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## Effect of structured teaching program on knowledge and attitude regarding preconception care among adolescent girls

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### Abstract

Preconception care is an essential component of reproductive health which focuses on the conditions and risks that could affect a woman if she becomes pregnant. Every woman of reproductive age who is capable of becoming pregnant is a candidate for preconception care, regardless of whether she is planning to conceive. The present study aims at assessing *the effect of structured teaching program on knowledge and attitude regarding preconception care among adolescent girls at selected Higher Secondary School, Thrissur*. It was a pre experimental one group pre-test post-test design, based on Nola.J. Pender Health Promotion Model. The tools used were structured knowledge questionnaire and semi-structured 5 point Likert scale on attitude followed by structured teaching programme on preconception care. The result revealed that the mean pre-test score on knowledge and attitude was 7.167 and 16.37, after rendering STP mean score has been increased to 28.93 and 48.70 respectively, calculated *t* value for knowledge and attitude was found to be 32.29 and 38.22 ( $p < 0.001$ ) which is highly significant at 0.01 level respectively. The study showed that there was no correlation between the levels of knowledge with attitude of adolescent girls and there was a significant association found between the levels of knowledge of adolescent girls with selected demographic variable (monthly family income).

**Keywords:** Preconception care, Adolescent Girls, Structured teaching program

### 1. Introduction

A woman has very important role in every one's life as mother, wife, sister or daughter. Among her roles, the greatest task she plays is the awesome creation to conceive a baby in her womb. This divine mystery is called reproduction which is the greatest blessing of God to Women. The birth of a healthy baby to a healthy woman depends on a woman's general health and well-being [2]. The reproductive system starts functioning during the adolescent period which is the transitional period, from childhood to adulthood, and spans the ages of 10-19 years old. This stage of development is a critical period for the establishment of lifelong positive and risky health-related behaviors [1].

According to 2011 census, there are 238 million adolescents, comprise 22% of India's total population. Out of the total adolescent population, 12% belong to the 10-14 years age group and nearly 10% are in the 15-19 years age group. Adolescence birth rate by age 18 years is 38.5%.<sup>2</sup>This age group comprises of life requiring nutrition, education, counselling and guidance to ensure their development into healthy adults [3].

Obesity has become a worldwide phenomenon cutting across regional and economic barriers. A cross-sectional study involving school-going children from 9 to 15 years shows the overall prevalence of obesity and overweight to be 11.1% and 14.2% respectively [4]. Hereditary factors play an important role in pregnancy outcomes. A study conducted at Mangalore reveals shows that there is a prevalence rate of 43.2% consanguineous marriage in South India [5].

Events in one phase of life both affect and affected by events in other phases of life. Thus what happens during the early years of life affects adolescents' health and development, and health and development during adolescence in turn affect health during the adult years, ultimately, the health and development of the next generation [6].

An effective intervention for adolescent girls or women before pregnancy can help to identify risk factors such as poor nutritional status and health problems such as chronic

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medical conditions or infectious diseases. Preconception care is that effective intervention which is provided to women of childbearing age, regardless of pregnancy status or desire, before pregnancy, to improve health outcomes for women, newborns and children [6].

### Need of the study and literature review

The teenage years are the best year of one's life. It is a transitional stage of physical and mental human development that occurs between childhood and adulthood. Even though the adolescence are often thought of as a healthy group, many serious diseases in adulthood have their roots in adolescence. Promoting healthy practices during adolescence, and taking steps to better protect young people from health risks is critical to the future of countries health and to the prevention of health problems in adulthood [7].

According to 2011 statistics, every minute in the world, 380 women become pregnant, 190 faces unplanned pregnancy, 110 experiences a pregnancy –related complication, 40 have an unsafe abortion. Adolescent girls dying from pregnancy-related causes accounts for 13% of all maternal deaths. The risk of maternal mortality is twice as high for women aged 15–19 years and five times higher for girls aged 10–14 years compared to women aged 20–29 years [3].

Preconception care recognizes that many adolescent girls and young women will be thrust into motherhood without the knowledge, skills or support they need. A descriptive study was conducted to assess the level of awareness regarding preconception among unmarried college students in selected educational institution, Salem on 2010. Out of 100 samples 37% were having inadequate knowledge regarding preconception care, 61% having moderate knowledge and 2% were having adequate knowledge [8].

Adolescent girls experience greater frequencies of anemia, while their new-borns are more likely to be born prematurely, have low birth weight, or die in the first month of life. A descriptive study was carried out to assess the knowledge regarding prevention of anemia among adolescent girls in Chennai. Out of 700 samples 48% of the samples were in the age group of 16 years. About the assessment of level of knowledge regarding prevention of anemia shows that 50% of the participants had inadequate knowledge. Only 2% had adequate knowledge regarding prevention of anemia [9].

Menstrual education is a vital aspect of adolescent health education. Culture, awareness, and socioeconomic status often exert profound influence on menstrual practices. A community based cross sectional study was conducted to assess the knowledge and practice of menstrual hygiene among rural and urban school going adolescent girls at Nagpur in 2011. Among 387 adolescent girls from 8<sup>th</sup> and 9<sup>th</sup> standard, only 36.95% of the girls were aware of menstruation before menarche [10].

Hereditary factors play an important role in pregnancy outcomes. Consanguineous marriages are one factor where the partners are related by blood or from the same ancestor.

The offspring of consanguineous marriages are more prone to certain genetic disorders like autosomal recessive disorders. A study conducted at Mangalore reveals that there is a prevalence rate of 43.2% consanguineous marriage in South India [11].

Rubella infection acquired in early pregnancy can lead to congenital malformations. A community based cross sectional study was done in All India Institute of medical science, New Delhi, to estimate the immunity status of rubella IgG among unmarried adolescent girls using ELISA method. Out of 230 girls, 189 (82.17%) were detected to be rubella IgG seropositive and 41 seronegative. None of the adolescent girls gave history of immunization with MMR in childhood or rubella vaccine in adolescence [12].

Above studies and statistics proved that providing simple interventions before pregnancy can promote the health of women are thereby reducing maternal and neonatal mortality and morbidity. Adolescents are the future parents. It is better to make the base safe for a safe future. Knowledge of pre conception care has the potential of changing behaviour, modifying risks and improving the health status of future parents [6]. Hence the investigator felt that there is need to educate the adolescent girls about the pre conception care through a teaching program.

### Objectives

- To assess the level of existing knowledge and attitude regarding preconception care among adolescent girls.
- To evaluate the effect of structured teaching programme regarding preconception care among adolescent girls.
- To correlate the level of knowledge with attitude regarding preconception care among adolescent girls.
- To associate the level of knowledge and attitude with selected demographic variables regarding preconception care among adolescent girls.

### Hypotheses

- H<sub>1</sub>: There is a significant increase in the mean post -test knowledge scores than the mean pre- test knowledge scores regarding pre conception care among adolescent girls.
- H<sub>2</sub>: There is a significant correlation between the knowledge with attitude regarding pre conception care among adolescent girls.
- H<sub>3</sub>: There is a significant association of knowledge and attitude of adolescent girls on preconception care with selected demographic variables.

### Conceptual framework

The conceptual frame work for the present study was developed using the concepts from Nola J Pender 'Health Promotion Model' (Revised 2006). The health promotion model describes the multidimensional nature of persons as they interact with their environment to pursue health. The model comprises of three primary components including; Individual characteristics, experience of prior related behaviour and personal factors, behaviour specific cognitions and affect, behavioral outcomes.

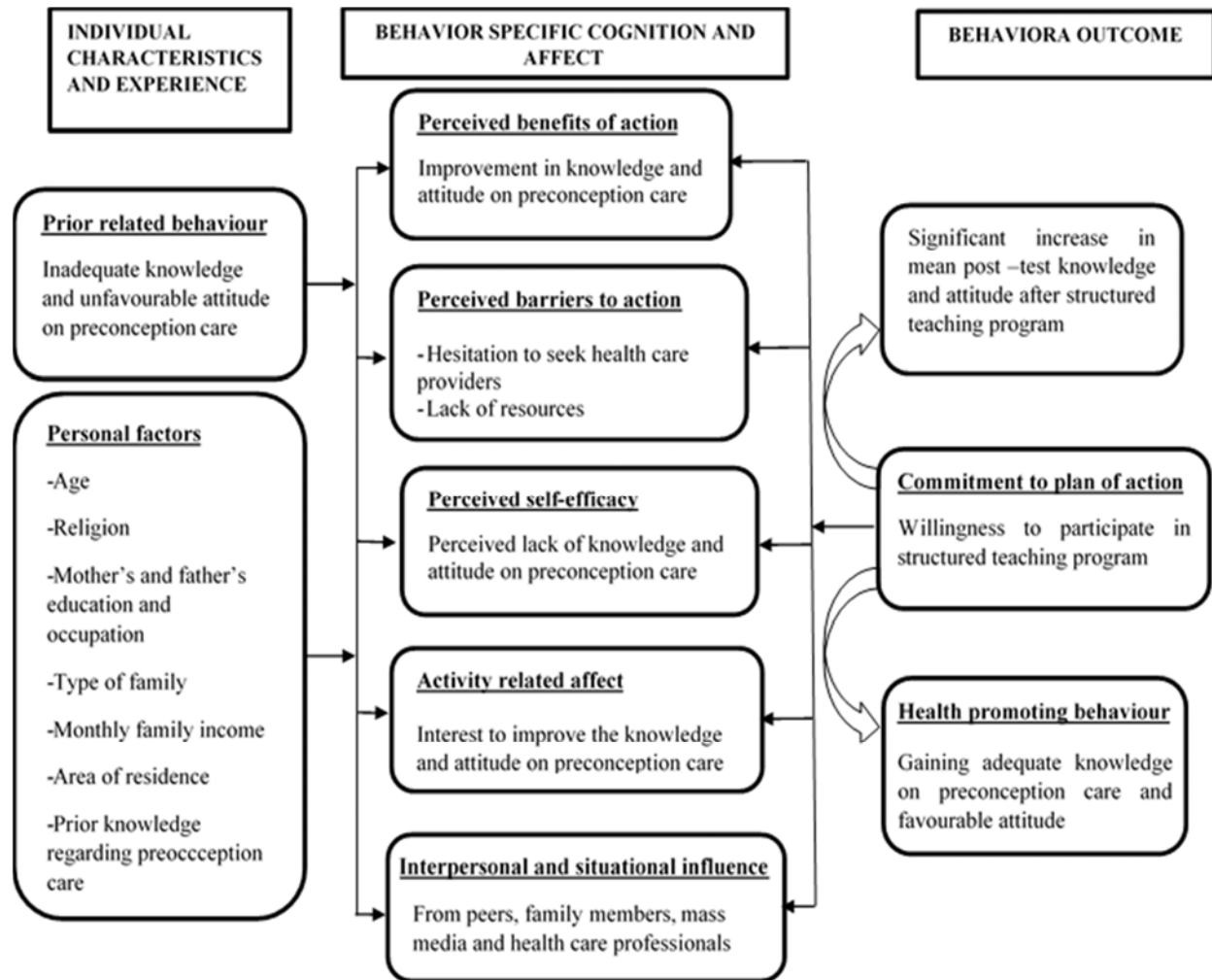


Fig 1: Modified Nola. J. Pender's Health Promotion Model (Revised 2006)

**Research Methodology**

**Research approach & Design:** Quantitative research approach with pre experimental one group pre-test post-test design.

**Setting of the study:** Present study was conducted in AKM Higher secondary school, Poochetty, Thrissur.

**Sampling technique:** Non probability purposive sampling technique.

**Sample size:** 30 adolescent girls were included in this study

**Tool:** The following tools were used.

**Section A:** Demographic profile consists of base line information regarding adolescent girls such as age, religion, education and occupation of parents, type of family, monthly family income, area of residence, previous awareness on preconception care etc.

**Section B:** Structured knowledge questionnaire on preconception care consists of 30 questions. It was classified into 5 sections like the concept of preconception care, importance of exercise and menstrual hygiene, importance of nutrition, importance of genetics and importance of immunization in preconception care.

**Section C:** 5 point semi structured Likert scale to know the attitude of adolescent girls regarding preconception care. It contains 10 statements with response of strongly agree, agree, undecided, disagree and strongly disagree.

**Section D:** STP on preconception care The content was organized under 5 headings like meaning of preconception care, purpose of preconception care, importance of preconception care, components of preconception care such as healthy life style nutrition, genetics and immunization.

**Pilot study:** Pilot study was conducted between 26/12/14 to 3/1/15 on 6 adolescent girls. The analysis of the pilot study revealed that the objectives of the study could be achieved. Based on this information investigator proceeded with actual data collection for the main study.

**Data collection procedure:** Data collection was done for a period of 4 weeks from 5/1/15 -31/1/15. Ethical clearance was obtained from the institutional ethical committee before proceeding for the study on 29/5/2014. Formal administrative permission was obtained from concerned authorities from AKM higher secondary school, Poochetty, Thrissur. The samples of 30 adolescent girls were selected on the basis of inclusion criteria by using purposive sampling technique. After brief self-introduction the investigator explained the purpose of the study and obtained informed consent from the subjects. Initially investigator

administered the structured knowledge questionnaires and attitude scale on preconception care to the samples. They have taken around 20-30 minutes for completion, followed by that investigator carried out structured teaching program on preconception care. After a period of one week investigator administered post- test structured knowledge questionnaires and attitude scale on preconception care.

**Findings**

**Section I:** Frequency and percentage distribution of pre and post -test level of knowledge regarding preconception care among adolescent girls

It revealed that in pre-test 25 (83.30%) adolescent girls were having inadequate level of knowledge, 5(16.70%) adolescent girls were having moderate level of knowledge and no one having adequate level of knowledge. But in post -test all the adolescent girls 30 (100%) of them have adequate level of knowledge on preconception care.

**Section II:** Frequency and percentage distribution of pre and post- test level of attitude regarding preconception care among adolescent girls

In pre- test 29 (96.7%) had unfavourable attitude, only 1(3.30%) had moderate favourable attitude and none of them had favourable attitude on preconception care. In the post test all the samples 30 (100%) had favourable attitude.

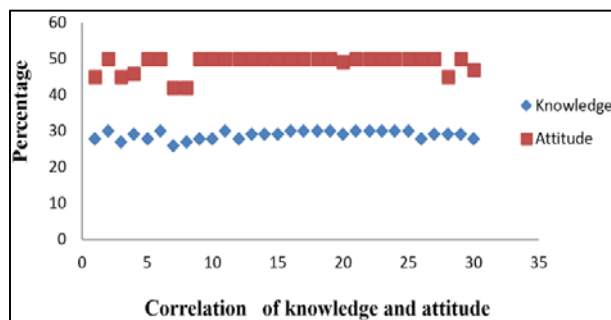
**Section III:** Comparison of mean pre and post- test level of knowledge and attitude regarding preconception care among adolescent girls

It showed the Comparison of mean pre and post- test level of knowledge and attitude regarding preconception care among adolescent girls. The mean knowledge score in the pre-test was 7.167 and the post test is 28.93. The *t*-value for the above mean at degrees of freedom 29 was 32.29 which is highly significant at 0.01 level. There was an increase in the level of mean post -test knowledge score than mean pre-test knowledge score of adolescent girls. Hence research hypothesis was accepted and null hypothesis was rejected.

In case of attitude, mean score in the pre- test was 16.37 and post -test mean is 48.70. The *t* value for the above means at degree of freedom 29 is 38.22, Which is highly significant at 0.01 level. There is an increase in the mean post-test attitude score than the mean pre-test attitude score of adolescent girls. Hence the research hypothesis was accepted and null hypothesis was rejected.

On the inference the structured teaching program was effective in improving the knowledge and attitude of adolescent girls regarding preconception care

**Section IV:** Correlation between levels of knowledge with attitude on preconception care among adolescent girls



**Fig 2:** Scattered diagram displays the correlation between level of knowledge and attitude among adolescent girls.

The calculated Karl Pearson correlation coefficient value is 0.234, *p* value=0.213, which was not statistically significant at 0.05 level (*P*>0.05). So there was no correlation found between level of knowledge and attitude. Hence the null hypothesis was accepted and research hypothesis is rejected. So it is concluded that there was no statistically significant correlation found between level of knowledge and attitude regarding preconception care.

**Section V:** Association of level of knowledge and attitude with selected demographic variables.

**Table 1**

Demographic variables	$\chi^2$	P value
Age of adolescent girls	1.826	0.890
Mother's education	0.670	0.413
Father's education	0.067	0.028
Mother's occupation	0.228	0.854
Monthly family income	5.761	0.016*

\* - Significant

The above table reveals that there is no significant association found between level of knowledge and selected demographic variables such as age ( $\chi^2 = 1.826$ , *p*=0.890), Mother's education ( $\chi^2 = 0.670$ , *p*=0.413), Father's education ( $\chi^2 = 0.067$ , *p*=0.028), Mother's Occupation ( $\chi^2 = 0.228$ , *p*=0.854) except monthly family income the ( $\chi^2 = 5.761$ , *p*=0.016) which is significant at 0.05 level.

**Table 2**

Demographic variables	$\gamma$	P value
Age of adolescent girls	0.311	0.094
Mother's education	0.156	0.411
Father's education	-0.079	0.679
Monthly family income	0.235	0.211

$\gamma$  -Spearman rank correlation value,

In case of attitude all the cell frequencies were zero so that association could not be possible with Chi square test. So Spearman's Rank correlation test was used. The study also revealed that there is no significant association found between attitude and selected demographic variables such as age ( $\gamma=0.311$ , *P*=0.094), Mother's education ( $\gamma=0.156$ , *P*=0.411), Father's education ( $\gamma=-0.079$ , *P*=0.679) and Monthly family income ( $\gamma=0.235$ , *P*= 0.211).

**Discussion**

**The effect of structured teaching program regarding preconception among adolescent girls**

The mean post- test knowledge is significantly higher than that of mean pre-test knowledge score. The mean score before the administration of structured teaching program is 7.167 and the mean score in the post test is 28.93. The *t*-value for the above mean at degrees of freedom 29 was 32.29 which is highly significant at 0.01 level. The mean post- test attitude is significantly higher than that of mean pre -test attitude scores. The mean attitude score in the pre-test was 16.37 and post- test mean was 37.70. The *t* values for the above mean at degree of freedom 29 was 65.162, Which is highly significant at 0.01 level.

The present study findings is in accordance with an experimental study for assessing the effect of STP on preconception care among women in age group of 18 to45 years in a selected rural area, Chennai, India. Data were collected from 80 randomly selected samples by using the structured interview schedule. The overall knowledge mean

value in experimental group was 48.69 with the SD of 17.41 where as in the control group the mean value was only 5.36 with the SD of 11.94. After STP the paired *t* value was 17.69 ( $p < 0.001$ ) which is highly significant. So, the study concluded that there is an improvement in knowledge on preconception care among women [13].

#### **Correlate the level of knowledge and attitude regarding preconception care among adolescent girls**

The correlation between knowledge and attitude is statistically tested by Karl Pearson correlation coefficient. The obtained score was  $r = 0.234$ ,  $p = 0.213$ , was not statistically significant at 0.05 level ( $P > 0.05$ ). And it is concluded that there was no correlation found between knowledge and attitude regarding preconception care.

This result is contradicted by a cross sectional study which was aimed to determine the knowledge and decision making skill regarding preconception care among midwifery students in Tehran, Iran and Shahid, Beheshti. Out of 140 samples, the mean score for knowledge of preconception care was 54.23 and for clinical decision making 35.62. All units remained at average in both cases. A significant relationship was seen between the level of knowledge and the decision making skill. The knowledge and decision making skills of midwives were in an average level [14].

#### **Associate the level of knowledge and attitude with selected demographic variables among adolescent girls regarding preconception care.**

The study findings revealed that except monthly family income there was no association of selected demographic variables such as age of adolescent girls, mother's and father's education, mother's occupation with the level of knowledge. In case of attitude there was no association found between the level of attitude with any of selected demographic variables.

This result was supported by a descriptive study which was conducted in a selected villages of Vallioor, Kanyakumari District among 100 adolescent girls. This study revealed that 53% of the sample had inadequate knowledge, 46% had average knowledge and only 1% had adequate knowledge. This study also shows that there is significant association between knowledge and educational status, family monthly income and source of information [15].

#### **Nursing Implication**

- It paves the way in emphasizing a holistic care approach in nursing training period by encouraging the students to give health education to the women and also to adolescent girls regarding various aspects of preconception care.
- The study findings helps to emphasize those activities, which promote the health of women and protect them from those complications which can be occur during, before or after delivery by improving the healthy behaviors from adolescent period itself.
- The study findings helps nursing administrator to take the initiative in organizing in services and continuing educational program for staff nurses regarding various aspects of preconception care.
- It serve as a research evidence to prove the cost effectiveness of preconception care in reducing the maternal morbidity, mortality rates and also complications during delivery and complications to the unborn child also.

#### **Conclusion**

Preconception care is an essential component of reproductive health which focuses on the condition and risks that could affect a woman if she becomes pregnant. Knowledge of reproductive health should be given to the adolescent period itself as they were the future parents. The present study showed that most of the samples had inadequate knowledge and unfavourable attitude regarding preconception care. After administering the structured teaching program the result showed that the knowledge score and attitude score was raised to 100%. The result also showed that there was a negative correlation of knowledge and attitude.

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