

Original Research Article

A study to assess the awareness and uptake of Janani Suraksha Yojana among the women attending a tertiary care hospital

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ABSTRACT

Background: Maternal mortality continues to be a pressing issue in India, necessitating ongoing efforts to improve maternal health and reduce the maternal mortality ratio. Launched in 2011, the Janani Suraksha Yojana is a significant initiative by the Government of India aimed at incentivizing pregnant women to deliver in health facilities. This study examines the awareness and uptake of the JSY scheme among women attending a tertiary care hospital in Udaipur.

Methods: A hospital-based cross-sectional study was conducted at Pannadhyay Zanana Hospital, MBGH, Udaipur, over six months. A total of 260 women meeting the inclusion criteria participated. Data were collected using a semi-structured questionnaire, assessing awareness and uptake of the scheme. Descriptive statistics and inferential analysis were performed using SPSS v25, with significance set at $p < 0.05$.

Results: The majority of participants (70.8%) were aged 20-30 years. Literacy rates were high, with 79.2% of participants being literate. Most participants (93.1%) were unemployed, and 75.4% resided in rural areas. Socioeconomic analysis showed that 45.4% belonged to the lower middle class. Awareness of the JSY scheme was (69.6%), with high utilization rates (87.7%). ASHAs were the primary source of information about the scheme (42%).

Conclusions: The JSY scheme has successfully reached a significant portion of its target population, demonstrating high awareness and utilization among women attending tertiary care in Udaipur.

Keywords: Awareness, Janani Suraksha Yojana, Maternal health, Maternal mortality, Maternal and child healthcare

INTRODUCTION

Maternal mortality has long been a critical issue in India, with efforts focused on improving maternal health and reducing the Maternal Mortality Ratio (MMR).¹ The MMR is defined as the number of maternal deaths per 100,000 live births during a specific time period.² Persistently high rates of maternal and infant mortality point to underlying systemic challenges that must be addressed to improve healthcare outcomes. Contributing factors to these elevated mortality rates include limited

access to quality healthcare, inadequate nutrition, and a lack of education for expectant mothers. Socio-economic disparities and underdeveloped healthcare infrastructure further compound these challenges, hindering many women and infants from receiving essential care. Addressing these factors is crucial for advancing the health and well-being of mothers and children.

To address these global health challenges, the United Nations introduced the Sustainable Development Goals (SDGs) in 2015.³ These goals include specific targets

aimed at reducing maternal mortality and improving infant health. One of the key targets is to reduce the global MMR to below 70 per 100,000 live births by 2030.⁴ Achieving this ambitious goal requires the implementation of comprehensive strategies, including improvements in healthcare services, enhanced education and awareness, and the development of policy frameworks that support maternal health. Additionally, the SDGs aim to prevent avoidable deaths of newborns and children under five by tackling issues such as malnutrition, infectious diseases, and inadequate access to clean water and sanitation. These goals highlight the importance of global collaboration among governments, healthcare providers, and international organizations in creating sustainable solutions.

In India, the Janani Suraksha Yojana (JSY) is a key initiative under the National Rural Health Mission (NRHM) that focuses on reducing maternal and infant mortality by promoting institutional deliveries. Launched with the goal of increasing the number of women giving birth in healthcare facilities, JSY seeks to mitigate the risks associated with home births, particularly in rural and underserved areas. Institutional deliveries are critical in ensuring that mothers receive skilled care and immediate medical attention during childbirth, thereby reducing the risks of complications and improving health outcomes for both mother and child.⁵

A cornerstone of the JSY program is the provision of financial assistance to pregnant women, which serves as an incentive for institutional deliveries. In rural areas, women receive Rs. 1400, while in urban areas, the amount is Rs. 1000. This differential payment structure reflects the unique economic challenges faced by rural populations and seeks to make professional healthcare more accessible to pregnant women, regardless of their geographical location. By addressing financial barriers, JSY plays a pivotal role in encouraging safer childbirth practices and improving maternal and infant health.

Since the implementation of maternal and child health (MCH) schemes like the Janani Suraksha Yojana in April 2005, there has been a significant increase in institutional deliveries. According to the National Family Health Survey (NFHS), the percentage of institutional deliveries rose from 40.8% in NFHS-3 (2005-2006) to 88.6% in NFHS-5 (2019-2021).⁶⁻⁹ The increase in institutional deliveries is a critical factor in reducing maternal and infant mortality, particularly in cases where complications arise during childbirth. The financial incentives provided by JSY, combined with efforts to enhance healthcare infrastructure and train medical professionals, have contributed significantly to improving maternal and child health outcomes.

This research focuses on assessing the awareness and utilization of the JSY scheme among women attending a tertiary care hospital in Udaipur District. The study aims to evaluate the reach and effectiveness of the JSY

program in promoting institutional deliveries and improving maternal and child health outcomes. By identifying gaps in awareness and uptake, the findings from this study will offer valuable insights into the program's impact and suggest areas where further improvements are needed to strengthen maternal healthcare delivery in the region.

METHODS

Study design

This was a hospital-based cross-sectional study designed to assess the awareness and uptake of maternal and child health schemes among antenatal and postnatal women.

Study setting

The study took place at Pannadhai Zanana Hospital, a tertiary care center in Udaipur, Rajasthan. The data were collected from women attending the Antenatal Care (ANC) Outpatient Department (OPD) and the Postnatal Care (PNC) In-patient Department (IPD).

Study period

This study was conducted for a period of 6 months from November 2023 to April 2024.

Study participants

The study included antenatal and postnatal women who met the inclusion criteria. Participants were selected from women attending the ANC OPD and those admitted to the PNC Ward during the study period. The inclusion criteria were all pregnant women visiting the ANC clinic and postnatal women in the PNC ward who provided informed consent. Women who were unwilling or unable to give consent were excluded from the study.

Variables

Key study variables included demographic data as age, occupation, education level, and socioeconomic status. Socioeconomic status assessed using the Modified B.G. Prasad classification, updated with the 2023 Consumer Price Index (CPI).¹⁰ Awareness assessed using participants were considered aware if they could accurately name the scheme and describe its key benefits. Uptake of the scheme measured through eligibility, registration of eligible participants, and utilization of the scheme among those registered.

Data sources/measurement

Primary data were collected through in-depth, face-to-face interviews using a semi-structured and validated questionnaire that assessed awareness and utilization. Secondary data were retrieved from hospital records to verify the utilization of the scheme.

Bias

Selection bias was minimized by using a predefined inclusion and exclusion criterion. Recall bias was addressed by cross-verifying self-reported data with hospital records where possible. Efforts were made to ensure that the questionnaire was clear and culturally appropriate to reduce response bias.

Study size

The sample size was calculated using findings from Bhaskaran et al, who reported a 9.6% awareness of maternal and child health benefit schemes.¹¹ Based on this estimate, a sample size of 254 participants was required to achieve statistical power. To account for incomplete data and potential dropouts, the final sample size was increased to 260 participants.

Quantitative variables

Quantitative variables included age, educational level, socioeconomic status, awareness level (measured as a percentage), and scheme uptake rates. Socioeconomic status was categorized using the Modified B.G. Prasad classification, and awareness was measured as a binary variable (aware vs. not aware).

Statistical analysis

Data were analyzed using SPSS version 25. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the data. Chi-square tests and t-tests were employed to examine the association between categorical and continuous variables, respectively. A p value of <0.05 was considered statistically significant for all analyses.

RESULTS

The study included 260 participants, comprising women attending the Antenatal Care (ANC) Outpatient Department (OPD) and those admitted to the Postnatal Care (PNC) Ward at Pannadhyai Zanana Hospital, Udaipur. A majority (70.8%, or 184 women) were between 20 and 30 years old. Participants under 20 years made up 7.7% (20 women), while those aged 30 to 40 accounted for 21.5% (56 women). Educational attainment varied: 20.8% (54 women) were illiterate, 21.2% (55 women) had completed primary education, 22.3% (58 women) had completed secondary education, 16.2% (42 women) had finished senior secondary education, and 19.5% (51 women) were graduates (Table 1).

Most participants (93.1%, or 242 women) were unemployed, with only 6.9% (18 women) reporting employment. Social category distribution included 19.6% (51 women) from the General category, 38.5% (100 women) from Other Backward Classes (OBC), 12.3% (32 women) from Scheduled Castes (SC), and 29.6% (77

women) from Scheduled Tribes (ST). Additionally, 75.4% (196 women) were from rural areas, while 24.6% (64 women) resided in urban settings. Socioeconomic status, based on the Modified B.G. Prasad classification, revealed that 13.8% (36 women) belonged to the lower class, 45.4% (118 women) to the lower middle class, 22.8% (59 women) to the middle class, 13.8% (36 women) to the upper middle class, and 4.2% (11 women) to the upper class (Table 1).

Table 1: Socio-demographic profile and obstetric details of participants (n=260).

Variables		Total number	Percentage
Age (years)	<20	20	7.7
	20-30	184	70.8
	30-40	56	21.5
Education	Illiterate	54	20.8
	Primary	55	21.2
	Secondary	58	22.3
	Senior secondary	42	16.2
	Graduate	51	19.5
Occupation	Employed	18	6.9
	Unemployed	242	93.1
Social groups	General	51	19.6
	Other backward class	100	38.5
	Schedule caste	32	12.3
	Schedule tribe	77	29.6
Place of residence	Rural	196	75.4
	Urban	64	24.6
Socio economic status	Lower class	36	13.8
	Lower middle class	118	45.4
	Middle class	59	22.8
	Upper middle class	36	13.8
	Upper class	11	4.2
Ration card	Above poverty line	88	33.8
	Below poverty line	23	8.9
	Not available	149	57.3
Obstetric status	Antenatal case	130	50
	Postnatal case	130	50
Live birth	0	85	32.7
	1	110	42.3
	2	43	16.5
	>2	22	8.5
High risk pregnancy	Yes	72	27.7
	No	118	72.3

Regarding ration card ownership, 33.8% (88 women) held Above Poverty Line (APL) cards, 8.9% (23 women) had Below Poverty Line (BPL) cards, and 57.3% (149

women) did not have a ration card. The study included an equal number of antenatal and postnatal participants, with each group comprising 50% (130 women). In terms of live births, 32.7% (85 women) had no previous live births, 42.3% (110 women) had one, 16.5% (43 women) had two, and 8.5% (22 women) had more than two. Additionally, 27.7% (72 women) were classified as having high-risk pregnancies, while 72.3% (188 women) were low-risk (Table 1).

A significant portion of participants, 69.6% (181 women), reported awareness and participation in the scheme, aimed at reducing maternal and neonatal mortality by encouraging institutional deliveries. Conversely, 30.4% (79 women) were either unaware of or not involved in the scheme. This suggests a considerable level of awareness and participation in the JSY scheme, demonstrating its role in promoting safe deliveries and enhancing maternal health outcomes (Figure 1).

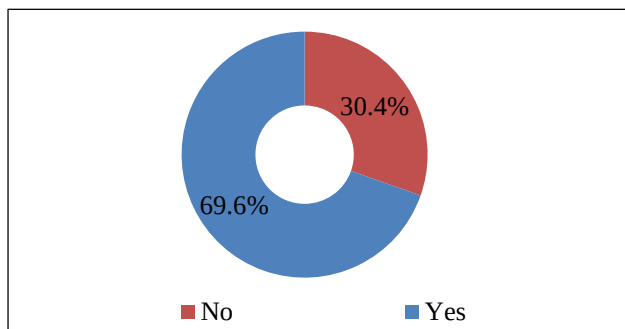


Figure 1: Distribution of study population according to knowledge of scheme name and key benefits.

Among those aware of the JSY scheme, Accredited Social Health Activists (ASHAs) were the primary source of information for 42.0% (76 women). Family members were also influential, providing information to 31.4% (57 women). Other sources, including various media and individuals, accounted for 19.9% (36 women), while Anganwadi workers and Auxiliary Nurse Midwives (ANMs) contributed to 3.9% (7 women) and 2.8% (5 women), respectively. This diversity of information sources reflects the varied ways in which awareness about institutional delivery benefits is disseminated (Figure 2).

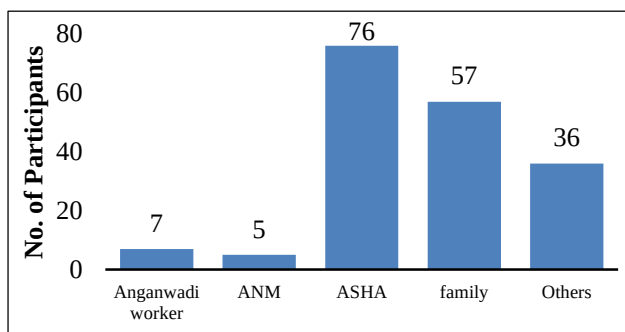


Figure 2: Distribution of study population according to source of information for the scheme.

Regarding utilization of the JSY scheme, 87.7% (114 women) of the 130 eligible beneficiaries reported having accessed the scheme, indicating strong participation. However, 12.3% (16 women) did not utilize the scheme, suggesting a small proportion of individuals either lacked awareness, did not meet eligibility criteria, or encountered barriers to accessing the benefits (Figure 3).

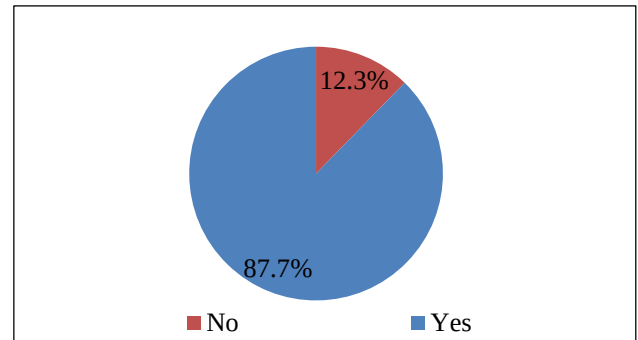


Figure 3: Distribution of study population according to advantage taken of the scheme.

DISCUSSION

Maternal and Child Health (MCH) programs in India are essential for bridging healthcare gaps and enhancing health outcomes for at-risk populations. These initiatives, launched by both central and state governments, focus on lowering maternal mortality rates (MMR) and infant mortality rates (IMR) through schemes such as Janani Suraksha Yojana (JSY), Janani Shishu Suraksha Karyakram (JSSK), and the Integrated Child Development Services (ICDS). Their success depends not only on their implementation but also on beneficiaries' awareness and understanding, which influence the adoption and use of these programs.

This hospital-based cross-sectional study aimed to assess awareness and uptake of the JSSK scheme among women visiting a tertiary care hospital. Conducted at Pannadhay Zanana Hospital in Udaipur, Rajasthan, the study involved 260 women, selected through non-probability convenience sampling.

The majority of participants (70.8%) were aged 20-30, aligning with the findings of a study by Bhaskaran Unnikrishnan et al in Mangaluru, Karnataka, where 81.2% of women fell within this age group.¹¹ This age range represents prime reproductive years, during which women are more likely to seek maternal and child health services. Cultural norms in India also encourage family formation during this period, increasing the likelihood of their engagement with maternal healthcare services. Additionally, the hospital's status as a tertiary care center attracts women needing specialized care, particularly in their reproductive years.

In terms of literacy, 79.2% of the participants in this study were literate, higher than the national average

female literacy rate of 64.63%, as reported by the Ministry of Statistics and Programme Implementation based on the 2011 Census.¹² However, Bhaskaran Unnikrishnan's study reported an even higher literacy rate of 98.4%.¹¹ The majority of participants in this study (22.3%) had completed secondary education, which aligns with Bhaskaran Unnikrishnan's findings.¹¹ Differences in literacy rates may be due to regional variations in access to educational facilities and levels of urbanization.

A significant portion of the participants (93.1%) were unemployed, a finding consistent with the study by Bhaskaran Unnikrishnan, where most women were homemakers.¹¹ Angadi et al also found that 77% of participants were homemakers.¹³ This trend may be driven by cultural norms that prioritize women's roles within the household, as well as limited employment opportunities and educational barriers in certain regions.

In this study, 75.4% of participants were from rural areas, similar to the 69.2% reported in Bhaskaran Unnikrishnan's study.¹¹ This may be due to the hospital serving a large rural population, where healthcare facilities are limited, prompting rural residents to seek services at larger, better-equipped hospitals.

Socioeconomic status plays a critical role in health outcomes. In this study, 45.4% of participants belonged to the lower middle class, based on the Modified BG Prasad classification. By contrast, Bhaskaran Unnikrishnan's study found that 82.4% of participants were in the lower class, while Navinkumar Angadi's study reported that 38% were in the lower middle class.^{11,13} The socioeconomic distribution in this study reflects the regional economic landscape, where many families have moderate incomes and limited opportunities, influencing healthcare access.

The study had an equal representation of antenatal and postnatal participants (50% each). In Bhaskaran Unnikrishnan's study, 57.2% were antenatal cases.¹¹ In both studies, most participants had one live birth, and the majority registered for care in the first trimester. This distribution suggests that the hospital provides comprehensive services to both antenatal and postnatal women, encouraging timely registration and consistent prenatal care.

In this study, 27.3% of participants were classified as having high-risk pregnancies. This is comparable to Murthy et al who reported 34%, and Bhaskaran Unnikrishnan's 26.8%.^{14,11} The higher incidence of high-risk pregnancies in this study may be due to the hospital's status as a tertiary care center, which often handles more complex cases. Other factors, such as socioeconomic conditions and inconsistent prenatal care, also contribute to the prevalence of high-risk pregnancies.

Awareness of the JSY scheme was found to be 69.6% in this study. By comparison, Uttekar et al reported 26% awareness in Varanasi, while Parul Sharma et al found 79% awareness in Dehradun.^{15,16} Regular interaction with healthcare workers, such as ASHAs and ANMs, was linked to higher awareness levels. Frequent visits to healthcare facilities help improve knowledge of MCH schemes, highlighting the importance of continuous public health education.

The main source of information in this study was ASHAs. In contrast, Johnson et al found that health personnel (20.93%), friends (18.47%), and family (7.3%) were the most common sources of information, while media outlets contributed minimally.¹⁷ Uttekar et al reported that ANMs were the primary source of information in Rajasthan, followed by ASHAs.¹⁵ These differences reflect regional and cultural variations in how information is shared and accessed.

Regarding JSY uptake, 87.7% of eligible beneficiaries in this study received benefits. This is higher than the 66.6% reported by Julakatti et al and the 25.5% reported by Kumar et al in Haryana.^{18,19} Murthy et al found a 65.5% uptake in Mysore.²⁰ Variations in uptake rates across studies highlight regional differences in healthcare infrastructure and public health education programs, which influence the success of these health schemes.

This hospital-based study's finding may not be generalizable, as it excluded home deliveries and relied on self-reported data, risking recall bias. Its cross-sectional design limits causal insights. Additionally, barriers and satisfaction were not explored in depth, and the accuracy of ASHAs' information dissemination was not assessed, warranting further research.

CONCLUSION

This study highlights the significant role of Maternal and Child Health (MCH) programs such as Janani Suraksha Yojana (JSY) in improving maternal health outcomes through increased awareness and uptake among antenatal and postnatal women. With 69.6% awareness and 87.7% uptake of JSY, the findings underscore the importance of continuous public health education and the involvement of healthcare workers, particularly ASHAs, in disseminating information. Despite regional variations in socioeconomic status, education, and employment, the study demonstrates that institutional support, combined with effective public health communication, can promote safer deliveries and reduce maternal and neonatal mortality in both rural and urban settings. These insights can guide future efforts to enhance the accessibility and effectiveness of MCH schemes across diverse populations.

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