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Impact of Janani Suraksha Yojana on Postpartum Contraception: Evidence from Two Selected Districts in Assam

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Abstract

This study explores the association between the receipt of JSY benefits and postpartum contraception use among reproductive-aged women in Assam who belong to the age group 18-49 years. The study is exclusively based on primary data collected from a sample of 260 reproductive-aged women residing in the two districts of Assam viz., Jorhat and Cachar. Surveyed women considered in the study were those who had experienced at least one live birth within the two years preceding the survey. Sample respondents were divided into two groups: those who received JSY benefits and those who did not. A binary logistic regression model is used to quantify the effect of JSY on postpartum counselling and postpartum contraception. The study findings reveal a positive impact of JSY on women's postpartum contraception adoption within the study area. The possibility of receiving counselling on postpartum contraception and adopting postpartum contraceptives was 13.89 times and 14.94 times greater for those respondents who did not benefit from the JSY. The study reveals that JSY not only promotes institutional childbirth but also enhances postpartum contraceptive counselling and the adoption of postpartum contraceptive methods among the beneficiary women.

Keywords: Contraception Adoption, Janani Suraksha Yojana, Logistic Regression, Maternal Healthcare Benefit, Postpartum Contraceptive Counselling

1. Introduction

Conditional Cash Transfer (CCT) programs have proven to be successful initiatives implemented by various countries worldwide, demonstrating a positive impact on healthcare accessibility[1,2]. In this regard, one notable initiative in India is the Janani Suraksha Yojana (JSY)[3], operating under the aegis of the National Rural Health Mission (NRHM). Enacted with the primary goal of mitigating maternal and neonatal mortality, JSY actively encourages institutional delivery, particularly among economically disadvantaged pregnant women. Launched on April 12, 2005, this initiative is systematically implemented across all states and Union Territories (UTs), with a specific emphasis on Low Performing States (LPS).

As a centrally sponsored scheme, JSY ingeniously combines cash assistance with comprehensive delivery and post-delivery care. The scheme recognizes the Accredited Social Health Activist (ASHA) as a key link between the government and pregnant women, establishing a vital connection to facilitate effective implementation and outreach. The integration of JSY with the crucial involvement of ASHAs results in frequent interactions between women and healthcare providers. They also provide information on various contraceptive methods, discuss family planning options, and address any concerns or questions the women may

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have during the postpartum period. This personalized counselling helps in understanding of contraceptives and increasing awareness and choices which in turn, leads to the reduction of maternal and infant mortality rates. The widespread use of contraceptives among women has not only contributed to advancements in their socioeconomic conditions but has also facilitated an upswing in educational opportunities for girls and women[4]. The far-reaching impact of contraceptive practices underscores their significance in fostering positive outcomes across various aspects of public health and societal well-being on a global scale.

The JSY places a specific emphasis on economically disadvantaged pregnant women, with a targeted approach for states characterized by low institutional delivery rates. These states, namely Uttar Pradesh, Uttarakhand, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Assam, Rajasthan, Orissa, and Jammu and Kashmir, are identified as LPS. Conversely, states with higher institutional delivery rates have been categorized as High Performing States (HPS)[5]. This classification reflects the varying degrees of success and challenges in promoting institutional deliveries across different regions. By customizing its approach to the specific needs of Low Performing States, JSY strives to address disparities and create a more equitable landscape for maternal healthcare throughout the country.

The effectiveness of JSY is closely tied to the rise in institutional delivery rates among economically disadvantaged households. The success of increasing institutional deliveries in India is underscored by findings from the National Family Health Survey (NFHS) IV and V reports. These reports reveal a notable increase in institutional delivery rates across all states of India, from 40.8 percent in 2005-06 (NFHS-3)[6] to an impressive 88.6 percent in 2019-2021 (NFHS-5)[7], and positive trends in nine specific states, including Assam. In Assam, the institutional delivery rates surged from 22 percent to 84 percent during the same period. These facts are also substantiated by a written reply in the Rajya Sabha in 2021 by the Union Minister of State, Ministry of Health and Family Welfare, wherein he stated that the number of beneficiaries under the JSY in Assam increased by 11 percent from 2018-19 to 2019-20 in contrast with a 7 percent increase at national level[8]. This increase underscores the effectiveness of initiatives promoting safer childbirth practices, improved maternal health facilities, and contributing to maintaining a reasonable gap between children through the adoption of viable contraceptive practices. However, evaluating the impact of JSY on postpartum contraception in Assam is deemed of paramount importance, considering its implications for the evolving landscape of family planning indicators in the state. Despite a gradual increase in the contraceptive prevalence rate among currently married women aged 15-49 years, rising from 52 percent (NFHS-4)[9] to 61 percent (NFHS-5) at the national level, a significant proportion of currently married women in Assam still experience an unmet need for family planning. This unmet need, indicating the percentage of currently married women desiring to space their next birth or stop childbearing entirely but not utilizing contraception, remains a critical concern. NFHS-5 report indicates a decline in the unmet need for family planning among currently married women in Assam from 14.2 percent (NFHS-4) to 11 percent (NFHS-5).

While this reduction indicates a positive trend, it underscores the persistent significance of addressing unmet needs for family planning despite improvements in contraceptive prevalence rates. This highlights the importance of evaluating the impact of JSY on postpartum contraception to better understand its role in addressing persisting unmet needs and improving the adoption of family planning methods in the state. Recognizing routine postpartum check-ups as a strategic juncture for contraceptive counselling and adoption, the present study aims to investigate disparities between JSY beneficiaries and non-beneficiaries, highlighting two key aspects: receipt of postpartum contraceptive counselling and adoption of contraceptive methods within three months of childbirth in Assam focusing on two specific districts.

2. Literature Review

In the existing literature on the JSY in India, particularly at the state and district levels, numerous studies have primarily focused on assessing the program's effectiveness in enhancing the utilization of maternal healthcare services and improving newborn health. The evaluations have been centered on various dimensions, including the program's impact on institutional delivery, financial implications, and socioeconomic and regional inequalities in JSY coverage across India. Studies highlighted the positive impact of increasing the rate of institutional delivery across India[10], especially in rural areas[11,12].

Some noteworthy studies have delved into the program's influence on maternal healthcare utilization and newborn health outcomes, specifically addressing aspects of care related to childbirth within healthcare facilities[13-20].

Additionally, a cluster of studies has explored the realm of out-of-pocket expenditures related to childbirth under the JSY scheme, particularly examining ways to alleviate the financial burden on families seeking maternal healthcare services[21,22]. Research on socio-economic and regional inequalities in JSY coverage in India[23,24], highlighting disparities in the program's implementation and access to services.

The linkage between JSY and postpartum contraception is less explored but equally important. Postpartum contraception is critical for spacing births and ensuring maternal and child health. Academic studies also show that while JSY has increased institutional deliveries, its impact on postpartum contraceptive use was limited. It also argues that the scheme primarily focussed on delivery rather than comprehensive postpartum care, including contraception counselling and services[25].

However, the landscape of JSY studies in Assam, a state in the north-eastern region, is somewhat limited within the national context. Existing studies relying on data sources such as the Sample Registration System (SRS), NFHS, District Level Household Facility Survey (DLHS), and Annual Health Survey (AHS), have mainly focused on evaluating JSY's impact on key indicators, including institutional delivery rates, maternal mortality rates, and infant mortality rates within the state[26,27]. A study has highlighted improvements in institutional deliveries in Assam but also pointed out gaps in postpartum care and contraception[28]. Despite the success in promoting maternal healthcare services and new-born health, existing assessments and studies provide limited evidence on the impact of JSY on the adoption of postnatal contraceptive methods.

3. Methodology

This study is based entirely on primary data collected through a field survey conducted among reproductive-aged women in two selected districts of Assam, India – Jorhat and Cachar. The selection of these districts was based on two criteria: the utilization of maternal health care services (Antenatal care, Delivery care, and Postnatal care) and geographical location. To determine these criteria, all 33 districts of Assam were ranked by their coverage of maternal health care, as reported in the NFHS-5. Jorhat district, representing the Brahmaputra Valley, was chosen for its highest utilization of maternal healthcare services, while Cachar district, representing the Barak Valley region, was selected to signify lower utilization.

The survey covered both urban and rural areas within the selected districts, employing a multistage stratified random sampling technique. For rural areas, two villages were selected from each development block, and in urban areas, all wards within the municipal corporation or board of each district were surveyed. The selection of villages was based on population size, with proportional probability, and reproductive women were chosen from each village and ward using a list of women who delivered in the specified reference period compiled with the help of community health workers.

The study involved interviewing 260 women of reproductive age. Out of these participants, 77.7 percent delivered in public health facilities, 13.8 percent delivered at home assisted by unskilled birth attendants, and 8.5 percent delivered at private hospitals not accredited by the Government of India, making them ineligible for JSY benefits. Since these 22 women, comprising 8.5 percent of the total were ineligible, they are excluded from the analysis. Consequently, the final study sample consisted of 238 reproductive-aged women (18-49 years) who had experienced at least one live birth or had children aged between 0-24 months preceding the survey.

A structured interview schedule was employed using a set of comprehensive questions that covered various aspects, including the respondent's socio-economic status, household possessions, utilization of maternal healthcare services, postpartum counselling, postpartum contraceptive use, and access to the JSY scheme. Differences in socio-economic and demographic characteristics between beneficiaries and non-beneficiaries of the JSY scheme were noted following the work done by Zavier and Santhya[1].

3.1 Outcome Variables

The study incorporated two key outcome variables the receipt of postpartum counselling and the adoption of postpartum contraceptive methods. Postpartum Contraceptive Counselling status was determined by whether health personnel (including doctors, ANMs,

nurses, and ASHAs) advised women on the significance of postpartum contraceptive use during check-ups, conducted either at home or at healthcare facilities. A binary classification was employed, labelling instances as "yes" for those receiving any postnatal contraceptive counselling and "no" for those without such guidance after childbirth, adhering to World Health Organization guidelines (WHO, 2015)[29]. Notably, the timing for initiating a contraceptive method after delivery varied based on breastfeeding status.

The adoption of postpartum contraceptive methods is defined as the use of contraceptives within three months of delivery. These methods encompass modern options (condoms, diaphragm, cervical cap, intrauterine device, hormonal contraceptives such as oral and injectable, and the standard day's method), permanent methods (female sterilization/tubal ligation), and traditional methods (folkloric/periodic abstinence). Instances were categorized as "yes" if any modern or permanent postpartum contraceptive method was used, and as "no" for those not utilizing any postpartum contraceptive methods or solely relying on traditional methods following childbirth.

3.2 Independent Variables

In the study, the independent variable was the receipt of JSY benefits. This variable was employed to ascertain whether respondents had received cash assistance after childbirth, either in public health facilities or at home. The categorization of the receipt of JSY benefits involved labelling instances as "yes" for those who received cash assistance under JSY after childbirth and "no" for those who did not receive such assistance.

The analysis incorporated several socio-economic variables as identified through the existing literature survey, deemed significant in understanding the utilization of postpartum counselling and the adoption of postpartum contraceptives under the JSY program. These variables included women's age, caste, religion, place of residence (rural/urban), Educational attainment, employment status, household wealth index, and husband's involvement in maternal care.

The household wealth index, a composite score, was calculated based on various household possessions such as televisions, bicycles, materials used for house construction, types of water access, sanitation facilities, and other assets. Factor scores for household assets were generated through Principal Component Analysis (PCA), standardized, and categorized into five quintiles, namely, poorest, poorer, lower middle, upper middle, and rich. This comprehensive approach allowed for a nuanced understanding of the association between JSY benefits receipt and various socio-economic factors in the context of postpartum counselling and contraceptive adoption.

3.3 Methods of Data Analysis

In the analysis, respondents were categorized into two main groups: JSY beneficiaries and non-beneficiaries. Cross-tabulation was employed to illustrate the distribution of respondent status based on JSY benefits. Descriptive statistics were used to present the characteristics of all outcomes and independent variables considered in the study.

To explore the association between the receipt of JSY benefits and both the receipt of postpartum counselling and the adoption of postpartum contraceptive methods, bivariate analysis was conducted using chi-square tests. Following this, a binary logistic regression model was utilized to assess the overall impact of JSY benefits on these outcomes. Two models were constructed for each outcome variable. The initial model featured JSY benefits as the sole independent variable, controlling for other factors, while evaluating the receipt of postpartum counselling and adoption of postpartum contraceptive methods as dependent variables. In the second model, socio-economic variables were included for a more comprehensive analysis.

Variables showing significance at $p \leq 0.25$ in the bivariate tests were retained for the final regression analysis. The results of the logistic regression analysis were presented in terms of Odds Ratios (ORs) along with corresponding 95% Confidence Intervals (CIs). Model fitness was assessed using the Hosmer-Lemeshow goodness-of-fit test. The entire data analysis process was carried out using SPSS software version 20.

4. Results and Discussions

As outlined in the methodology, the study divided respondents into two groups based on whether they received JSY benefits or not. Table 1 displays the results of cross-tabulation that illustrate the group-wise distribution of respondent's socioeconomic status and reproductive experiences. Around 55 percent of women received

Table 1. Distribution of socioeconomic characteristics and received postpartum counselling and adoption of postpartum contraceptive by JSY beneficiaries' status

Indicators	JSY benefits received (%) (*N=131*)	JSY benefits not received (%) (*N=107*)	Total (%) (*N=238*)
Age of the respondent			
18-25	10.08	10.50	20.59
26-35	36.97	28.99	65.97
36+45	7.98	5.46	13.45
Religion			
Hinduism	44.96	27.31	72.27
Islam	8.82	17.65	26.47
Others (Buddhism/Christianity)	1.26	0.00	1.26
Caste			
General	17.65	21.85	39.50
OBC/MOBC	25.63	17.23	42.86
Scheduled caste	8.40	5.88	14.29
Scheduled tribe	2.90	0.50	3.36
Educational attainment of the respondent			
Illiterate	8.40	9.66	18.07
Lower primary passed	22.69	10.92	33.61
Upper primary/middle passed	5.46	5.04	10.50
High school passed	5.46	12.18	17.65
Higher secondary and above	13.03	7.14	20.17
Employment status			
Not employed	19.30	22.30	41.60
Employed	35.70	22.70	58.40
Household wealth index			
Poorest	7.14	14.71	21.85
Poorer	11.34	7.14	18.49
Lower middle	10.50	7.98	18.49
Upper middle	11.76	9.24	21.01
Rich	5.30	14.90	20.17
Locality			
Rural	33.19	20.17	53.36
Urban	21.85	24.79	46.64
Husband involvement in pregnancy care			
Not Involved	13.87	32.35	46.22
Involved	41.18	12.61	53.78
Interactions with ASHAs			
Antenatal period	38.66	18.07	56.72
Before delivery time	16.39	15.55	31.93
Postnatal period	1.20	10.14	11.34

Indicators	JSY benefits received (%) (*N=131*)	JSY benefits not received (%) (*N=107*)	Total (%) (*N=238*)
Received postpartum contraceptive counselling			
No	12.29	32.20	44.49
Yes	49.15	6.36	55.51
Received postpartum contraceptive counselling from			
ASHA	37.24	15.17	52.41
ANM/Nurse	40.69	6.21	46.90
Doctors/medical officers	0.69	0.00	0.69
Adopted postpartum contraception within three months			
No	5.50	31.90	37.40
Yes	49.60	13.0	62.60
Adopted postpartum contraceptive methods			
Modern methods	62.42	7.38	69.80
Permanent methods	14.77	8.05	22.82
Traditional methods	2.01	5.37	7.38
**Abbreviations: JSY= Janani Suraksha Yojana, ANM= Auxiliary Nurse Midwives, ASHA= Accredited Social Health Activists			

JSY benefits, while 45 percent did not. The majority of women were within the age group 26-35 years, had limited educational attainment (lower primary level), and followed the Hindu religion (constituting 72.27 percent). Approximately, one-third belonged to socially excluded groups, such as scheduled castes and tribes. A significant proportion of women were employed in both formal and informal sectors (58.40 percent) and hailed from economically disadvantaged households (adding 21.85 percent and 18.49 percent).

The majority of women disclosed that their male counterparts actively participated in maternity care, and those benefiting from the JSY were more likely to confirm such involvement compared to non-beneficiaries. Furthermore, JSY beneficiaries exhibited a higher likelihood than non-beneficiaries of interacting with ASHAs during the antenatal, delivery, and postpartum phases (38.66 per cent vs. 18.07 per cent, 16.39 per cent vs. 15.55 per cent, and 1.2 per cent vs. 10.14 per cent, respectively). Notably, JSY beneficiaries were more inclined to receive postpartum contraceptive counselling from healthcare providers during both the antenatal and postnatal periods in contrast to non-beneficiaries (49.15 per cent vs. 6.36 per cent). Among those receiving counselling, ASHAs contributed 52.41 per cent, while an auxiliary nurse midwife/nurse provided 46.90 per cent and 0.69 per cent came from a doctor or medical officer. Moreover, JSY beneficiaries were more likely than non-beneficiaries to have received counselling on postpartum contraception within three months of childbirth (49.15 per cent vs. 6.36 per cent) and were also more prone to adopting postpartum contraception within that timeframe (49.60 per cent vs. 13.0 per cent). Regarding the choice of contraception, the majority (69.80 per cent) opted for a modern temporary method, followed by a permanent method (22.82 per cent), and 7.38 per cent utilized the traditional method. However, JSY beneficiaries significantly differed in their preferences, displaying a higher inclination toward adopting a modern temporary method (62.42 per cent vs. 7.38 per cent) or a permanent method (14.77 per cent vs. 8.05 per cent) and a lower likelihood of choosing a traditional method (2.01 per cent vs. 5.37 per cent) compared to non-beneficiaries.

To estimate the impact of JSY benefits including different independent variables on the receipt of postpartum contraceptive counselling and adoption of postpartum contraception, two separate binary logistic regression models were used as empirical estimation models for each outcome variable. The results of the models are delineated in Tables 3 and 4, respectively. The descriptive statistics of the explanatory variables used in the logistic regression model are illustrated in Table 2, which includes age, religion, caste, etc., with details such as minimum, maximum, mean, standard deviation,

Table 2. Descriptive statistics of the variables/characteristics of the respondents used in the logistic regression

Explanatory variables	Unit of measurement	N (238)			
		Min.	Max	Mean	SD
Age of the respondent	0 for 18-25 years, 1 for 26 years and above	0.00	1.00	.206	.405
Religion	1 for Hindu and o for Islam/others	0.00	1.00	.265	.442
Caste	1 for SC/ST and o for otherwise	0.00	1.00	.571	.496
Educational attainment of the respondent	1 for high school & above and 0 for otherwise	0.00	1.00	.441	.498
Employment status of respondent	1 for employed and 0 for unemployed	0.00	1.00	.584	.494
Household wealth status	0 for poor group and 1 for otherwise	0.00	1.00	.597	.492
Husband involvement in maternity care	1 for yes and 0 for no	0.00	1.00	.538	.500
Received postpartum contraceptive counselling	1 for yes and 0 for no	0.00	1.00	.640	.481
Adopted postpartum contraception within 3 months of childbirth	1 for yes and 0 for no	0.00	1.00	.639	.481
District	1 for Jorhat and 0 for Cachar	0.00	1.00	1.851	.357
Place of residence	1 for urban and 0 for rural	0.00	1.00	1.466	.500
Received JSY benefits	1 for yes and 0 for no	0.00	1.00	.560	.497

Source: Author's own calculation. Note: The mean of categorical variables is used as a measure of proportion, (Abbreviations: SE = Standard error, SD= Standard deviation)

and coding or units of measurement. For instance, the mean is used for categorical variables as a measure of proportion. However, these statistics offer insights into the characteristics and variability of the dataset before conducting logistic regression analysis.

Table 3 depicts the results from two logistic regression models. Model I assess the impact of JSY benefits received on receipt of postpartum contraceptive counselling while keeping other factors constant. The estimated model indicates a positive and statistically significant effect of receiving JSY benefits on postpartum contraceptive counselling, where JSY beneficiaries were 19 times (OR= 19.56) more likely to receive postpartum contraceptive counselling compared to non-beneficiaries. Model II examines the association between the receipt of postpartum contraceptive counselling and socioeconomic factors, including JSY benefits. The estimated $\chi 2$ value for Model II (26.327) is significant at a 1% level, indicating a significant association of attributes. Specifically, JSY benefits and husband involvement in maternal care are both significant at a 1% level and emerged as highly significant predictors. Factors like respondent's age and household wealth index are found to be significant at a 10% level of significance. Factors having significant Wald scores positively impact the receipt of postpartum contraceptive counselling. On the other hand, the impact of certain factors such as women's education, religious affiliation, employment status, district, place of residence, and caste are found to be statistically not significant in the model. However, results showed that the impact of JSY benefits remained substantial in Model II. Even after considering socioeconomic and other factors in the model, the Adjusted Odds Ratio (AOR) for JSY beneficiaries was 13.89, indicating a reduced but still notable effect on postpartum contraceptive counselling. The analysis further revealed insightful patterns, the estimated coefficient shows that younger women (AOR = 0.282) were less likely to receive counselling compared to older women, Hindu women (AOR = 1.079) had a slightly higher likelihood than Muslim women, and employed women (AOR = 1.857) were more probable recipients compared to their unemployed counterparts. Notably, the involvement of husbands in maternal care significantly increased the probability of women receiving postpartum contraceptive counselling, with an AOR of 37.430. Moreover, regarding women's household wealth index, the odds of receiving postpartum contraceptive counselling were notably higher for other sections (middle and rich) than the poor, indicating 3.6 times (AOR = 3.581) greater likelihood compared to the poor section. Considering the study's location, variations were observed among beneficiaries under JSY concerning place of residence and geographical location.

Table 3. Estimates of logistic regression analyses assessing the relationship between the receipt of JSY benefits and postpartum contraceptive counselling, Assam

Explanatory variables	Model I							Model II						
	Coeff.	St. Error	Wald	Sig.	Odds ratio	95% CI		Coeff.	St. Error	Wald	Sig.	Odds ratio	95% CI	
A. Received of JSY benefits (ref.= no)	2.974	0.351	71.682	0.000	19.563[a]	9.828	38.941	2.631	0.434	36.744	0.000	13.892[a]	5.933	32.529
B. Socioeconomic factors														
Age of the respondent								-1.264	0.694	3.315	0.069	0.282[c]	0.072	1.101
Religion								0.076	1.010	0.006	0.940	1.079	0.149	7.812
Caste								0.304	0.939	0.105	0.746	1.356	0.215	8.536
Educational attainment of the respondent								-0.338	0.649	0.271	0.603	0.713	0.200	2.545
Employment status of respondent								0.619	0.622	0.988	0.320	1.857	0.548	6.290
Husband involvement in maternal care								3.622	0.682	28.188	0.000	37.430[a]	9.828	142.559
Household wealth index								1.276	0.723	3.117	0.077	3.581[c]	0.869	14.762
District								0.926	0.978	0.896	0.344	2.524	0.371	17.161
Locality								-0.412	0.748	0.304	0.581	0.662	0.153	2.868
Constant	-0.937	0.219	18.283	0.000	0.392			-5.044	2.537	3.953	0.047	0.006		
-2 Log likelihood					215.432a							81.667a		
Cox & Snell R^2					0.333							0.537		
Nagelkerke R^2					0.453							0.721		

***N=238; Abbreviation: JSY= Janani Suraksha Yojana, CI= Confidence Interval, (significant at [a] $P \leq 0.01$, [b] $P \leq 0.05$, [c] $P \leq 0.1$)

Table 4. Estimates of logistic regression analyses assessing the relationship between the receipt of JSY benefits and adopted postpartum contraception within three months of childbirth, Assam

Explanatory variables	Model I							Model II						
	Coeff.	St. Error	Wald	Sig.	Odds ratio	95% CI		Coeff.	St. Error	Wald	Sig.	Odds ratio	95% CI	
A. Received of JSY benefits (ref.= no)	3.067	0.362	71.687	0.000	21.484[a]	10.562	43.700	2.704	0.640	17.839	0.000	14.944[a]	4.260	52.415
B. Socioeconomic factors														
Age of the respondent								-1.275	0.701	3.305	0.069	0.280[c]	0.071	1.105
Religion								-0.099	1.045	0.009	0.924	0.905	0.117	7.026
Caste								0.572	0.991	0.334	0.564	1.772	0.254	12.350
Educational attainment of the respondent								0.303	0.649	0.218	0.641	1.353	0.380	4.824
Employment status of the respondent								0.365	0.622	0.345	0.557	1.441	0.425	4.881
Husband involvement in maternal care								3.565	0.690	26.720	0.000	35.341[a]	9.146	136.565
Household wealth index								1.541	0.734	4.405	0.036	4.670[b]	1.107	19.694
District								1.388	1.002	1.919	0.166	4.006	0.562	28.546
Locality								-0.392	0.746	0.275	0.600	0.676	0.157	2.918
Constant	-0.870	0.214	16.539	0.000	0.419			-6.160	2.620	5.527	0.019	0.002		
-2 Log likelihood					211.944a							80.518a		
Cox & Snell R^2					0.340							0.538		
Nagelkerke R^2					0.465							0.725		

****N=238*; Abbreviation: JSY= Janani Suraksha Yojana; CI= Confidence Interval; (significant at [a] $p \leq 0.01$, [b] $p \leq 0.05$, [c] $p \leq 0.1$)

In Table 4, Model I focuses on examining the association between the adoption of postpartum contraception within three months of childbirth and JSY benefits received while controlling other factors. The results indicate a significant positive effect of receiving JSY benefits on the adoption of postpartum contraception with JSY beneficiaries 21 times (OR = 21.48) more likely to adopt postpartum contraception compared to non-beneficiaries. Here, model II considers socioeconomic and other factors to examine the association between the adoption of postpartum contraception within three months of childbirth and JSY benefits. The estimated χ^2 value (12.625) is found to be significant at a 1% level. JSY benefits received and husband involvement in maternal care are found to be significant at a 1% level of significance. Household wealth index and respondent's age are found to be significant at 5% and 10% levels, respectively. All the factors having significant Wald scores have a positive impact on the adoption of postpartum contraception. However, women's education, religious affiliation, employment status, district, place of residence, and caste are found to be statistically not significant in this model. Moreover, results from Model II indicate a significant effect of JSY benefits on the adoption of postpartum contraception with AOR = 14.944 for JSY beneficiaries even after considering socioeconomic and other factors in the model. The estimated coefficient shows that the probability of adoption of postpartum contraception increases with women's age with younger women being less likely (AOR = 0.288) compared to older women, holding other variables constant in the model. Women with a high school education or above and employed women showed a higher probability (AOR = 1.353 and 1.441 respectively) of adopting postpartum contraception compared to their counterparts. Similar to the previous model, husband involvement in maternal care has a significant positive impact on women's adoption of postpartum contraception within three months of childbirth with an AOR of 35.341 for women whose husbands were involved in maternal care during pregnancy. The odds ratio in favour of the women from other sections (middle and rich) in adopting postpartum contraception within three months is 4.7 times (AOR = 4.670) higher compared to the poor. Significant variations are observed between study districts and the place of residence of JSY beneficiaries.

The findings from both model runs for both the outcome variables under the study indicate that JSY benefits received remained a substantial significant factor, even when considering several socioeconomic and other factors such as women's age, religion, caste, employment status, husband's involvement in maternal care, household wealth status, and place of residence significantly influenced the likelihood of receiving women's postpartum contraceptive counselling and adoption of postpartum contraceptive within three months of childbirth. It appears from the study that the urge to use post-partum contraception among women receiving JSY benefits within 3 months of childbirth has increased after receiving postpartum contraceptive counselling. This is reflected by the higher odd ratio of 21.48 and 14.94 in Model I and Model II in Table 4 in comparison with the corresponding values of 19.56 and 13.89 in Model I and Model II in Table 3. Across both logistic regression models, estimated results unequivocally show that the JSY benefits received have a significant positive effect on the likelihood of both reproductive-aged women receiving postpartum contraceptive counselling and adopting postpartum contraception within three months after childbirth.

5. Conclusion

The study reveals that the JSY extends beyond promoting institutional childbirth; it also bolsters postpartum contraceptive counselling and the uptake of contraceptive methods among the beneficiaries after delivery. Several factors, potentially influenced the counselling provided by ASHA workers, such as community health education, timely information, trust and relationships, accessibility of services, and cultural sensitivity, could contribute to the observed higher urge for post-partum contraceptive use among surveyed women. While the research was confined to merely two districts in Assam, generalizing the outcomes remains challenging. This limitation heralds an opportunity for further research and inclusive investigation encompassing all districts of Assam is warranted. The insights gathered from this study could be instrumental for policymakers, healthcare practitioners, and scholars in refining maternal and reproductive health strategies in analogous settings. Moreover, the study advocates for the strategic deployment of CCT programs to catalyze women's engagement with healthcare systems, thereby enhancing the spectrum of maternal healthcare services, including postpartum contraceptive adoption.

6. References

1. Santhya KG, Zavier AJF. How conditional cash transfers to promote institutional delivery can also influence postpartum contraception: Evidence from Rajasthan, India. IJGO. 2013; 123:e43-e46. https://doi.org/10.1016/j.ijgo.2013.08.003
2. Acharya R, Jejeebhoy SJ, Santhya KG, Zavier AJF. Effects of the Janani Suraksha yojana on maternal and new-born care practices: Women's experiences in Rajasthan. New Delhi: Population Council; 2011. https://doi.org/10.31899/pgy1.1014
3. Health and Family Welfare Assam. [internet]. Janani Suraksha Yojana. National Health Mission. Available from: https://nhm.assam.gov.in/schemes/janani-suraksha-yojana
4. Alano A, Hanson L. Women's perception about contraceptive use benefits towards empowerment: A phenomenological study in Southern Ethiopia. PLOS ONE. 2018; 13(9):1-15. https://doi.org/10.1371/journal.pone.0203432
5. Ministry of Health and Family Welfare Janani Suraksha Yojana. National Health Mission; 2024. Available from: https://nhm.gov.in/index1.php?lang=1&level=3&lid=309&sublinkid=841#:~:text=The%20scheme%2C%20launched%20on%2012,delivery%20and%20post-delivery%20care
6. International Institute for Population Sciences (IIPS) and ICF. National Family Health Survey (NFHS-3), India; 2007.Available form: http://rchiips.org/NFHS/factsheet_NFHS-4.shtml
7. International Institute for Population Sciences (IIPS) and ICF. National Family Health Survey (NFHS-5), India; 2021. Available from: http://rchiips.org/NFHS/factsheet_NFHS-4.shtml
8. MoHFW | Increase in Institutional Deliveries under Janani Suraksha Yojana (JSY). Press Information Bureau of India; 2021.
9. International Institute for Population Sciences (IIPS) and ICF. National Family Health Survey (NFHS-4), India; 2016. Available from: http://rchiips.org/NFHS/factsheet_NFHS-4.shtml
10. Emmanuela G, Joseph AH, Lalit D, Margaret CH, Stephen SL, Spencer LJ. India's Janani Suraksha yojana, a conditional cash transfer programme to increase births in health facilities: An impact evaluation. The Lancet. 2010; 375:2009-2023. https://doi.org/10.1016/s0140-6736(10)60744-1
11. Sharma RK, Sharma R, Singh P. Impact of Janani Suraksha Yojana (JSY) on institutional delivery: Evidence from Madhya Pradesh. J Family Med Prim Care. 2012. 1(1), 43.
12. Bachloo T, Bhardwaj A, Kumar R, Mukherjee AK. Utilization and perception of health services under Janani Suraksha Yojana among mother in a rural area of Ambala district, Haryana. IJMS Pub Health. 2016; 5(8):1639-1643. https://doi.org/10.5455/ijmsph.2016.27112015273
13. Dongre A. Can conditional cash transfers impact institutional deliveries: Evidence from Janani Suraksha yojana in India. SSRN Electronic Journal. 2012. https://doi.org/10.2139/ssrn.2196361
14. Behera BK, Kalhan M, Malik JS, Punia A, Sachdeva S. Utilization of health services under Janani Suraksha Yojana in rural Haryana. IJMPH. 2013; 3(3):176-179. https://doi.org/10.4103/2230-8598.118977
15. Chellan R, Paul L. Impact of Janani Suraksha Yojana on institutional delivery in empowered action group states. SE Asia J Pub Health. 2014; 3(2):4-18 https://doi.org/10.3329/seajph.v3i2.20033
16. Costa AD, Lindholm L, Randive B, Sebastian MS. Inequalities in institutional delivery uptake and maternal mortality reduction in the context of the cash incentive program, Janani Suraksha yojana: Results from nine states in India. Soc Sci Med. 2014; 123:1-6. https://doi.org/10.1016/j.socscimed.2014.10.042
17. Jackson TP, Mazumdar S, Mills A. Financial incentives in health: New evidence from India's Janani Suraksha yojana. J Health Econ. 2015; 43:154-169. https://doi.org/10.1016/j.jhealeco.2015.07.001
18. Kumar V, Gupta SC, Khan AM, Kaushal SK, Mishra SK. A study on the effect of Janani Suraksha Yojana on antenatal registration and institutional deliveries in the Agra district of Uttar Pradesh. IJ Pub Health. 2015; 59(1):54-57. https://doi.org/10.4103/0019-557x.152865
19. Biswas AK, Biswas AB, Mukhapadhaya DK, Mukhapadhaya S, Malik S, Nayak S. A study on utilization of Janani Suraksha yojana and its association with institutional delivery in the state of West Bengal, India. IJPH. 2016; 60(2):118-23. https://doi.org/10.4103/0019-557x.184543
20. Pallikadavatha S, Rahamana MM. How much do conditional cash transfers increase the utilization of maternal and child health care services: New evidence from Janani Suraksha Yojana in India. EHB. 2018; 31():164-183. https://doi.org/10.1016/j.ehb.2018.08.007
21. Mukharjee S. Cash transfer scheme and economic burden on maternity in India: Lessons from Janani Suraksha yojana; 2016. p. 444-445. https://doi.org/10.1093/eurpub/ckw175.030
22. Mukherjee S, Singh A. Has the Janani Suraksha Yojana (A conditional maternity benefit transfer scheme) succeeded in reducing the economic burden of maternity in rural India: Evidence from the Varanasi district of Uttar Pradesh. JPHR. 2018; 7(957):1-8. https://doi.org/10.4081/jphr.2018.957
23. Choudhury PK, Mishra PS, Veerapandian K. Impact of socio-economic inequity in access to maternal health benefits in India: Evidence from Janani Suraksha Yojana

using NFHS data. PLOS ONE. 2021; 16(3):1-17. https://doi.org/10.1371/journal.pone.0247935

24. Kumar P, Mishra PS, Srivastava S. Regional inequality in the Janani Suraksha yojana coverage in India: A geo-spatial analysis. IJEH. 2020; 20(24):1-14. https://doi.org/10.1186/s12939-020-01366-2
25. Mahapatra B, Singh A. The Consequences of unintended pregnancy for maternal and child health in rural India: Evidence from Prospective Data. Matern Child Health J. 2013; 17(3), 493-500. https://doi.org/10.1007/s10995-012-1023-x
26. Hazarika P. Janani Suraksha Yojana and its impact on maternal health condition: An analysis in Assam. IJEBR. 2017;5(8):187-193. Available from: www.eprawisdom.com
27. Banu S. Performance of Janani Suraksha Yojana on maternal health of Assam. IJERD. 2018; 1(2):1-5. https://doi.org/10.5958/2249-6270.2018.00004.1
28. Baruah R, Mahanta TG, Phukan R. Impact of Janani Suraksha Yojana on institutional delivery in Assam: IJ Pub Health. 2014; 58(1):68
29. WHO | Pregnancy, childbirth, postpartum and newborn care: A guide for essential practice 3rd edition World Health Organization, Geneva; 2015. Available from: https://iris.who.int/bitstream/handle/10665/249580/9789241549356-eng.pdf?sequence=1