

## Original Research

# Preconception Care: Existing Knowledge in Karnataka, India and Need for an Intervention

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## ABSTRACT

### Background

Preconception care improves pregnancy outcomes. The aim of preconception care is to identify situation in which the parents particularly mother or the fetus may be in any additional health risk, and to take steps to minimize the risk before pregnancy is possible. But the concept of preconception care is not as popular as in western countries comparing to India where the number of maternal and newborn morbidity and mortality is high.

### Objectives

To assess the level of knowledge among married women on preconception care by structured knowledge questionnaire; determine the effectiveness of informational booklet in terms of gain in knowledge scores; find the association between pre-test knowledge score and selected variables like age, education, occupation, type of family and parity.

### Materials and methods

The study was carried out among married women between the age group of 18-35 residing in a selected village of Udupi District, Karnataka, India. An evaluative approach with one group pre-test and post-test design was used. Frequency, percentage, paired *t*-test and Chi-square test were used to analyze the data.

### Results

Majority (55%) of the women had poor knowledge and 45% women had average knowledge in pre-test. In the post-test 57% of women had good knowledge and 43% had average knowledge. Mean difference between the pre-test and post-test knowledge score was 7.92,  $p < 0.001$  which showed an improvement in knowledge scores among women. An association was found between educational status and knowledge among women which can be inferred that the level of knowledge is dependent on the level of education.

### Conclusion

Majority of the married women had poor knowledge on preconception care and an informational booklet on preconception care is an effective intervention in improving the knowledge.

### Keywords

Preconception care; Married women; Information booklet; Knowledge level.

## INTRODUCTION

Every pregnant woman has 2 to 3% baseline risk of giving birth to a baby with defect or mental retardation. A higher incidence of neural tube defects (11.4/1000) was reported in Karnataka in the year 2007.<sup>1</sup>

A developing country like India, preconception care is a new area and is not practiced widely. Promoting the health of women, men, and families before pregnancy is an important aspect of family-centered maternal and newborn care but in our country many people are unaware of it.<sup>1</sup> The health of the mother, prior to her pregnancy, is vital to the ultimate health of the baby.

Preconception care should be practiced with much importance in developing countries where neonatal, maternal mortality and morbidity is high. A cross-sectional study was conducted among women receiving antenatal care to determine the awareness and practice of preconception care. The mean age of the participants were  $30.0 \pm 5.0$ -years. Of these, (43%) women had heard of preconception care and the rest of the participants (57%) were unaware about the preconception care.<sup>2</sup>

Another descriptive cross-sectional study was conducted to find the knowledge and practice regarding preconception care among 100 antenatal mothers. The result showed that 51% of the women had inadequate level of knowledge and 49% of the participants had poor practice.<sup>3</sup> The present study also showed the importance of preconception awareness program among antenatal women.

Telephone survey was conducted among 2002 women aged 18-45-years and found only half of the women in reproductive age reported receiving counseling about planning of pregnancy. One-third (34%) of women surveyed did not receive routine physical examinations and screening services, and majority (62%) received no health counseling.<sup>4</sup> This study emphasizes the importance of health teaching and developing various methods to implement health teaching.

The present study was conducted to find out existing level of knowledge on preconception care and to develop an effective intervention to improve the knowledge level.

## MATERIALS AND METHODS

An evaluative method with one group pre-test and post-test model was used for the study. The participants of the study comprises of women who were between the age group of 18-35-years; legally married and want to conceive and able to read and write Kannada. Research setting was identified by using simple random sampling. Participants of the study were selected using purposive sampling. Sample size was 100. Informed consent was taken from all the participants.

The pre-test was done on the first day by administering a structured, valid and reliable knowledge questionnaire and an information booklet on preconception care was given to the women. On eighth day of the pre-test, post-test was carried out to assess the gain in knowledge scores among women regarding the preconception care.

Statistical package for the social sciences (SPSS) software 16 was used for data analysis. Frequency, percentage, paired *t*-test was used to determine the effectiveness of booklet and Chi-square test was applied to find the association between knowledge scores and selected variables like age, occupation, education, type of family and parity of the women.

## RESULTS

The data regarding sample characteristics is shown in Table 1. Most (43 %) of the women in the study were in the age group of 21-25. The educational status of (29%) women were secondary school leaving certificate (SSLC). Majority of the women (60%) were from joint families and were unemployed (85%). Forty five percent of the women had delivered once.

The data presented in Table 1 shows that most (56.1%) of the women in the study were in the age group of 21-25. The educational status of (56.1%) women were 10<sup>th</sup> standard. Majority of the women (58.5%) were from joint family and 52 (78%) were semiskilled workers. 51.2% of the women had got pregnant once. In the pre-test, majority (55%) of women had poor knowledge and 45% had average knowledge. In the post-test, 57 % had good knowledge and 43% had average knowledge. Since the data was normally distributed, a paired *t*-test was used to assess the effectiveness of the booklet on knowledge scores and presented in Table 2.

**Table 1.** Description of Sample Characteristics

| N=100                                   |           |                |
|-----------------------------------------|-----------|----------------|
| Sample Characteristics                  | Frequency | Percentage (%) |
| <b>Age in years</b>                     |           |                |
| 15-20                                   | 6         | 6              |
| 21-25                                   | 43        | 43             |
| 26-30                                   | 36        | 36             |
| 31-35                                   | 15        | 15             |
| <b>Educational status</b>               |           |                |
| Primary school                          | 3         | 3              |
| Upper primary School                    | 18        | 18             |
| High School                             | 13        | 13             |
| SSLC                                    | 29        | 29             |
| PUC                                     | 12        | 12             |
| Diploma / Graduate                      | 21        | 21             |
| Post Graduate                           | 4         | 4              |
| <b>Occupation</b>                       |           |                |
| Unemployed                              | 85        | 85             |
| Domestic Worker                         | 7         | 7              |
| Semi Skilled Worker                     | 3         | 3              |
| Skilled Worker                          | 3         | 3              |
| High Administrative Job                 | 2         | 2              |
| <b>Type of family</b>                   |           |                |
| Nuclear                                 | 40        | 40             |
| Joint                                   | 60        | 60             |
| <b>How many times you got pregnant?</b> |           |                |
| Nil                                     | 26        | 26             |
| Once                                    | 45        | 45             |
| Twice                                   | 27        | 27             |
| Thrice                                  | 2         | 2              |

There was a significant difference in the knowledge scores for pre-test ( $M=8.47$ ,  $SD=2.48$ ) and post-test ( $M=16.39$ ,

**Table 2.** Mean, standard deviation, Mean difference, t-value and p-value of pre-test and post-test knowledge scores on preconception care

| N=100     |       |                    |                 |         |         |
|-----------|-------|--------------------|-----------------|---------|---------|
| Group     | Mean  | Standard Deviation | Mean Difference | t-value | p-value |
| Pre-test  | 8.47  | 2.476              | 7.92            | -27.631 | 0.001   |
| Post-test | 16.39 | 2.788              |                 |         |         |

**Table 3.** Association between Pre-test Scores and Selected Variables

| N=100          |                                   |         |      |          |    |         |
|----------------|-----------------------------------|---------|------|----------|----|---------|
| Variables      | Knowledge Scores                  |         |      | $\chi^2$ | df | p Value |
|                | Poor                              | Average | Good |          |    |         |
| Age            | 15-25                             | 26      | 26   | 1.094    | 1  | 0.296   |
|                | 26-35                             | 29      | 19   |          |    |         |
| Education      | Below PUC                         | 42      | 21   | 9.364    | 1  | 0.002*  |
|                | PUC and above                     | 13      | 24   |          |    |         |
| Occupation     | Unemployed                        | 50      | 39   | 2.855    | 2  | 0.235   |
|                | Domestic and semi skilled workers | 4       | 2    |          |    |         |
|                | Skilled workers                   | 1       | 4    |          |    |         |
| Type of family | Nuclear                           | 18      | 22   | 2.694    | 1  | 0.101   |
|                | Joint                             | 37      | 23   |          |    |         |
| Parity         | Once and below                    | 35      | 32   | 0.625    | 1  | 0.429   |
|                | Two and above                     | 20      | 13   |          |    |         |

\*  $p < 0.05$

SD=2.79),  $t(98) = -27.63$ ,  $p = 0.001$ . Hence it can be inferred that the knowledge of women on preconception care had improved after the administration of informational booklet.

The data presented in Table 3 showed that education level of the participants are significantly associated with knowledge scores (Chi square value is 9.364 and  $p$  value 0.001). It can be inferred that knowledge is dependent on the level of education. There is no association between level of knowledge and age, occupation and parity.

## DISCUSSION

The finding of the present study revealed an increase in mean knowledge scores (7.92) after the administration of informational booklet. The  $p$  value was 0.001 which was significant at 0.05 level. The findings in the study is supported by a research done to evaluate the effectiveness of structured teaching programme on preconception care among women in the age group of 18 to 45-years in a selected rural area, Chennai, India. The overall knowledge mean value in experimental group was 48.69 with the standard deviation of 17.41 where as in the control group the mean value was only 59.36 with the standard deviation of 11.94. The investigators found improvement in knowledge scores ( $t = 17.69$ ;  $p < 0.001$ ) after the structured teaching programme.<sup>5</sup> Another study was conducted to assess the effectiveness of structured teaching programme re-

garding preconception care among women in selected hospital of Erode, Tamilnadu, India. The mean post-test knowledge (58.89) was higher than the mean pre-test knowledge (44.10). This indicates that structured teaching programme was effective in improving the knowledge.<sup>6</sup>

Results from a similar study among women showed that in experimental group, the mean post-test knowledge score (61.17) was higher than the mean pre-test knowledge score of (16.13) of control group ( $t = -33.01$ ) and  $p$  value was 0.001. This study indicates that planned teaching programme was effective in improving the knowledge of women regarding preconception care.<sup>7</sup>

## CONCLUSION

The study depicted the level of knowledge existing in our community and also the importance of appropriate strategies for improving the knowledge. The study found that an informational booklet was effective in improving the knowledge on preconception care. The study did not explore the retention of knowledge for a longer duration and did not attempt to prevent the extraneous variables like mass media influence and knowledge from other factors. Further study can be done to assess the knowledge, practice and attitude of women towards preconception care in rural and urban areas.

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## ETHICAL CONSIDERATIONS

Ethical clearance was obtained from Institutional Research Committee and also informed consent from the participants was obtained.

## CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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