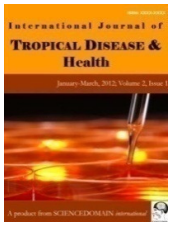

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Evaluation of Janani Suraksha Yojana (JSY) in Maharashtra, India: Important Lessons for Implementation

P. P. Doke[1*], U. H. Gawande[2], S. R. Deshpande[3] and M. Gadgil[4]

[1]Community Medicine, BVDU Medical College Pune, State Health System Resource Center, National Health Mission, Maharashtra Government, India.
[2]State Health System Resource Center, National Health Mission, Maharashtra Government, India.
[3]Chellaram Diabetes Institute, State Health System Resource Center, National Health Mission, Maharashtra Government, India.
[4]Department of Social Development, State Health System Resource Center, National Health Mission, Maharashtra Government, India.

Authors' contributions

This work was carried out in collaboration between all authors. Author PPD initiated, designed and finalized the study and the manuscript. Author UHG pursued the nodal agencies for completion and submission of the reports. Author SRD assisted finalization of the study design, carried out initial compilation and analysis. He also performed review of the manuscript. Author MG initiated the manuscript writing, reviewed it and carried out compilation and analysis of the data. All authors have approved the final manuscript.

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ABSTRACT

Aims: The study was conducted to estimate the proportion of eligible women for Janani Suraksha Yojana and to understand the factors affecting receipt of benefits in Maharashtra State, India.
Methodology: It was as comparative observational study conducted in Maharashtra State having a population of 112.37 million. Each district was divided into five strata tribal, rural, Municipal Council, slum and non-slum in Municipal Corporation. In each district about 2400 household were

**Corresponding author: Email: prakash.doke@gmail.com;*

surveyed comprising proportionate quotas from each stratum. Surveying unit from each stratum was randomly selected. The study population consisted women delivered in 2008-2009 year. Firstly Head of household was interviewed for confirming child delivery in the reference period. Then delivered woman was interviewed for checking eligibility to JSY and then details of receipt of benefits were obtained from her. Receivers and non-receivers of benefits were compared with respect to some variables. The study was undertaken with the help of Community Medicine Department from Government Medical Colleges.

Results: In the reference period 4,544 women delivered children and 41.15% were found eligible for the scheme. But only 52.57% certainly received cash benefits. About 24% surely did not receive and 23% were not sure about receipt or the scheme and hence included in non-receiver group for further analysis.

Non-earning women, not delivered in public health care institutions and un-aware about the scheme were unlikely to receive the benefits. Ante Natal Care visits, immunization, receipt and consumption of Iron and Folic Acid tablets were better among beneficiaries then non-receivers of the benefits. The benefits were not received immediately after delivery. About 10% women had problems in receiving the benefits, particularly requirement of certain certificates.

Conclusion: The uptake of the scheme may be slightly higher than 53% and there are many factors responsible for not reaching to entire eligible population. Modifiable risk factors like delivery in government health institution and awareness about the scheme are playing major role in receiving the benefits.

Keywords: India; Maharashtra; national health mission; janani suraksha yojana; conditional cash transfer; institutional deliveries.

1. INTRODUCTION

The global serious concern over maternal mortality is fairly expressed in the millennium development goals. Despite various initiatives at global and national level, maternal mortality continues to be high in developing countries. It is estimated that about 289,000 maternal deaths occur worldwide implying MMR of 210 of which about 99% are from developing countries [1]. India and Nigeria account for a third of maternal deaths worldwide. As per Sample Registration System (SRS), the Maternal Mortality Ratio for 2010-12 in India is 178 and in Maharashtra State 87 [2].

Ministry of Health and Family Welfare, Government of India in 1997 launched Reproductive and Child Health Program to reduce maternal and child mortality. Provision of Basic and Comprehensive Emergency Obstetric Care (EmOC) services was important focus. In spite of this investment by government the proportion of institutional deliveries increased marginally from 26% to 39% [3,4]. Despite strengthening of the supply side (facilities), poor women are still at risk as they face a number of barriers, particularly financial, to access EmOC in the absence of social safety nets [5] and widely prevalent out-of-pocket payment system [6].

This emphasized the need for developing strategies for increasing the use of available services especially among the poor who suffer the largest burden of maternal deaths. Janani Suraksha Yojana (JSY), meaning 'maternal security scheme,' a conditional cash transfer scheme to promote institutional delivery and thereby reducing maternal and neonatal mortality among population from low socioeconomic strata was launched under National Rural Health Mission (NRHM) in 2005. It is a very large scheme covering entire country providing cash equivalent to about $10 to delivered woman. This scheme was modification of then existing National Maternity Benefit Scheme. JSY is a 100% centrally sponsored scheme and it integrates cash assistance with ante natal care (ANC), delivery and post-delivery care [7]. The services may be availed from any government or accredited health center through establishment of coordinated care-communication system by field level health worker. In Maharashtra all pregnant women belonging to the Below Poverty Line (BPL) families and from schedule caste (SC) and schedule tribe (ST) are eligible, provided they are above 19 years of age and have only two children and deliver in government or accredited private institution. Recently the criterion for place of delivery has been relaxed. The prerequisite conditions and amount of cash assistance differ from state to state depending upon performance in health sector [8].

There are some studies carried out to evaluate the JSY in India (very few in Maharashtra) mostly

using secondary data. This study pertains to whole Maharashtra State and is based on primary data. We were interested to know how many eligible women are getting the benefits and what are the factors affecting receipt of benefits. We supposed that all the eligible women may not be receiving the benefits due to various reasons.

1.1 Objectives

The broad objective was to evaluate implementation of JSY in Maharashtra State and following were specific objectives.

1) To estimate the proportion of women eligible for JSY in Maharashtra.
2) To study the factors affecting the receipt of benefits under the scheme.
3) To study antenatal and intra-natal services received by JSY beneficiaries.
4) To study knowledge and practices pertaining to the scheme among beneficiaries.

2. MATERIALS AND METHODS

The study was conducted in 32 out of 35 districts in Maharashtra (except Kolhapur, Sangli and Sindhudurg) having population of 112.37 million. The study assignment in these three districts was given to government medical colleges. They were unable to conduct the survey due to inadequate faculty in the department at that time. This cross sectional survey was conducted in 2010-11. Selected study population was women delivered in year 2008-09. Each district was divided into five strata i.e. tribal, rural, Municipal Council, slum and non-slum in Municipal Corporation. District wise information about population in each stratum was obtained from census data and government gazette. All the units like village/ ward/ slum in each stratum were listed with population. Assuming about 30% population of Maharashtra is below poverty line [9], the sample size required for estimating the number of eligible women for the scheme with 95% confidence level and accepting variation of 1.5% on either side was 11,200. Therefore to cover about 12,000 population (considering average family size as five) about 2,400 households in each district were required. Proportionate sample of households was determined from these five strata. Then randomly one unit was selected, if it did not have requisite population then nearest village/ward/slum/non-slum was included. In selected units house to house survey was conducted. If desired population is covered in less than 2,400 houses; the team covered 10% additional population or 2,400 houses whichever is less.

Structured questionnaires were used to identify women delivered in the reference period, eligibility for JSY and among eligible women receipt of benefits of JSY and maternal health services. Few details were obtained from all delivered women and further details were obtained from eligible women only.

State Health System Resource Center, Pune conducted the study in collaboration with Community Medicine Departments of 11 Government Medical Colleges and one Non-Government Organization. We trained one Professor or Associate Professor as nodal officer from each department and subsequently they trained the field investigators who were doctors pursuing post-graduation in community medicine. The nodal officers personally supervised the survey and cross checked at least 5% houses. Approval from Ethical Committee was obtained. Verbal consent from participants was sought before interview.

2.1 Data Analysis

Collected data was entered in pre-designed template in excel sheet. Soft copies of data were obtained from respective agencies. The data was cleaned wherever required and analyzed in SPSS. Descriptive and univariate analysis was performed. For all the variables we compared eligible women receiving the benefits and eligible but not received the benefits. We did not compare the eligible and non-eligible population except for area of residence. District wise data for all the variables and their attributes was analyzed but compiled information is presented here excepting Table 1.

3. RESULTS

A total of 80,748 households were assessed for eligible women. Table 1 gives district wise number of women delivered and eligible for JSY benefits among them. In the State 41.15% women were eligible for JSY benefits. The benefits were certainly received by 983 eligible women (52.57%), 450 (24.06%) surely did not receive. Rest women were not sure about the receipt of the benefits or the name of the scheme under which benefits were received and hence included in non-receiver group for further analysis.

Table 1. District wise sample covered

Sr. no.	District	Households covered	No. of women delivered during the reference year 2008-09		
			Total no. of women delivered in reference year	No. of eligible women	% eligible
1	Ahmadnagar	2,400	164	54	32.93
2	Akola	2,316	245	120	48.98
3	Amravati	2,400	205	52	25.37
4	Aurangabad	2,411	48	48	100.00
5	Beed	2,598	134	42	31.34
6	Bhandara	2,400	59	59	100.00
7	Buldhana	2,356	109	47	43.12
8	Chandrapur	2,739	69	35	50.72
9	Dhule	2,452	124	41	33.06
10	Gadchiroli	2,400	89	39	43.82
11	Gondia	2,401	106	41	38.68
12	Hingoli	2,400	217	52	23.96
13	Jalgaon	2,400	194	52	26.80
14	Jalna	2,438	186	55	29.57
15	Latur	2,467	47	47	100.00
16	Mumbai	2,400	149	27	18.12
17	Mumbai Sub urban	2,400	128	49	38.28
18	Nagpur	2,400	248	87	35.08
19	Nanded	2,496	257	100	38.91
20	Nandurbar	2,539	147	85	57.82
21	Nashik	2,400	129	54	41.86
22	Osmanabad	2,152	34	34	100.00
23	Parbhani	2,811	56	56	100.00
24	Pune	2,400	330	143	43.33
25	Raigad	2,400	181	51	28.18
26	Ratnagiri	2,400	131	27	20.61
27	Satara	2,400	176	38	21.59
28	Solapur	4,180	72	72	100.00
29	Thane	2,485	92	42	45.65
30	Wardha	3,676	214	86	40.19
31	Washim	2,231	60	60	100.00
32	Yeotmal	2,400	144	75	52.08
	Total	**80,748**	**4,544**	**1,870**	**41.15**

3.1 Socio-demographic Profile

The distribution of socio-demographic characteristics of study population is given in Table 2.

3.1.1 Area of residence

The highest proportion of women delivered in reference year was from rural non-tribal area and lowest in slums. Proportion of women receiving JSY benefits was highest in tribal area (47.61%) and lower from all urban areas.

3.1.2 Age of the study population

High proportion (72.18%) of study population was under the 25 years and about 82% eligible women were below 25 years. There was difference between age group distribution among beneficiary and non-beneficiary. Among the receivers of benefits, women of 30 years or more age were in greater proportion and below 20 years in lesser proportion.

3.1.3 Parity

It was observed that 85.3% women were first or second para. Among the beneficiaries about 50% women were first para and almost all remaining were second para. Only 0.71% women of higher parity received benefits.

3.1.4 Caste

Women from SC/ST category were 39.7%. Out of the total eligible women, 66.63% proportion belonged to SC/ST category. The caste distribution was similar for beneficiaries and non-beneficiaries.

Table 2. Socio-demographic characteristics of women from different sub groups

Sr. no.	Variable / indicator	Category	Women delivered in year 2008-09		Out of col. 4 eligible for JSY		Out of col. 6 received benefits	
			Number	%	Number	%	Number	%
1	2	3	4	5	6	7	8	9
1	Area	Corp. slum	336	7.39	169	9.04	78	7.93
		Corp. non-Slum	780	17.17	201	10.75	72	7.32
		Council	714	15.71	284	15.19	112	11.39
		Tribal	531	11.69	368	19.68	253	25.74
		Rural (non-Tribal)	2,183	48.04	848	45.35	468	47.61
(χ^2=80.02;*P*<.001)								
2	Age	Up to 20 years	578	12.72	313	16.74	151	15.36
		21 to 25 years	2,702	59.46	1,210	64.71	659	67.04
		26-30 years	1,043	22.95	302	16.15	150	15.26
		Above 30 years	203	4.47	37	1.98	23	2.34
		Not Specified	18	0.40	8	0.43	0	0.00
(χ^2= 15.34; *P*=.004)								
4	Parity	1st	2,061	45.40	961	51.39	491	49.95
		2nd	1,814	39.90	879	47.01	485	49.34
		3 and above	665	14.60	27	1.44	7	0.71
		Not Specified	4	0.10	3	0.16	0	0.00
(χ^2=14.23; *P*=.003)								
5	Caste	SC/ST	1,804	39.70	1,246	66.63	659	67.04
		OBC / Open	2,705	59.53	611	32.67	319	32.45
		Not Specified	35	0.77	13	0.70	5	0.51
6	Income category	BPL	1,737	38.23	1,393	74.49	771	78.43
		APL	2,716	59.77	427	22.83	196	19.94
		Not Specified	91	2.00	50	2.67	16	1.63
(χ^2=20.41; *P*<.001)								
Total			**4,544**	**100.00**	**1,870**	**100.00**	**983**	**52.57**

3.1.5 Income category

Among women delivered in reference period 38.23% were from BPL category. BPL proportion of women was definitely higher among receivers of benefits.

Additional demographic information of eligible women is given in Table 3.

3.1.6 Employment

High proportion (67%) of eligible women was in non-earning category; but comparatively low among JSY beneficiaries. The odds ratio of not receiving benefits among non-earning women is 1.44 (95% CI=1.18-1.74; *P*<.001).

3.1.7 Education

About 13% eligible women were illiterate. The pattern of education was different among women who received the benefits. Graduates were less likely to be beneficiaries.

3.1.8 Type of occupation

Proportion of industrial and agriculture laborer was high among the beneficiaries.

3.1.9 Husbands' education

Educational level of husbands' was similar to the educational level of beneficiaries. There was difference between receivers and non-receivers of benefits.

3.1.10 Husband occupations'

Agricultural labor was more among husbands of beneficiary women.

3.2 Maternal Health Care Received by the Women Eligible for JSY Benefits

The maternal health services availed by eligible women are given in Table 4.

3.2.1 ANC visits

Proportion of women having three or more ANC visits was higher among JSY beneficiaries than non-beneficiaries. About 83% beneficiaries had visited Ante Natal Clinic at least thrice. In women with less frequent ANC visits the JSY uptake was poor.

Table 3. Additional socio-demographic characteristics of women eligible for JSY

Sr. no.	Variable / indicator	Category	Eligible for JSY		Out of col. 4 received benefits	
			Number	%	Number	%
1	2	3	4	5	6	7
1	Employment	Yes	602	32.19	353	35.91
		No	1,268	67.81	630	64.09
(χ^2=13.12; *P*<.001)						
2	Education of woman	Illiterate	239	12.78	127	12.92
		Primary (1st-4th)	216	11.55	118	12.00
		Secondary (5th -10th)	1,024	54.76	554	56.36
		Higher Secondary	269	14.39	144	14.65
		Graduate & Above	103	5.51	39	3.97
		Not Specified	19	1.02	1	0.10
(χ^2=27.45; *P*<.001)						
3	Type of occupation	Agriculture laborer	286	15.29	197	20.04
		Industrial laborer	19	1.02	16	1.63
		Other laborer	98	5.24	44	4.48
		Farmer (on own farm	83	4.44	40	4.07
		Self employed	52	2.78	28	2.85
		Homemaker (Housewife)	1,268	67.81	630	64.09
		Other	41	2.19	24	2.44
		Not Specified	23	1.23	4	0.41
(χ^2=57.37; *P*<.001)						
4	Husband education	Illiterate	161	8.61	97	9.87
		Primary (1st-4th)	162	8.66	83	8.44
		Secondary (5th -10th)	956	51.12	508	51.68
		Higher Secondary	384	20.53	216	21.97
		Graduate & Above	180	9.63	75	7.63
		Not Specified	27	1.44	4	0.41
(χ^2=30.15; *P*<.001)						
5	Husband occupation	Agriculture laborer	370	19.79	255	25.94
		Industrial laborer	215	11.50	100	10.17
		Other laborer	471	25.19	243	24.72
		Farmer (on own farm	224	11.98	120	12.21
		Self employed	325	17.38	164	16.68
		Other	233	12.46	97	9.87
		Not Specified	32	1.71	4	0.41
(χ2=72.41; *P*<.001)						
	Total		**1,870**	**100.00**	**983**	**100.00**

3.2.2 T.T. immunization

Around 86% beneficiaries received two Tetanus Toxoid (TT) doses. Proportion of receiving two doses and remembering number of injections of tetanus toxoids received was higher among beneficiaries.

3.2.3 Iron and Folic Acid (IFA) tablets

Higher proportions of women received and also consumed 100 or more IFA tablets in beneficiary group than those who did not receive benefits. The proportion of consumption of IFA tablets among beneficiaries was 42.52%.

3.2.4 Place of delivery

Beneficiaries less frequently delivered in homes and private institutions. The odds ratio of not receiving benefits among women not delivered in public institution was 4.33 (95% CI= 3.56-5.26; *P*<.001).

3.2.5 Type of delivery

Assisted vaginal deliveries were highest. High proportion of cesarean section (25.61%) was observed among eligible women. In cesarean type of delivery lesser number of women and in assisted vaginal delivery category more women received the benefits.

Table 4. Maternal health care profile of JSY eligible women

Sr. no.	Variable/ Indicator	Categories	Eligible for JSY		Out of col. 4 received benefits	
			Number	%	Number	%
1	2	3	4	5	6	7
1	No. of ANC visits	00	47	2.51	13	1.32
		01	83	4.44	33	3.36
		02	275	14.71	121	12.31
		03	436	23.32	242	24.62
		04 +	1,013	54.17	574	58.39
		Not specified	16	0.86	0	0.00
(χ^2=51.34; *P*<.001)						
2	No of TT received	00	57	3.05	18	1.83
		01	197	10.53	101	10.27
		02	1,557	83.26	850	86.47
		02+	39	02.09	14	1.42
		Not Specified	20	1.07	0	0.00
(χ^2=16.89; *P*<.001)						
3	IFA tablets Received	IFA <100	710	37.97	350	35.61
		IFA ≥100	915	48.93	552	56.15
		Not Specified	245	13.10	81	8.24
	(χ^2=62.5;*P*<.001)					
	IFA tablets Consumed	IFA <100	893	47.75	486	49.44
		IFA ≥100	705	37.70	418	42.52
		Not Specified	272	14.55	79	8.04
(χ^2=74.38; *P*<.001)						
4	Delivery place	Home	207	11.07	81	8.24
		Public Institution	1,041	55.67	709	72.13
		Private Institution	458	24.49	158	16.07
		Other	19	1.02	7	0.71
		Not Specified	145	7.75	28	2.85
(χ^2=241.99; P<0.0001)						
5	Type of delivery	Normal	207	11.07	81	8.24
		Assisted	1,123	60.05	727	73.96
		Cesarean	479	25.61	159	16.17
		Other	17	0.91	7	0.71
		Not Specified	44	2.35	9	0.92
(χ^2=172.88; *P*<.001)						
	Total		**1,870**	**100.00**	**983**	**100.00**

3.3 Awareness/Knowledge about JSY among Eligible Women

Table 5 provides information about awareness among eligible women. Women who were aware about the scheme were asked further questions. The proportion of not responding and not giving precise response even after probing was high and varied widely for numerous variables. These are not considered for calculating percentages hence the totals vary. Even among those who answered; the proportion of categorically expressing ignorance was substantial and ranged from15-30%.

3.3.1 Awareness

About 56% of the eligible women had heard about JSY scheme. The awareness was 60.34% among eligible women in tribal areas and 54.34% in non-tribal areas. The difference was not significant. Out of the eligible women who had heard about the JSY scheme 72% have received the benefits and out of the eligible women who were unaware 29% received JSY benefits. Women who were unaware, were not likely to receive benefit and the Odds ratio was 6.40 (95% CI=5.20-7.87; *P*<.001).

3.3.2 Source of information

About 25% women could not point out the exact source of information. Among the beneficiaries 575 women responded to the source of information. The source of information was predominantly person from some public sector particularly the Auxiliary Nurse Midwife (ANM). About 10% women received information from ASHA both in tribal and non-tribal areas.

Table 5. Awareness/knowledge about JSY among eligible women and women received benefits

Sr. no.	Variable	Categories	Eligible women		Out of col. 4 received benefits	
			Number	%	Number	%
1	2	3	4	5	6	7
1	Awareness	Yes	1,009	56.02	729	76.10
		No	792	43.98	229	23.90
		Total	1,801	100.00	958	100.00
(χ^2=334.68; *P*<.001)						
2	Source of information	ASHA	81	10.47	61	10.61
		ANM	355	45.87	294	51.13
		AWW	97	12.53	69	12.00
		Medical Officer	101	13.05	74	12.87
		NGO Staff	12	1.55	6	1.04
		Family member	54	6.98	37	6.43
		Other	74	9.56	34	5.91
		Total	774	100.00	575	100.00
(χ^2=49.89; *P*<.001)						
3	Purpose of JSY	Prevention of maternal death	122	13.99	96	15.05
		Prevention of neonatal death	80	9.17	69	10.82
		Safe delivery	280	32.11	211	33.07
		Institutional Delivery	70	8.03	50	7.84
		Other	40	4.59	23	3.61
		Don't know	280	32.11	189	29.62
		Total	872	100.00	638	100.00
(χ^2=19.20; *P*<.001)						
4	Entitlement	All pregnant mothers	185	21.76	141	22.63
		Mother from BPL category	277	32.59	205	32.91
		Mother from SC/ST category	181	21.29	135	21.67
		Other	17	2.00	14	2.25
		Don't know	190	22.35	128	20.55
		Total	850	100.00	623	100.00
5	Nature of benefit	Cash	614	77.62	469	80.17
		Food grains	22	2.78	14	2.39
		Credit (Loan)	1	0.13	1	0.17
		Other	18	2.28	14	2.39
		Don't know	136	17.19	87	14.87
		Total	791	100.00	585	100.00

3.3.3 Purpose of the scheme

The eligible women opined that safe delivery, prevention of maternal and neonatal death was the purpose of the scheme in that order. There was difference between group of women who received the benefits and who did not. In beneficiary group higher proportions were observed for valid answer.

3.3.4 Entitlement

The most common answer was 'Woman from BPL category'. The proportions were similar among beneficiaries and non-beneficiaries.

3.3.5 Procedural details of dispersing of benefit

Most of the eligible women irrespective of receipt of benefits knew that cash is given. Details of receipts of benefits of the JSY scheme are given in Table 6. The response to questions was not specific in many instances and ranged from 25-60%.

The list of problems faced by the beneficiary while availing JSY benefits is given in Table 7. The commonest difficulty was obtaining BPL or caste certificate.

Table 8 provides their ways of resolving the problems. Most of them arranged the required documents. Some provided tips and some sought influence.

Table 6. Procedural details about receipts of JSY benefits

Sr. no.	Variable	Categories	Beneficiary women	
			Number	(%)
1	Mode of JSY payment	Cash	488	49.64
		Cheque	124	12.61
		Not specified	371	37.74
2	No. of Installments received	1	548	55.75
		2	26	2.64
		3 or more	7	0.71
		Not specified	402	40.90
3	Source of receipt of amount	Sub centre	157	15.97
		PHC	234	23.80
		RH	45	4.58
		DH	115	11.70
		Other hospital	16	1.63
		Other	34	3.46
		Not specified	382	38.86
4	Documents submitted to get the JSY benefit	BPL certificate	421	28.89
		Caste certificate	250	17.16
		Age proof	155	10.64
		Address proof	122	8.37
		Certificate from doctor	61	4.19
		Certificate from ANM	15	1.03
		Certificate from Dai	8	0.55
		Certificate from village sarpanch	29	1.99
		Other	19	1.30
		Not specified	377	25.88
5	Place of submission of documents	Sub centre	157	15.97
		PHC	234	23.80
		RH	52	5.29
		DH	101	10.27
		Other Hosp.	17	1.73
		Other	18	1.83
		Not specified	404	41.10
6	Time required to receive monitory benefits	Within 7 days	235	23.91
		7-15 days	134	13.63
		15-30 days	100	10.17
		More than 30 days	137	13.94
		Not specified	377	38.35
7	Problems faced for getting JSY benefits	Yes	97	9.87
		No	292	29.70
		Not specified	594	60.43

Table 7. Problems faced by the women while availing the JSY benefits

Sr. no.	Problem	No. of women	%
1.	Difficulty in obtaining BPL certificate	29	19.21
2.	Difficulty in obtaining caste certificate	22	14.57
3.	Late submission	19	12.58
4.	Non-cooperation by facility staff	7	4.64
5.	Difficulty in obtaining certificate from provider	5	3.31
6.	Demand of cuts by facility staff	4	2.65
7.	Not all documents submitted	3	1.99
8.	Documents misplaced	2	1.32
9.	Other	6	3.97
10.	Not specified	54	35.76
	Total	**151**	**100**

Table 8. Actions taken to overcome the problems faced while availing the JSY benefits

Sr. no	Responses to overcome the problems	Number	(%)
1.	Arranged all documents	56	44.44
2.	Paid cuts to facility staff	15	11.9
3.	Sought influence of ANM	5	3.97
4.	Sought influence of medical officer	4	3.17
5.	Sought influence of ASHA	3	2.38
6.	Sought influence of political leader	1	0.79
7.	Other	7	5.56
8.	Not specified	35	27.78
	Total	**126**	**100.00**

4. DISCUSSION

Many studies are carried out analyzing secondary data; some revealed positive impact on neonatal and maternal mortality [10,11] but many studies are non-committal [12,13,14].Non-inclusion of life threatening conditions and non-robust Private Public Participation model [15], in-adequacy of benefits [16], gap in implementation [14], could be the reasons for unsatisfactory impact. Scheme may even increase probability of child birth in certain states [17]. Increase in institutional deliveries is consistently observed [11,12,18]. Present study did not intend to assess impact of the scheme.

There was wide district wise variation in estimates of eligible women for JSY (20.61 to 100%). In the district where number of women delivered in the reference year was less, almost all were found eligible. This is certainly due to small number. However it is important to note that these districts are known for migration of population in productive age group. The district wise sample size was not proportionate to the population of districts. Hence the compiled finding of 41.15% women were eligible was in consonance with estimated BPL and ST/SC population in Maharashtra has to be considered in the background of above mentioned limitation. Other studies have observed range from 25 to 45% [19-21].

Contrary to expectation slum area was less represented in present study. But similar small proportion of eligible women (11.20%) was noted in slum from one district of Maharashtra [22]. The only reasons could be higher age, parity and better income status of women from slums. More than half of the eligible women received the benefits in present study, lower proportion (25 to 33%) was observed in other studies [20,22]. The scheme appears to be pro-tribal pledging help to real needy population. But in urban slums the uptake is poor. This clearly shows the extent of interaction of beneficiaries with the formal public health sector is playing major role. In tribal areas public sector services are uniformly distributed in contrast to urban areas.

The proportion of women less than 25 years of age varied from about 30-75% among recently delivered women [20,21,23] and about 80-100% among beneficiaries [24-26]. Because of eligibility criterion of first or second para beneficiary is ought to be younger. Proportion of less than 25 years of age among beneficiaries was less Low Performing States (LPS) in both groups [27-31]. This may be due to reaching higher average age of mean fertility in LPS. The younger group may be consisting of women below 19 years which is very common in Maharashtra and they are not eligible for benefits. But in the age group of 21-25 years the uptake is high.

Among beneficiaries 88.5% were first or second para and more than 7% third para [25]. Ineligibility due to younger age among first para is further supported by high uptake of scheme among second para. Though third parity is not eligible for JSY benefits, 1.44% women were labeled eligible though only 25% of them received JSY benefits. By definition the woman may be third para but may have lost a child hence entitled for benefits. It may be irregularity of providing benefit to ineligible women as was observed in 3% cases in one study [32].

The proportion of SC/ST among recently delivered women varies from 30-45% including our study [21,23,33]. The higher estimates are from the LPS. One of the criteria for JSY is belonging to specific caste and hence the proportion of SC/ST ought to be higher among beneficiaries and ranges from 30-80% [24-26,27-31] including present study.

Although difference in caste distribution between beneficiaries and non-beneficiaries is observed

in Rajasthan [33] in present study the difference was not observed. It indicates that caste is not a determining factor for uptake. In spite of lesser BPL population than Maharashtra, high proportion of BPL women among beneficiaries that too exclusive SC/ST was observed in neighboring Karnataka State [25]. Such observation can only due to district specific variation.

Among recently delivered in LPS the BPL proportion ranged from 30-70% [21,23] and as expected was higher among beneficiaries [25]. Poverty rather than caste seems to be determinant factor for uptake of scheme. Economically better off SC/ST population may be less enthusiastic to avail benefits. Among eligible/ beneficiary group those who are not below poverty line are necessarily SC/ST category.

An earning woman because of her education, status, advocacy etc. may have better rapport with health personnel and hence is more likely to receive benefits. The proportion of illiterate among recently delivered as well among beneficiaries is high in most of the studies ranging from 20 to 70% [20,21,23,24,27-31] and may be as high as 82% in slums [32]. In LPS the proportion is usually moderate to high. Graduates may not want such monetary benefits and hence less reflected among beneficiaries. This finding was consistent with the earlier studies, which showed that the poorest and least educated women did not have the higher odds of receiving JSY benefits [10,32]. The ratio of laborers and housewives among beneficiaries in present study is about 1:3 but may be as low as 1:20 (24). Regardless the proportions present data indicates higher uptake among laborers. Education and occupation of husbands in present study was as observed elsewhere [24] and both the variables have identical and minimal effect on uptake.

The proportion of women having at least three ante natal visits widely varies from about 25 to 90% [20,21,25,27-32] and decreases when at least four visits are considered [23]. More the number of ANC visits, more is the probability of receipt of benefits. High Tetanus toxoid coverage is usually observed [20,21,24]. Better immunization, better consumption of IFA tablets increases uptake of scheme.

There is extreme variation in proportion of home deliveries [20,21,24,25,27-32]. Majority deliveries are conducted in government institutions [19,22,24,25]. The probability of receiving benefits is less if the woman has delivered in private institutions [24]. The proportion of receiving cash benefits in home deliveries was 64% and in institutional deliveries was 40% in UP and opposite position was observed in Rajasthan where the proportion was in 76%home deliveries and 88.4% in institutional deliveries [27-31]. Some intend to deliver in home but actually deliver in institutions. Such shift from home to institutional ranged from 6 to 14% [27-31]. Such positive shift is certainly due to awareness created by the scheme. But frequently due to transport difficulties and precipitation of labor, the women who intended to deliver in hospital may deliver in home [27].

Proportion of women undergone cesarean section is usually less than 10% but may be negligible in LPS [21,23,27-31]. The proportion of cesarean among eligible was higher than among beneficiaries in present study. Assisted vaginal delivery was the most common type among benefit receivers. Probably after cesarean section the woman is unenthusiastic and in normal delivery immediately returns. Conceptually the scheme is expected to provide even additional benefits to women undergoing cesarean section. Exactly opposite situation we observed. The women going to private hospital either may be from slightly better financial condition or having some complication. In first category we may not worry but in second category benefit is really needed. It is observed that the function of referral is not working satisfactorily [34].

In present study awareness about JSY was moderate among eligible and better among beneficiaries as expected. The awareness was slightly better in tribal areas but the difference is not significant. Among women of reproductive age group or recently delivered awareness varies from about 60 to 90% [21,23,32,35,36]. Mostly women acquire knowledge during pregnancy, or hospitalization for delivery. Among beneficiaries only 22% had knowledge prior to pregnancy [25]. The health personnel have correctly and proactively extended the benefits to about 25% to unaware women. The highest odds of receiving benefits among aware women, observed in the study strongly indicate need of creation of awareness.

Commonest source of information was ANM and ASHA in our study but in one study contrarily

information was received from relatives and friends more frequently than ASHA and ANM [36]. The reason may be non-functioning of ASHAs to the fullest extent particularly in non-tribal areas as they were recently appointed and trained. In some non-tribal areas the selection and training was not completed. Among recently delivered women, in LPS information was received from mostly from ASHA (78%) then ANM and friends/ relatives [21]. Mostly health care institutions are source of information but neighbors and relatives are also substantial source of information [33]. Like present study among pregnant women or eligible women ANM was main source in 58.6 to 100% and additionally source was ASHA [19,37]. Among beneficiaries the source of information was ASHA from 21.0 to 85.1% and ANM from 14.9 to 71% and the ratio of ASHA and ANM was inversely proportional. Other sources are AWW/doctors, relatives and mass media like TV/ Radio/ hoardings etc. [26,27-31]. Even though in tribal areas the ASHA scheme started in previous year, about 10% women received information from ASHAs in both the areas. In Maharashtra infrastructure is well developed and ANMs function reasonably and therefore they surpass newly appointed ASHAs.

In most studies the women had reasonable knowledge about purpose, entitlement and nature of the scheme. Only small proportion (3.20%) of women in reproductive age group possesses detail knowledge [36] and slightly higher (10.24%) among pregnant women [37]. The major purpose of JSY according to beneficiaries is as follows; benefits to mother, providing free institutional delivery, providing cash assistance, promoting institutional delivery, and assistance to poor families [27-31,38]. Many recently delivered women although had some idea of scheme, 72% of them did not know about their eligibility [32].

The term benefit in JSY has become synonymous to cash receipt. The proportion of cash receipts ranged from 30-to 85% with lowest proportion in slums [21,27,28,32,35]. In present study about 25% women received benefits in one week and another 25% in one month. In 34.8 to 64.0% cases women received cash benefits within a week [28,32,31]. Everywhere only few women (13.6%) receive benefits at the time of delivery [21]. The amount is to be given at the time of discharge. If given too late it does not serve the purpose.

Maharashtra Government is insisting on payment through cheques to avoid malpractices. But in field the guidelines are not followed to full extent and in majority of cases cash is disbursed. In Maharashtra State there is another scheme of providing maternity assistance in installments in tribal area. The observation of receipt in installments probably is related to the already existing scheme. There is certainly overlap between two schemes. Women who were not sure about receipt and nature constitute a heterogeneous group. Some may be JSY beneficiaries. Contrarily some of the beneficiaries who received installments may belong to earlier scheme. In other states the cash benefit is received in one installment [27-31]. Observations about the provider of money and requirement of submission of documents in present study were similar to other studies [27-31]. About 10% women confessed that they faced problems. Many women did not want do disclose and most probably large chunk among this group must have faced problems.

The required certificates are not usually available with them [32]. They have to obtain the certificates to seek benefits. The experience of the women indicates that obtaining certificate is a difficult and time consuming task. Although small percentage, the health workers demanded some cuts from due payment. About 30 to 70%beneficiaries from LPS had to make payments while they were admitted for delivery [21,27-31]. A qualitative study vividly pointed few hurdles like inadequate awareness, criteria of eligibility, cumbersome procedure involving extensive paper work, and insufficient focus on community involvement. There were anecdotal reports of political interference and possibility of scope for corruption [38].

The women solved their problems resorting to most logically ways. They arranged all documents, paid some money to workers, and sought influence from various categories. Present study draws inference about factors responsible for non-receipt of benefits by comparing.

Direct interviews in one small study revealed following common reasons for not getting the benefit; lack of information of JSY (37.19%), difficulty in getting the documents in time (25.62%) and delay by ANM (15.29%) [22]. Similar to present study variables like per capita income, education of head of the family, education of woman, socio-economic status, earlier ANC registration, religion, area of locality

were different among between availing and not availing benefits [32].

5. CONCLUSION

The present study attempts identification of factors responsible for unsatisfactory uptake of the scheme. Only about fifty percent of eligible women are getting benefits. There are substantial differences between beneficiaries and non-beneficiaries. Following factors are responsible for low uptake of the scheme; Women residing in slum areas and councils, young/first para, not earning/ housewives, not attending ANC clinics, delivering normally, women delivering in private hospitals, undergone cesarean section and unaware about the scheme. Most of the identified factors are amenable for corrections. If actions are taken to improve the implementation of the scheme, almost all eligible women may get the benefits, helping reduction in maternal and neonatal mortality.

5.1 Recommendations

Target oriented mass educational drive particularly involving ASHAs is recommended. The health workers must provide special attention toward non-earning/laborer women. Government may consider some simplification of procedures. These modifications in long run will help achieving the objectives of the scheme.

5.2 Limitations

The non-beneficiaries were not interviewed to obtain details. Large number of women was non-responsive while knowledge and utilization was assessed. There is delay in analysis of data.

CONSENT

Waiver for written consent was given and only verbal consent obtained.

ETHICAL APPROVAL

Institutional Ethical Committee approved the study.

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COMPETING INTERESTS

Authors declared that no competing interests exist.

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