

Awareness and practices related to preconception health among women of reproductive age attending a tertiary care hospital in Eastern India

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ABSTRACT

Background: Preconception health refers to the health status of women during their reproductive years before conception occurs. Optimal preconception health improves maternal and neonatal outcomes and reduces adverse pregnancy outcomes. Objectives were to assess the level of awareness regarding preconception health and to identify factors associated with adequate awareness among women of reproductive age.

Methods: A hospital-based cross-sectional study was conducted among women aged 18-45 years attending outpatient departments of a tertiary care hospital in eastern India from November 2024 to April 2025. Data were collected using a pre-tested structured questionnaire.

Results: Among 220 women studied, 41.8% had adequate awareness regarding preconception health. Higher education, previous antenatal care exposure, and planned pregnancy were significantly associated with adequate awareness.

Conclusions: Awareness regarding preconception health was suboptimal. Strengthening preconception counselling through routine health services is essential.

Keywords: Preconception care, Reproductive health, Awareness, Women of reproductive age, Maternal health

INTRODUCTION

Preconception health encompasses biomedical, behavioral, and social health interventions provided before pregnancy to improve maternal and child outcomes.¹ Unaddressed conditions such as anaemia, malnutrition, diabetes, hypertension, and harmful lifestyle practices can adversely affect pregnancy outcomes.^{2,3} The world health organization recognizes preconception care as a key component of the continuum of maternal and child health services.⁴ Despite this recognition, utilization of preconception services remains limited in many low- and middle-income countries.⁵

In India, maternal morbidity and adverse birth outcomes remain major public health concerns. Limited awareness and lack of structured preconception services contribute to poor uptake of preconception care. Data from eastern India are limited; hence, the present study was undertaken to

assess awareness and practices related to preconception health among women of reproductive age.

METHODS

Study design

It was a hospital-based cross-sectional study design.

Study area

Study carried out at Hitech Medical College and Hospital, Bhubaneswar, Odisha.

Study period

Study conducted for six months between 1st November 2024 and 30th April 2025.

Study population

Women of reproductive age (18-45 years) attending outpatient departments were selected for study.

Inclusion criteria

Women aged 18-45 years who consented to participate were included in study.

Exclusion criteria

Pregnant women, women with severe illness, and those unwilling to participate were excluded from study.

Sample size calculation

Sample size was calculated using the formula

$$n = Z^2 pq/d^2$$

Based on previous studies, awareness of preconception care was assumed to be 40%.⁶ With absolute precision of 6% and 95% confidence interval, the calculated sample size was 256. Considering feasibility and non-response, 220 women were included.

Data collection

A pre-tested structured questionnaire collected information on socio-demographic variables, knowledge of preconception health components, and practices.

Operational definition

Adequate awareness was defined as correctly answering at least 50% of awareness-related questions.

Statistical analysis

Data were analyzed using SPSS version 20. Descriptive statistics, chi-square test and multivariate logistic regression were applied. P<0.05 considered statistically significant.

RESULTS

A total of 220 women participated in the study, with a mean age of 26.8±5.4 years. Overall, 92 women (41.8%) had adequate awareness regarding preconception health.

Table 1 shows socio-demographic characteristics of the participants. More than half of women were aged above 25 years (56.4%), 53.6% had education of higher secondary level or above, and 47.3% had previous exposure to antenatal care services.

Table 2 shows awareness was highest for avoidance of tobacco and alcohol (50.9%), followed by folic acid

supplementation (48.6%). Awareness regarding chronic disease control prior to conception was comparatively low (35.9%).

Table 1: Socio-demographic characteristics of participants, (n=220).

Variables	N	Percentage (%)
Age ≤25 years	96	43.6
Age >25 years	124	56.4
Higher secondary and above education	118	53.6
Ever married	142	64.5
Previous ANC exposure	104	47.3

Table 2: Awareness of components of preconception health, (n=220).

Components	Aware, N (%)	Not aware, N (%)
Folic acid supplementation	107 (48.6)	113 (51.4)
Anaemia correction	98 (44.5)	122 (55.5)
Chronic disease control	79 (35.9)	141 (64.1)
Avoidance of tobacco/alcohol	112 (50.9)	108 (49.1)

Table 3: Factors associated with adequate preconception health awareness.

Factors	AOR	95% CI	P value
Higher education	2.6	1.5-4.5	<0.001
Previous ANC exposure	2.1	1.2-3.7	0.008
Planned pregnancy	1.9	1.1-3.3	0.02

Multivariate logistic regression analysis (Table 3) revealed that higher education, previous antenatal care exposure, and planned pregnancy were independently associated with adequate awareness.

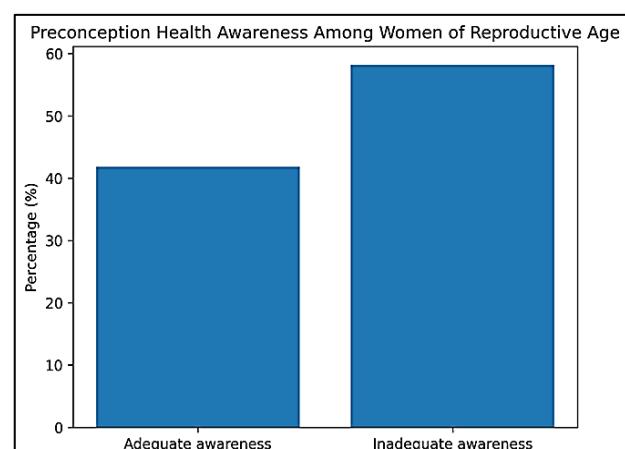


Figure 1: Preconception health awareness status.

Bar diagram showing proportion of women with adequate and inadequate awareness regarding preconception health.

DISCUSSION

The present study demonstrates that awareness regarding preconception health among women of reproductive age was suboptimal, which is consistent with findings from other Indian and international studies.^{7,8} Education emerged as a significant predictor of awareness, emphasizing the importance of female literacy and empowerment in improving reproductive health outcomes.⁹

Women who had prior exposure to antenatal care services showed significantly better awareness, similar to observations reported in earlier studies.^{10,11} This highlights the potential of existing maternal health platforms as effective channels for delivering preconception counselling.

Planned pregnancy was also associated with better awareness, suggesting that intentional reproductive planning encourages proactive health-seeking behaviour. Integration of preconception care into routine reproductive and maternal health services, along with community-based awareness programmes, can improve uptake and contribute to better maternal and neonatal outcomes.¹²⁻¹⁵

Limitations

Being a hospital-based cross-sectional study, the findings may not be generalizable to the community. Information was self-reported and therefore subject to recall bias.

CONCLUSION

Awareness regarding preconception health among women of reproductive age was inadequate. Strengthening preconception counselling through existing health systems and community outreach is essential to improve maternal and neonatal outcomes.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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