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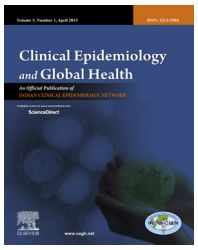

Original Article

How far is universal coverage of antenatal care (ANC) in India? An evaluation of coverage and expenditure from a national survey

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ABSTRACT

Introduction: India along with Nigeria is estimated to account for over 1/3rd of all maternal deaths worldwide in the year 2015. However, among all the maternal deaths, most of the deaths can be prevented. But for that all women need access to antenatal care (ANC) during pregnancy.

Objective: The present study aims to highlight the current status of ANC coverage in India. Further this study examines the extent of expenditure incurred for seeking ANC.

Materials and methods: Data for the analyses are drawn from the 71st round of the National Sample Survey Office conducted between January to June 2014. Bivariate and logistic regression analyses have been used to fulfil the objectives of this paper.

Results: Despite having a vast public health infrastructure and several safe motherhood programmes, overall 9.2% pregnant women did not consume IFA supplements, 6.6% did not receive TT dose and 10.3% pregnant women could not receive any ANC during pregnancy in India. Among the states, Uttar Pradesh accounted for a large number (16.7%) of pregnant women who neither did consume IFA tablets nor received any ANC (22.4%) during pregnancy. However, a woman had to spend a large amount of money to seek ANC from both public and private health care facilities.

Conclusion: After a tremendous emphasis given to delivery of free ANC services throughout the country, India is still very far from achieving universal coverage of ANC.

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1. Introduction

As per the latest report on the trends in maternal mortality between 1990 and 2015, India accounts for almost 15% of global maternal mortality burden with close to 45,000 deaths in 2015.[1] Together, India and Nigeria are estimated to account for over 1/3rd of all maternal deaths worldwide in the same year.[1] In short, maternity is not significantly safe in India over time as, women die as a result of complications during and following

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pregnancy and childbearing which is the leading cause of mortality among women of reproductive age in India. Most of the maternal deaths can be prevented, but all women need access to antenatal care (ANC) during pregnancy and childbirth.[2,3]

The ANC is an essential element for the safe motherhood and plays a lifesaving role in the maternal and infant outcomes.[4–6] Preferably, this care should begin soon after the conception and continue throughout pregnancy.[7] The World Health Organization (WHO) has recommended that all pregnant women should avail at least four antenatal visits to avoid the health risks during pregnancy.[8] However, the Indian Government suggested that, all pregnant woman must have at least three antenatal visits and that the first visit is preferably in the first trimester which should include; health history, weight and blood pressure check-up followed by few required laboratory examinations like complete blood count, urine analysis, and stool test. On subsequent visits, Iron supplementation along with Folic Acid in the form of Iron Folic Acid (IFA) tablets and two doses of Tetanus Toxoid (TT) vaccine is provided under the reproductive and child health programme.[6,7,9] Antenatal visits have several benefits like early detection of pregnancy complications, anaemia, and related health problems, increase awareness about the care during delivery and also increase the chances of further health care utilization.[10,11]

In previous years there has been a significant rise in maternity-related health care expenditure including ANC, which is often cited as an important barrier in utilizing health care during pregnancy and childbirth. This has led to a renewed call for action to reduce the affordability constraints for the pregnant women to access maternal health care.[5,6]

The National Rural Health Mission (NRHM) is envisaged to deliver free and quality ANC as one of the major interventions to achieve the goal for reduction in maternal mortality.[12] The Millennium Declaration has also recognized the importance of regular monitoring and examination of the progress and other dimensions of maternal and child health care under the fourth and the fifth Millennium Development Goals.[13] But a recent report, jointly published by UNICEF, WHO, World Bank and UNDP, has argued that India could not achieve MDG-5 target as the Indian government has failed to ensure access to better quality maternal health care services at affordable prices.[1] Therefore, the present study aims to highlight the current status of ANC coverage among the pregnant women in India. Further, this study examines the extent of expenditure incurred for seeking ANC by the households, by socio-demographic characteristics.

2. Data and methods

2.1. Data source

The present paper is based on the unit level data of the 71st round of the National Sample Survey Office (NSSO) Schedule 25.0 which was surveyed during January to June 2014. This survey was conducted throughout the country in both rural and urban parts of the states on the theme ''Key Indicators of the Social Consumption in India: Health''. The survey had a nationally indicative sample of 65,932 households with 333,104 individuals selected from all over India. Purposively, it provided the information on prenatal and postnatal care for women of age 15–49 years during the last 365 days.[14] Data on ANC and postnatal care (PNC) expenditures were collected from women aged 15–49 years who had delivered a baby or had been carrying in the 365 days before the survey. Information on delivery care expenditure was collected as it experienced during the last 365 days for in-patient medical care during childbirth. In all, 19,482 women were reported being pregnant in the 365 days before the survey. Out of these pregnant women, 17,418 were reported to have given live birth, of which 14,587 women were reported having institutional delivery during the reference period. Within this sample, only 13,946 women had utilized any ANC, while only 12,443 women had received PNC.

2.2. Variable used

Childbearing expenditure in all three modules was collected by the level of care (public or private) for ANC, PNC and delivery care. It contained information about IFA supplements, TT dose and any other ANCs provided to women of 15–49 years age. These three variables were dichotomous in nature and were coded as 0 ''Not taken'' and 1 ''Otherwise'' used as dependent variable. The independent variables included in the analysis were place of residence, monthly per capita expenditure (MPCE), mother's age at birth, place of delivery and socio-demographic characteristics of the household.

2.3. Statistical analysis

Bivariate and logistic regression analyses had been used to fulfil the objectives of this paper. Bivariate analysis was used to understand the differentials of ANC (not received) and ANC expenditure (women who received ANC) by socioeconomic and demographic variables. The logistic regression (multivariate analysis) was normally used when the independent variables comprise both numerical and nominal measures, and the outcome variables (dependent variables) were binary or dichotomous. The advantage of logistic regression analysis is that it needs no assumption about the distribution of the independent variables, and the regression coefficient can be interpreted in terms of the odds ratio. The binary response (IFA/TT/any other/not used) for each individual were related to a set of categorical predictors X, (women age group, mothers education level, wealth quintile, place of residence, religion, caste, etc.).

The logit-link function is formulated as:

$$\text{logit}(\pi_{ij}) = \log\left[\frac{\pi_i}{1-\pi_i}\right] = \beta_0 + \beta(X) + \epsilon$$

The probability of using any ANC (IFA/TT/any other) care is taken as π_i. The parameter β_0 estimates the odds of using any ANC care for the reference group further, the parameter β estimates with maximum likelihood, and the differential log odds of using any ANC associated with the predictor X, as compared to the reference group. Odds ratios (OR) and predicted probabilities (PP) with robust error were calculated. Statistical analysis was executed using STATA version 14.0

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