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Effectiveness of Structured Teaching Programme Regarding Pre-Conception Care among Undergraduate Students in Selected Colleges at Tripunithura Municipality

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Abstract

Pregnancy is a unique, exciting and often joyous time in a woman's life, as it highlights the woman's amazing creative and nurturing power. This amazing experience need to be planned well in advance which emphasizes the significance of preconception care[1]. *Materials and methods:* Research design used for this study was pre experimental one group pre test post test design. 30 undergraduate students belonging to the age group of 18-24 years were selected using non probability convenient sampling technique from an Arts College, Thripunithura. The tool used for data collection consisted of two parts. Part A included demographic profile and part B was a structured questionnaire which comprised of two main sections namely (1) pre pregnancy check up and (2) pregnancy including family planning. Pre-test was done which was followed by a structured teaching programme five days prior to the post-test. The pre-test and post-test values were compared by using paired t-test. *Result:* The findings showed that the mean post test knowledge score of the subjects 33.26 was higher than the mean pre-test score of 26.36. The calculated "t" value obtained from paired "t" test was 34.6 which is significant at $P \leq 0.05$ level showing that there is improvement in knowledge of under graduate students. The results of chi-square analysis indicated that there was no significant association between knowledge and demographic variables. *Conclusion:* The research conducted on undergraduate students of a selected college revealed that there was significant lack of knowledge regarding pre-conception care among the undergraduate students and the structured teaching programme had a remarkable role in improving their knowledge.

Keywords: Assess; Effectiveness; Knowledge; Preconception Care; Structured Teaching Programme; Undergraduate Students.

Introduction

Preconception health care is a means to identify the mothers at risk for delivering a preterm infant and to provide an array of available medical, nutritional, and educational interventions to reduce the risk of adverse pregnancy conditions and outcomes. It is given to a woman before pregnancy to manage conditions and behaviours which would be a risk to woman and baby [2].

In recent years, there has been increasing awareness of the persistent burden of maternal, new

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born and child mortality globally. Worldwide, over 3,50,000 women of child bearing age die every year due to complications of pregnancy and child birth, while over 15 million suffer long-term illness or disability. The risks of adverse pregnancy outcomes are much higher in poor countries as compared to developed countries of the world. The majority of maternal deaths occur during labour, delivery and the immediate post partum period, with obstetric haemorrhage being the main medical cause of death. Other causes of maternal mortality include hypertensive diseases, sepsis/infectious, obstructed labour and abortion [3].

A retrospective cohort study was conducted to determine the prevalence and association of obesity and gestational diabetes mellitus with adverse pregnancy outcomes among pregnant women in Fernandez Hospital, South India. Each woman underwent a standardized examination protocol. Women at risk for GDM were subjected to early screening. Among 3,201 pregnant women, the prevalence of GDM and obesity was 8.43% and 19.49% respectively. Results from the study indicated that gestational diabetes and obesity are increasingly important priorities for perinatal care in India [4].

Another major cause of concern is under nutrition among women of reproductive age. Maternal short stature and iron deficiency anaemia increases the risk of death of the mother during delivery, accounting for at least 20% of maternal mortality. Attention to nutrition through adequate dietary intake and supplementation with iron, folate and possible other micronutrients and calcium are likely to be of value [5].

Birth defects can be defined as structural or functional abnormalities, including metabolic disorders, which are present from birth. According to March of Dimes (MOD) Global Report on Birth defects, worldwide 7.9 million births occur annually with serious birth defects and 94% of these births occur in the middle and low income countries [6].

Major birth defects like congenital heart defects, neural tube defects (NTDs) , Down's syndrome, Hemoglobinopathies and Glucose - 6 Phosphate Dehydrogenase Deficiency, cause 20% of infant mortality. They are responsible for a substantial number of childhood hospitalizations. It has been estimated that 70% of birth defects are preventable. Many cost effective, preventive and care strategies are available for control of birth defects such as preconceptional folic acid supplementation for prevention of NTDs; early management of congenital hypothyroidism through neonatal screening, management of hemoglobinopathies through carrier screening & prenatal diagnosis etc. All these strategies demand reproductive and child care before or early in conception [9].

Preconception care can make a positive difference to the health of a mother and her baby. More & more evidence points to the fact that the way a baby is nourished and grown in mother's womb can have an important impact on the baby's health as an adult [10].

The aim of pre-conception care is to prepare a woman for pregnancy, birth and beyond. This preparation ideally should occur for at least four months prior to trying to be pregnant. If this is not possible, try for at least one month's preparation. Pre-conception care improves the chances of falling pregnant more easily, having a healthy pregnancy & healthy baby [11].

According to statistics, hardly 20% of mothers receive all the required components of prenatal care. A news release from the Institute of Medicine indicated the need to change the women's health focus from prenatal care to preconception care, a continuum of care starting before conception [12,13].

Preconception care includes helping a woman and her partner to assess the nutritional status ,to identify and treat any nutritional deficiencies if present, to treat conditions such as Obesity, DM, Hypertension, Epilepsy, Hypothyroidism, Hyperthyroidism ,to vaccinate against Rubella, Hepatitis B and Varicella, to screen for HIV/AIDS and other sexually transmitted infections, family planning for appropriate timing of pregnancies ,genetic risk assessment and pre-conception counselling to reduce the risk of birth defects.

An experimental study was conducted on preconception care and found out that woman's diet should be supplemented with 400 mg folic acid every day which helps in reducing neural tube defect in their babies up to 72%. Blood glucose controlled prior to conception helps in reducing the birth defects and pregnancy loss. Reducing the caffeine consumption can reduce the risk of miscarriage. Counselling given for the woman in this area was found to be effective [14].

The WHO recommends preconception care should include folic acid supplementation for primary prevention of birth defects in developing and developed countries. Epidemiological studies published document that prenatal supplementation with folic acid reduces the risk of neural tube defects, such as spine bifida and anencephaly. A study was conducted on effects and safety of preconceptional folate supplementation for preventing birth defects

in London. Random sampling technique was used for sample selection. Overall, the results were consistent in showing a protective effect of daily folic acid supplementation (alone or in combination with other vitamins and minerals) in preventing NTDs compared with no interventions/placebo or vitamins and minerals without folic acid [15].

Preconception care may be an efficacious tool to reduce risk factors for adverse pregnancy outcomes that are associated with lifestyles and health status before pregnancy. An experimental study was conducted on Indian women to find the effectiveness of structured teaching programme on knowledge and behaviour associated with risks for adverse pregnancy outcomes. Prevalence of risk factors and knowledge was assessed 6 months after the intervention. The finding showed that there was an improvement in knowledge about the preconception behaviours to prevent adverse pregnancy outcomes [16].

A descriptive study was carried out to assess the awareness of undergraduate students regarding preconception health.The results showed that the students demonstrated a low to moderate level of awareness. Students who had previously attended course containing motivation on pregnancy and ethical development correctly answered a greater percentage of items. Females have higher statistically significant awareness than males [17].

The present study is an attempt to assess the level of knowledge on preconception care among undergraduate students at selected colleges. The purpose of this paper is to present the effectiveness of structured teaching programme on preconception care which is tested by comparing the pre-test and post-test knowledge score of under graduate samples between the age group of 18-24 years.

Statement of Problem

"A study to assess the effectiveness of structured teaching programme regarding knowledge about preconception care among undergraduate students in selected colleges at Tripunithura Municipality"

Objectives

1. To assess the pre-test knowledge score regarding pre-conception care among undergraduate students in a selected college at Tripunithura Municipality.
2. To evaluate the effectiveness of structured teaching programme on pre-conception care in terms of gain in knowledge on the preconception care.
3. To find out the association between pre-test knowledge score and selected demographic variables among undergraduate students in a selected college at Tripunithura Municipality.

Hypotheses (At 0.05 Level of Significance)

H1: There will be a significant difference in pre-test and post test knowledge scores of the subject.

H2: There will be a significant association between mean pre-test knowledge score and selected demographic variables.

Materials and Methods

A quantitative research approach with pre experimental one group pre test post test research design was used for the study. The setting of the study was selected colleges in Thripunithura municipality in Ernakulam district.

Variables of the Study

1. Dependent Variable: Knowledge regarding preconceptional care among samples in a selected college at Thripunithura.
2. Independent Variable: Structured teaching programme on knowledge regarding preconceptional care.
3. Attribute Variables: Demographic Variables such as age, religion, socio economic status, type of family, area of residence and previous source of information.

A structured questionnaire, developed by the researchers was used to assess the knowledge of samples on preconception care. A pilot study was conducted.

The structured questionnaire comprised of 50 multiple choice questions with 4 options and the questionnaire was divided into two main sections: Section 1 comprised of items pertaining to demographic data and section 2 comprised of structured questionnaire with two parts that is, (1) items related to pre pregnancy assessment and (2) items related to pregnancy including family planning. Out of the 4 alternatives, three were distracters and one was the correct answer. The demographic data included were age, religion, family monthly income in rupees, educational status of parents, type of family, area of residence and previous source of information.

A structured teaching programme was developed

by the researcher which contained details about the preconception care such as definition, anatomy and physiology of female reproductive system, importance and frequency of pre pregnancy check-up, prevention and treatment of nutritional deficiencies including anaemia, iodine deficiency disorders, protein, vitamin and mineral deficiencies, treatment of pre-existing medical conditions including diabetes mellitus, hypertension, obesity, depression, epilepsy, polycystic ovarian disease, menstrual disorders. It also included menstrual hygiene, control of infectious disease through vaccination against Rubella, Hepatitis B, screening for HIV/AIDS and STD, genetic counselling, pregnancy , antenatal care, breast feeding, family planning and child care.

A formal permission was obtained from the principal of selected College, Thripunithura for data collection and 30 under graduate female samples who fulfilled the inclusion criteria were selected using non probability convenient sampling technique. The samples were assembled in the class room and informed written consent was taken after a thorough explanation about the procedure and they were ensured that confidentiality will be maintained. The investigators conducted the pre-test by distributing the tool (Structured questionnaire). 30 minutes were given to answer the questionnaire and the tool collected back by the investigators. Then the structured teaching programme was administered to the subjects for 1 hour after 10 minutes break. The samples were given opportunity to clarify the doubts after the class. Post test was done on the seventh day after the intervention.

Result

Distribution of Demographic Variables among Samples

From Table1, among the 30 samples, majority of the samples 23(77%), belonged to the age group of 18 - 20 years, Most of the samples 15 (50%) were Christians. All 30(100%) had family monthly income above Rs 6000. All the parents had collegiate education, 30 (100%). Considering the type of family, most of the under graduate samples 20 (67%) belonged to nuclear family & only 10 (23%) belonged to the joint family. When the area of residence was taken into consideration, majority of the samples

Table 1: Distribution of demographic variables among samples N = 30

Demographic variables	Classification	Frequency	Percentage
Age	a.18-20 years	23	77%
	b.20-22 years	7	23%
	c.22-24 years	0	0%
Religion	a. Hindu	10	33%
	b. Muslim	5	17%
	c. Christian	15	50%
	d. Others	0	0%
Family monthly in come in Rupees	a. < 3000	0	0%
		0	0%
Educational Status of the Parent	b. < 3001-6000	30	100%
	c. < 6000	0	0%
	a. Literature	0	0%
Type of Family	b. Primary education	0	0%
	c. Secondary education	30	100%
	d. Collegiate	20	67%
Areas of residence	a. Nuclear Family	10	33%
	b. Joint Family	0	0%
Previous Source of information	c. Extended Family	22	73%
	a. Urban	8	27%
	b. Rural	10	33%
	a. Parents	7	23%
	b. Books & Magazines	0	0%
	c. Neighbourhood	13	44%
	d. Media	0	0%
	e. Health Personnel		

Table 2: Frequency & percentage distribution of samples based on pre test knowledge regarding pre conception care

Knowledge Level	Frequency	Percentage
Poor < 46%	7	23.3%
Average 46% - 59%	16	53.4%
Good ≥ 59%	7	23.3%

Table 3: Frequency & percentage distribution of samples based on post test knowledge regarding pre conception care N=30

Knowledge Level	Frequency	Percentage
Average 46% - 59%	2	6%
Good ≥ 59%	8	27%
Poor < 46%	20	67%

Table 4: Mean, standard deviation, mean difference and paired 't'- value of knowledge regarding pre-conception care among samples. N=30

Variables	Mean	Standard deviation	Range	Mean difference	Paired 't'- value
Pre-test	26.36	3.2	1.3-40.4	6.9	34.6
Post test	33.26	2.6	.067-22		

22 (73%) were living in urban area. About the previous source of information, most of the samples 13 (44%) got information from the media & 10 (33%) from the parents & 7 (23%) from the books & magazines.

Distribution of Samples Based on Pre Test Knowledge Regarding Pre Conception Care

From pre-test data analysis it was found that out of 30 samples, 16 (53.4%) had average knowledge regarding pre conception care & 7(23.3%) had poor knowledge regarding pre conception care and 7(23.3%) had good knowledge and it is shown in table 2. This showed that samples were not having enough knowledge regarding pre conception care which clearly supported the need for teaching programme on the same aspect.

Distribution of Samples Based on Post Test Knowledge Regarding Pre Conception Care

The table 3 below shows that during the posttest, out of 30 samples, 20(67%) had average knowledge regarding pre conception care, 8(27%) had good knowledge and 2(6%) had poor knowledge. This indicated that the teaching programme improved the knowledge of samples in gaining needed information on pre-conception care, which would in turm help them to diagnose and detect risk factors during pre-conception period and treat at the earliest.

Effectiveness of Structured Teaching Programme on Pre-Conception Care by Comparing Pre and Post Test Scores among Samples

The figure 1 and table 4 below reveals that, the mean pre-test knowledge score was 26.36 and post test knowledge score was 33.26, which was higher than the pre-test score. The standard deviation of pre-test knowledge score was 3.2 and post test knowledge score was 2.6. The obtained paired t value was 34.6. Calculated value is less than table value at 0.05 level of significance. Hence the stated hypothesis H1 was accepted.

Association between the Knowledge on Pre-Conception care and Selected Demographic Variables among Samples

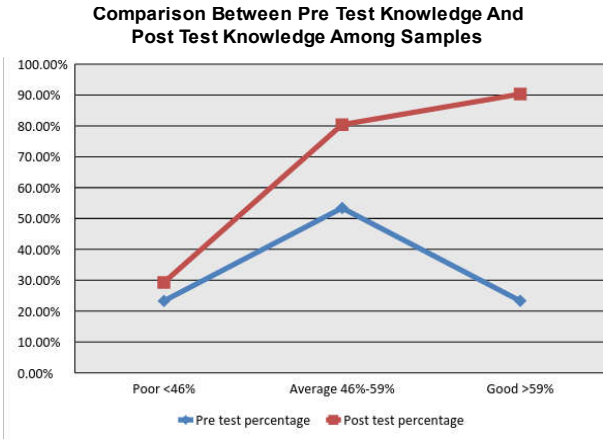

Fig. 1: Comparison between pretest and post test knowledge regarding preconception care among sample

There was no association between knowledge on preconception care and selected Socio-demographic variables of samples.

Discussion

Pre-Test Knowledge Score Regarding Pre-Conceptional Care among Samples

The findings of the pre-test score showed that out of 30 samples, 16(53.4%) had average knowledge regarding pre conception care & 7(23.3%) had poor knowledge regarding pre conception care and 7(23.3%) had good knowledge. The findings of this study are in conformity with the findings reported by Merlin MB that among 60 selected women 33 have inadequate knowledge regarding preconception care. Significant difference was seen in the pre-test mean score value and post-test mean score [18].

Post Test Knowledge Score Regarding Pre Conception Care Among Samples

The findings of the post-test study that out of 30 samples, 20 (67%) had average knowledge regarding

pre conception care, 8 (27%) had good knowledge and 2 (6%) had poor knowledge. This indicated that the teaching programme helped the samples in gaining needed information on pre-conception care, which would in turm help them to diagnose and detect any abnormalities if present during pre-conception period and treat earlier. A study was done among 60 primi gravidae in selected hospital of Erode, Tamilnadu. A structured interview schedule and a teaching programme was conducted. The majority of the primi gravidae mothers had inadequate knowledge regarding antenatal care. Significant difference was seen in the pretest mean score value 44.10 and post test mean score value 58.89 and obtained 't' value was 10.79. This indicated that structured teaching programme was effective [19].

Association between Knowledge and Selected Demographic Variables Regarding Pre Conception Care

The results of chi-square analysis indicated that there was no significant association between knowledge with age, religion, family monthly income in rupees, educational status of the parents, type of family, area of residence and previous source of information. A study done to evaluate the knowledge on preconception care among women of age group 18 to 45 years in a selected rural area, Chennai, India. Data was collected from 80 randomly selected samples by using the structured interview schedule. The paired 't'- value obtained was 17.69 with the $p<0.001$ which is highly significant, which indicated that there is no association of level of knowledge with that of age and education of women [20].

Conclusion

The findings of the study are suggestive of the effectiveness of structured teaching programme in improving the knowledge regarding pre- conception care and thereby reducing the neonatal problems and maternal complications. Improvement of knowledge on pre-conception care provides a better pregnancy outcome. These findings warrant the need of an active role of nurse in pre-conception care for women getting ready to conceive, and to educate them and to empower them for a safe pregnancy and thereby improving the pregnancy outcome. As the interventions have created awareness and brought changes in a group who is at risk for developing complications during pregnancy and child birth, the study has a role in the prevention of maternal and newborn complications in the future.

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