff nurses and other people regarding prevention of congenital anomalies. Nursing Research- baseline study to motivate other researchers to take up in depth studies in the area.

Recommendations
1. A similar study can be replicated on a samples with different demographic variables
2. A similar study can be conducted by taking samples from two different settings like government hospitals, nursing homes, others clinical facilities etc.
3. A similar study can be conducted on a large sample may help to draw more definite conclusions and make generalization.

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