Systematic Review article

Effectiveness of Janani Suraksha Yojana (JSY) for Utilization of Reproductive and Child Health Services by Pregnant Women in India: A Systematic Review

Spriha Bhaskar[1], Gaurav Ojha[2], Roja VR[3], Anil Kumar[4], Habib Hasan Farooqui[5], Arti Sharma[6]

[1] MPH, NQAS - District Nutrition Specialist- Hardoi, Uttar Pradesh Technical Support Unit (UPTSU)

[2] MPH- District Epidemiologist, National Health Mission (NHM), Govt. of UP

[3] MPH- Epidemiology, Project Coordinator, St. Johns Research Institute Bangalore

[4] MBBS, MD- Senior Resident, Dept. of Neonatology, AIIMS- Rishikesh, Uttarakhand

[5] MBBS, MD- Associate Professor, Indian Institute of Public Health – Delhi.

[6]MPH, IGD, Trainee - CSSIC, Etawah, Uttar Pradesh

Corresponding Author: Dr. Spriha Bhaskar

Abstract

Background: In 2005 the Government of India launched Janani Suraksha Yojana (JSY), an integral component of National Rural Health Mission (since 2013 the program has been called the National Health Mission), by modifying existing National Maternity Benefit Scheme which provides cash incentives to pregnant mothers and Accredited Social Health Activists to reduce maternal and neo-natal mortality by promoting institutional delivery.

Methodology: The study has been developed according to the Preferred Reporting Items for Systematic reviews and Meta-Analysis- Protocol' (PRISMA-P) guidelines. The search was limited to only English literature including those studies which were published after the initiation of JSY schemes in NRHM (April 2005). Search was undertaken in Electronic searches such as PubMed, Research Gate and Google Scholar for collecting and collating related information.

Result: This search yielded total of 1954 articles. Out which only 31 were relevant to the topic concerned. Full text papers of 90 eligible studies were reviewed after the first step screening. Ultimately, 31 articles were found eligible for this systematic review. Out of this, 4 studies had a comparison group and the remaining were without a comparison group. Evidence on effectiveness of JSY in terms of related outcomes is presented through narrative synthesis.

Conclusion: This study helps us drawing conclusions based on best available evidence for effectiveness of Janani Suraksha Yojna Scheme (one of the largest Conditional Cash Transfer scheme in the world) in achieving its primary objective of increasing institutional deliveries. Studies included were reviewed so efficiently to integrate existing information and provide data for rational decision making to improve maternal mortality and infant mortality.

Introduction

Complications during pregnancy and childbirth are a leading cause of death and disability among women of reproductive age in developing countries. WHO defines "**Maternal death**" as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. Globally, about 830 women die every day of preventable causes related to pregnancy and childbirth; 20

per cent of these women are from India. Almost all of these deaths occurred in low-resource settings, and most could have been prevented. Annually, it is estimated that 44,000 women die due to preventable pregnancy-related causes in India. The Maternal Mortality Ratio (the number of maternal deaths per 100,000 live births) reduced from 212 in 2007 to 167 in 2013.[1] The recent Sample Registration Survey puts the MMR data for India reported in 2011, as 167 maternal deaths per 100,000 births (Government of India, 2013) and 39 under-five deaths per 1000 live births. About 44.4 percent of the deaths were institutional and 55.6 percent received medical attention other than in institutions in 2016. [2]

In 2005, India implemented health system reforms by launching the National Rural Health Mission. A flagship intervention of this mission was Janani Suraksha Yojna (JSY) conditional cash transfer program, which aims to improve maternal health outcomes by financially encouraging women to deliver at healthcare facilities. The scheme focuses on the poor pregnant woman with special dispensation for states having low institutional delivery rates namely North Eastern (NE) states (Uttar Pradesh, Uttarakhand, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Himachal Pradesh, Rajasthan, Orissa, and Jammu and Kashmir) all pregnant women are eligible, and benefits are paid regardless of whether they deliver in a government or in a private accredited institution, and regardless of birth order. While these states have been named as Low Performing States (LPS), the remaining states have been named as High performing states [3]. This study helps us drawing conclusions based on best available evidence for effectiveness of JSY Scheme in achieving its primary objective. Studies included is reviewed so efficiently to integrate existing information and provide data for rational decision making to improve quality of services for pregnant mothers and new born. This review seeks to establish, through the available literature. The specific review questions to be addressed are:

(a) To study the effectiveness of JSY for utilization of RCH services.

(b) To study the determinants for utilization of Reproductive and child health services under JSY.

Methodology

This descriptive systematic review was reported in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA-P) guidelines.

Criteria for considering studies for the review

Inclusion criteria

Table 3.1 Characteristics of study

Population	Intervention	Comparison	Related Outcomes	Types of studies
Pregnant mothers	Janani Suraksha Yojna	1. Pregnant women who utilized RCH services under JSY 2. Pregnant women who did not utilized RCH services under JSY	1. Awareness of JSY scheme 2. Registration of pregnant women under JSY 3. Institutional deliveries 4. Ambulance/ transport facilities 5. Antenatal and Post natal care 6. Receipt of Financial assistance under JSY	(a). Analytic study designs (case-control studies, cohort studies and analytical cross sectional studies) (b). Descriptive studies (case report, case series, and cross-sectional studies).

Exclusion Criteria

Those studies are excluded if they are letters, editorials, commentaries, meta-analysis, conference papers which are unrelated to topic concerned and studies that did not satisfy the review purpose. At the end articles relevant will be reviewed.

Study selection

Studies were reviewed based on the exclusion and inclusion criteria, in two stages.

- During the first stage of title and abstracts screening, titles and abstracts of the studies identified from the search was assessed for inclusion. When the study got approved, then was moved to the next stage of full text screening.
- In the second stage of full text screening, full texts of abstracts selected in the previous stage was screened for eligibility.

Search strategy for identification of studies

The search strategy will be designed to access both published and unpublished materials and will comprise three stages:

(1) A limited search of Medline, Google Scholar and Research Gate to identify relevant keywords contained in and subject the title, abstract descriptors.

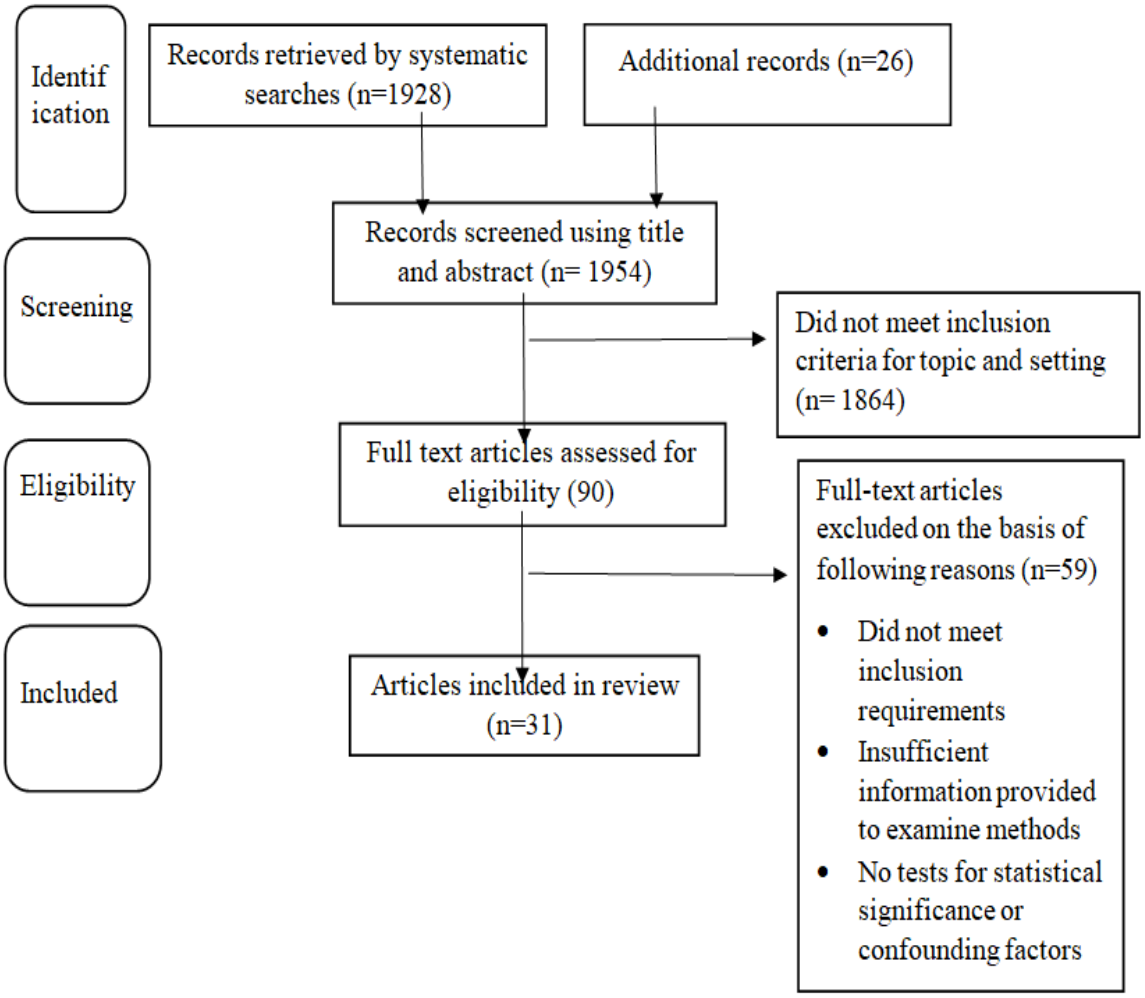
(2) Terms identified in this way, and the synonyms used by respective databases, was used in an extensive search of the literature.

(3) Reference lists and bibliographies of the articles collected from those identified in stage two above was searched.

Table: 3.2 Search Details table

Search Strategy	**List of databases and e-journals searched**
Keywords used: Janani Suraksha Yojana, Maternal health, child health services, utilization, impact, Conditional cash transfer, Institutional delivery, Maternal mortality, Antenatal care, Delivery care, Cash assistance scheme, India. Used with MESH terms OR , AND Search was limited to publication year 2005 – 2017	PubMed, Research Gate, Indian Journal of Public Health, BMC Health Services Research, Global Health Action, Elsevier, Plos One, International Journal of Gynecology and Obstetrics, Pregnancy and Childbirth, Reproductive Journal of Health, The Journal of Family Welfare, WHO South-East Asia Journal of Public Health, International Journal of Equity in Health, International Journal of Epidemiology, Social science and medicine

Figure: 3.1 Flow diagram of screening and selection of studies



Formulation of Search Strategy

A comprehensive computerised search was conducted to search for empirical studies focusing on the effectiveness of Conditional cash assistance scheme (JSY) in India. Search was undertaken in Electronic searches for collecting and collating the related information. Literature search strategies was developed using medical subject headings (MeSH) and text words related to the topic concerned. The search was limited to only English literature including those studies which were published after the initiation of JSY schemes in NRHM (April 2005) into health system of India. This search yielded total of 1954 articles. Out which only 90 were relevant to the topic concerned. Full copies of articles identified by the search and considered to meet the inclusion criteria, based on their title, abstract and subject descriptors, was obtained for data synthesis. Articles identified through reference list and bibliographic searches was also considered for data collection based on their title.

Data Collection Process

Data was extracted on Microsoft Excel 2013. A standardized data extraction form was developed to collect information from the selected studies on the relevant impact outcomes, besides the general and methodological aspects. The latter included information on year of publication, study design, duration and location of the study and outcome assessed, etc. The studies selected in the review were divided into two groups i.e., with a comparison or control

group (against which the insured group was measured) and without a control group (descriptive in nature). To assess the impact on utilization, OOP expenditure and health indicators, studies with a comparison group alone were reviewed. Process level indicators were assessed based on the findings of studies from both the groups, i.e. with and without control group. Further, quality of these studies was assessed by Effective Public Health Practice Project (EPHPP) quality assessment tool for quantitative studies. This standardized tool was developed in order to provide high quality systematic reviews to address the public health sector's need for evidence to support practice. Final results of the "Quality Assessment Tool for Quantitative Studies" lead to an overall methodological rating of strong, moderate or weak in The components of quality assessment in the EPHPP tool include type of study, presence of any kind of selection bias, consideration to blinding and confounders, validity and reliability of the data collection tools and consideration to withdrawals and loss to follow ups, if any. RevMan software 5.3 has been used to make risk assessment graph and risk assessment summary for those studies having control group.

Ethical Consideration

The ethical approval for the study was taken by Institutional Ethics Committee (Indian Institute of Public Health, Delhi (ECR/124/Inst/HR/2014). For this proposed review data was collected from already published articles using search engines. The study is based on secondary literature review. Hence an ethics exemption was sought. So, patient information sheet and informed consent was not needed for study.

Result

Summary of the main findings

A total of 1954 articles were identified from databases (n = 1928) and additional search (31) as shown in (Figure 3.1) After removing duplicates, the remaining 1954 articles were screened by applying inclusion criteria to the titles and abstracts. A total of 1868 articles were excluded in the first stage screening and 90 studies were identified as eligible for second screening. Full text papers of these 90 studies were reviewed. Ultimately, 31 articles were found eligible for this systematic review. Out of this, four studies had a comparison group (Table: 4.3) and the remaining were without a comparison group.

General characteristics of selected studies

Out of the 31 studies, 12 are cross-sectional studies, 6 are secondary data analysis, 4 are mixed method, one retrospective study, two qualitative , one quasi-experimental, one Difference in difference, one cohort, one desk review, one review and one is systematic review (Table 4.3). More than half, 80.6% (n = 25) of these studies were done within 10 years of the implementation of the scheme, followed by 16.1% (n=5), assessing the scheme following 10 years after implementation. For the rest, 3.2% of the studies duration between implementation of the scheme and evaluation of the study was not clearly stated in the article.

Effectiveness of Janani Suraksha Yojna for utilization of RCH Services

Effectiveness is described as "the extent to which the intervention, when used appropriately, achieves the intended effect". (Table 4.4) summarizes the impact of JSY scheme reported in the selected 31 studies. Total of 18 studies accessed the effectiveness of JSY. Among these, 13 studies (72%) showed that there is increase in institutional delivery after introduction of JSY.

Table 4.1: Characteristics of selected studies

Sr. No.	Characteristics	Number of studies
1.	**Study design**	
	Cross-sectional	12
	Quasi experimental design	1
	Difference in difference	1
	Mixed Method	4
	Prospective study	1
	Retrospective study	1
	Secondary data analysis	6
	Systematic Review	1
	Review	2
	Qualitative Study	2
2.	**Duration b/w implementation of the scheme and evaluation of the study**	
	Equal to or less than 10 years	26
	Greater than 10 years	5
3.	**Impact outcome**	
	Increase in Institutional delivery	13
	Awareness of JSY scheme	2
	Registration of pregnant women under JSY	2
	Antenatal and Post natal care	2
	Determinants of JSY	6
4.	**Geographical focus of these study**	
	Madhya Pradesh	10
	West Bengal	1
	Orissa	1
	Uttar Pradesh	6
	Jharkhand	4
	Chhattisgarh	3
	Karnataka	1
	Delhi	1
	Tamil Nadu	1
5.	**Year of Publications**	
	2008	1
	2010	2
	2011	1
	2012	7
	2013	3
	2014	6
	2015	4
	2016	4
	2017	2
	Not stated	1

Sr. No.	Outcomes Accessed	No. of Articles	Evidence
1.	**Institutional delivery**	18	13 studies out of them showed that JSY was effective enough to increase institutional delivery, but no studies reported the positive impact of the scheme on reducing maternal mortality. Though the scheme appeared to increase institutional delivery by at-risk mothers (Gupta et al., 2012). Despite government efforts, MMR in India is unacceptably high and the scheme had put no significant impact on the profile of dying mothers (Guin et al., 2012).
2.	**Awareness of JSY scheme**	2	2 studies (Thongkong et al., 2017) and (Vikram et al., 2013) accessed the awareness of JSY Scheme.
3.	**Registration of pregnant women under JSY**	2	(Kumar et al., 2015) reported that 96.34% of the women got antenatal registration in the post-JSY-implementation phase.
4.	**Ambulance/transport facilities**	1	A Study revealed that it is difficult to get the Janani (ambulance), for pregnant mothers particularly in the night.
5.	**Antenatal and Post natal care**	2	The study (Gopalan and Varatharajan, 2012) shown that the number of institutional deliveries, ante-and post-natal care visits increased after the introduction of JSY with an annual net growth of (18.1%), (3.6%) and (5%) respectively.
6.	**Receipt of Financial Assistance under JSY**	6	The reasons for not availing benefits includes not having a bank account (24.3%), followed by not having Aadhaar number (9.7%), 11.8% had no ration card, and 13.8% stayed in their mother house.

Table 4.3: Summary table of quality assessment of quantitative studies with control group according to EPHPP. Scoring: 1= strong, 2=moderate, 3=weak

Studies	Selection bias	Study design	Confounders	Blinding	Data collection method	Withdrawals and dropouts	Global rating (quality of the study)
(Powell-Jackson et al., 2015)	2	2	2	2	1	3	Moderate
(Amudhan et al., 2013)	1	1	1	2	1	1	Strong
(Thongkong et al., 2017)	1	1	1	2	1	1	Strong
(Guin et al., 2012)	1	2	2	2	2	3	Moderate

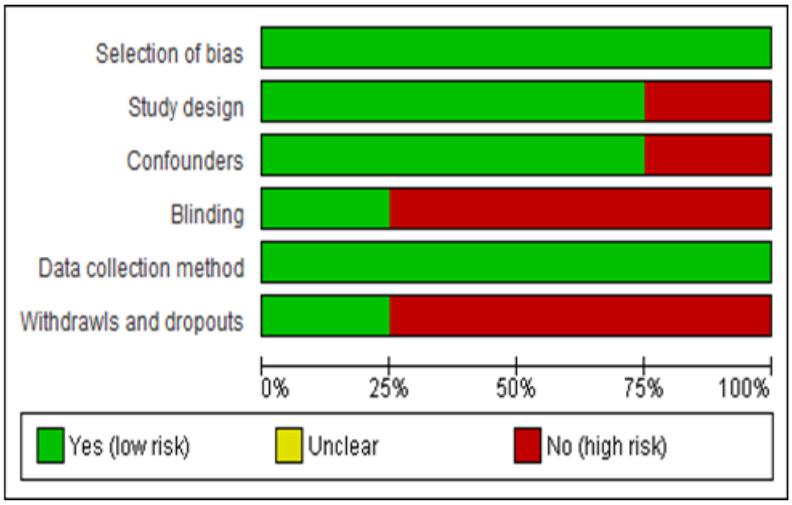


Fig: 4.1 Risk of bias graph for studies having control group

Fig: 4.2 Risk of bias summary for studies having control group

	Factors associated with utilization of RCH services				
Studies	**Maternal Education**	**Socio-economic status**	**Distance from health facilities**	**Number of ANC check-ups**	**Out of Pocket Expenditure**
(Govil et al., 2016)	Positively associated	Positively associated			Positively associated
(Mukhopadhyay et al., 2016)	Positively associated		Negatively associated		
(Vora et al., 2015)	Positively associated		Negatively associated		
(Varma et al., 2010)	Positively associated		Positively associated	Positively associated	
(Randive et al., 2014)	Positively associated	Positively associated			
(Modugu et al., 2012)	Positively associated	Positively associated		Positively associated	
(Deshpandey, 2011)					Positively associated

Determinants for utilization of Reproductive and child health services

The studies selected in the review showed that utilization of RCH services was associated with various factors as shown in (Table 4.5). The study done by [4] shown that the increased literacy and wealth were associated with a higher likelihood of an institutional delivery, higher OOPE but no major variations in use of the JSY. In other study done by [5], shown that residing at a place that was more than 5 km from a functional delivery hub had a negative effect on opting for an institutional delivery. Education beyond the primary level increased the odds for institutional deliveries only when private institutions were included. The most significant factor found in this study to have a relationship with government institutions was JSY-eligibility with cash incentive. One study reported that women who live within a radius of 3 km from the Block PHC/ 24*7 PHC/CHC were more likely to seek an institutional delivery than those living 8km or more from the facility [6]. Further one study showed that the JSY cash incentive played a lesser role as an enabling factor because of higher opportunity costs in the use of healthcare facilities versus home for childbirth [7]. In contrast, the cash incentive component of the JSY was less influential in serving as an enabling factor to access institutional delivery care facility. This was due to the higher opportunity costs associated with use of health facility over home for childbirth, as well as to the inability of the JSY payments to fully cover the monetary costs of institutional delivery, particularly for disadvantaged groups who may lack access to infrastructure (e.g., bank accounts, private vehicles). Studies highlighted importance of parity in accessing of an institutional delivery care facility. Yet another issue that affects the proper utilization of the scheme is the documentation required to get the money. While the original guidelines just require a BPL certificate and a [8]. Poor quality of client-provider interaction and the lack of basic services. Electricity in health facilities were identified as barriers to institutional delivery. Bad behavior of the staff was mentioned more often by women who delivered at home than those who delivered in a health facility. The lack of privacy was identified as a barrier to institutional delivery. Further, among those delivered in institutions, it has been found that, on an average women stayed for less than a day in the hospital after delivery increasing the risk of infections for mother and child. Hence, the barriers in non-accessing the institutional deliveries should be focused and more efforts were needed to motivate women for institutional delivery.

Discussion

This systematic review found research evidence on the primary review objective of this study to assess the effectiveness of JSY and secondary objective to review the determinants of RCH services utilization under JSY. Evidence on effect on maternal and infant mortality and morbidity outcomes was insufficient with most studies to assess impacts on health outcomes. 13 studies out of 18 showed that JSY was effective enough to increase institutional delivery, but no studies reported the positive impact of the scheme on reducing maternal mortality. We sought to move beyond the constraints of previous systematic reviews for finding out the effectiveness of JSY and to learn from existing experiences with implementation in a wide range of settings by using a comprehensive set of review questions to find out the impact related outcomes beyond institutional delivery by adopting a more inclusive approach to studies. Though the scheme appeared to increase institutional delivery by at-risk mothers, study by [9] shown that among those who had institutional deliveries, there were significant increases in cases of eclampsia, pre-eclampsia, polyhydramnios, oligohydramnios, antepartum haemorrhage (APH), postpartum haemorrhage (PPH), and malaria after implementation of JSY. A systematic review [10] focuses on Mexico's PROGRESA/ Oportunidades scheme which offers a quite different scenario as it does not have maternal health as its primary focus but rather as a sub-component of a national scheme to address

child poverty and disadvantage, but it can provide general lessons on how to embed a monitoring and rigorous evaluation structure within a large scale long term.

A study [11] showed that JSY-eligible population, if not provided with the incentive would run the risk of halving their chances to decide in favor of an institutional delivery. The results of the above study toes the same line as the systematic review which had concluded that CCTs can help to improve the use of priority maternal services including birth in health care facilities [12]. Majority of the beneficiaries did not receive direct cash transfer benefits in urban area than rural area and there is a need to simplify the procedures to improve the uptake of services to this group [13]. Low socio-economic position was the most important predictor of underutilization with a clear gradient across SEP quintiles.

Government funded health insurance and conditional cash transfers schemes were underutilized in this community [14]. A study [15] accessed that though inequality in access to institutional delivery care persists but it has reduced since the introduction of JSY. Compared to richest division in nine states, poorest division has 135 more maternal deaths per 100,000 live births in 2010. While MMR has decreased in all areas since JSY, it has declined four times faster in richest areas compared to the poorest, resulting in increased inequalities.

These findings suggest that in order for the cash incentive to succeed in reducing the inequalities in maternal health outcomes, it needs to be supported by the provision of quality health care services including EmOC. Improved targeting of disadvantaged populations for the cash incentive program could be considered. Although this review finds a general increase in utilization of JSY scheme, the reason behind is the cash assistance provided to pregnant mothers on institutional delivery. Further it could also be attributed to maternal education shown positive association in most of the studies. Other factors such as distance of hospital from home, socio-economic status also determines the utilization. Studies accessed that in the beginning of introduction of scheme, the awareness level was low but as time passed, awareness level improved which further lead to increase in scheme utilization. Hence, the JSY has increased institutional delivery but still India is lagging behind in reducing MMR and IMR. So, barriers in non-accessing the institutional deliveries should be focused and more efforts were needed to motivate women for institutional delivery.

Strength of the study

This review has been conducted to synthesis evidence for assessing effectiveness of JSY not in terms of only institutional deliveries but also in relation to its awareness, ante natal registrations, transport facilities, antenatal and post natal care and receipt of cash assistance. An attempt was made to know about services offered and quality of treatment available in the public health care system. To draw attention of policy makers to ensuring access to health care services and to delivering appropriate care to poor.

Limitations of the study

Most of the study included in this review were without comparison group, hence it was difficult to found the actual impact of the scheme. Further, limited time period to conduct a systematic review by a single author made a challenge.

Conclusion and Recommendations

Conclusion

JSY scheme has been initiated by the government of India to increase institutional delivery. The review suggests that the programme has substantial effects on utilization of maternal health services but did not made any significant impact on reducing MMR and IMR. Despite of great efforts by the government, the expected level of institutional delivery could not be

achieved. However, the barriers like social, geographical, cultural and financial limits the impact of JSY. The findings of this study provide insights for planning and implementing appropriate maternal health service delivery programs in order to improve the health and well-being of both mother and child. Synthesis of evidence suggests some key messages for future directions for schemes employing conditional cash assistance for maternal health.

Recommendations

There is good evidence that JSY had helped to increase the use of priority maternity services including births in healthcare facilities. Concurrent initiatives are required to reduce barriers and ensure high quality care to be provided at each level from period of conception to delivery of baby and afterwards. Secondly, targeting of vulnerable population should be as simple as possible, using existing systems for example India's Below Poverty Line card for to identify beneficiaries. Additional efforts should be made to ensure identification and inclusion of those on the social margins who do not possess necessary official documentation or who are otherwise systematically excluded by the targeting system. Thirdly, effort should be made to improve co-ordination between public and private health facilities.

Supporting Information

Annexure A: PRISMA Checklist.
Annexure B: EPHPP Checklist.

References

1. WHO. WHO | Maternal mortality [Internet]. WHO. 2016 [cited 2018 Apr 7]. Available from: http://www.who.int/mediacentre/factsheets/fs348/en/
2. SRS. Census 2011, Vital statistics [Internet]. 2011 [cited 2018 Apr 4]. Available from: http://www.censusindia.gov.in/vital_statistics/SRS_Report_2014/8.%20Chap%204-Mortality%20Indicators-2014-U.pdf
3. JSY. Janani Suraksha Yojana (JSY) | National Health Portal Of India [Internet]. 2015 [cited 2018 Mar 17]. Available from: https://www.nhp.gov.in/janani-suraksha-yojana-jsy-_pg
4. Govil D, Purohit N, Gupta SD, Mohanty SK. Out-of-pocket expenditure on prenatal and natal care post Janani Suraksha Yojana: a case from Rajasthan, India. Journal of Health, Population and Nutrition. 2016 May 20;35:15.
5. Mukhopadhyay DK, Mukhopadhyay S, Mallik S, Nayak S, Biswas AK, Biswas AB. A study on utilization of Janani Suraksha Yojana and its association with institutional delivery in the state of West Bengal, India. Indian Journal of Public Health. 2016 Apr 1;60(2):118.
6. Varma D s, KHAN ME, AVISHEK HAZRA. Increasing Institutional Delivery and access to emergency obstetric care services in rural uttar pradesh. The Journal of Family Welfare. 2010;56:8.
7. Vellakkal S, Reddy H, Gupta A, Chandran A, Fledderjohann J, Stuckler D. A qualitative study of factors impacting accessing of institutional delivery care in the context of India's cash incentive program. Soc Sci Med. 2017 Apr;178:55–65.
8. Devadasan N, Elias MA, John D, Grahacharya S, Ralte L. A conditional cash assistance programme for promoting institutional deliveries among the poor in India: process evaluation results. 2008;17.
9. Gupta SK, Pal DK, Tiwari R, Garg R, Shrivastava AK, Sarawagi R, et al. Impact of Janani Suraksha Yojana on Institutional Delivery Rate and Maternal Morbidity and Mortality: An Observational Study in India. J Health Popul Nutr. 2012 Dec;30(4):464–71.

10. Murray SF, Hunter BM, Bisht R, Ensor T, Bick D. Effects of demand-side financing on utilisation, experiences and outcomes of maternity care in low- and middle-income countries: a systematic review. BMC Pregnancy and Childbirth. 2014 Jan 17;14:30.
11. Times of India. India's Maternal Mortality Rate on a decline [Internet]. https://www.hindustantimes.com/. 2017 [cited 2018 Mar 17]. Available from: https://www.hindustantimes.com/health/india-s-maternal-mortality-rate-on-a-decline/story-ZcnBG0kidtvPEkRnKNI0II.html
12. Gopalan SS, Varatharajan D. Addressing maternal healthcare through demand side financial incentives: experience of Janani Suraksha Yojana program in India. BMC Health Serv Res. 2012 Sep 15;12:319.
13. Rajarajan K, Kumar SG, Kar SS. Proportion of beneficiaries and factors affecting Janani Suraksha Yojana direct cash transfer scheme in Puducherry, India. J Family Med Prim Care. 2016;5(4):817–21.
14. Devasenapathy N, Jerath SG, Allen E, Sharma S, Shankar AH, Zodpey S. Reproductive healthcare utilization in urban poor settlements of Delhi: Baseline survey of ANCHUL (Ante Natal and Child Health care in Urban Slums) project. BMC Pregnancy and Childbirth. 2015 Sep 8;15:212.
15. Randive B, San Sebastian M, De Costa A, Lindholm L. Inequalities in institutional delivery uptake and maternal mortality reduction in the context of cash incentive program, Janani Suraksha Yojana: results from nine states in India. Soc Sci Med. 2014 Dec;123:1–6.
16. Vikram K, Sharma AK, Kannan AT. Beneficiary level factors influencing Janani Suraksha Yojana utilization in urban slum population of trans-Yamuna area of Delhi. Indian J Med Res. 2013 Sep;138(3):340–6.
17. Kumar V, Misra SK, Kaushal SK, Gupta SC, Khan AM. A study on the effect of janani suraksha yojana on antenatal registration and institutional deliveries in the Agra district of Uttar pradesh. Indian Journal of Public Health. 2015 Jan 1;59(1):54.
18. Vora KS, Mavalankar DV, Ramani KV, Upadhyaya M, Sharma B, Iyengar S, et al. Maternal Health Situation in India: A Case Study. J Health Popul Nutr. 2009 Apr;27(2):184–201.
19. Sidney K, Tolhurst R, Jehan K, Diwan V, De Costa A. "The money is important but all women anyway go to hospital for childbirth nowadays" - a qualitative exploration of why women participate in a conditional cash transfer program to promote institutional deliveries in Madhya Pradesh, India. BMC Pregnancy Childbirth. 2016 Mar 4;16:47.
20. Chaturvedi S, Upadhyay S, De Costa A. Competence of birth attendants at providing emergency obstetric care under India's JSY conditional cash transfer program for institutional delivery: an assessment using case vignettes in Madhya Pradesh province. BMC Pregnancy Childbirth. 2014 May 24;14:174.
21. Ng M, Misra A, Diwan V, Agnani M, Levin-Rector A, De Costa A. An assessment of the impact of the JSY cash transfer program on maternal mortality reduction in Madhya Pradesh, India. Glob Health Action [Internet]. 2014 Dec 3 [cited 2018 Mar 17];7. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4256523/
22. Thongkong N, van de Poel E, Roy SS, Rath S, Houweling TAJ. How equitable is the uptake of conditional cash transfers for maternity care in India? Evidence from the Janani Suraksha Yojana scheme in Odisha and Jharkhand. Int J Equity Health [Internet]. 2017 Mar 10 [cited 2018 Mar 31];16. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5345245/

23. Amudhan S, Mani K, Rai SK, S Pandav C, Krishnan A. Effectiveness of demand and supply side interventions in promoting institutional deliveries – a quasi-experimental trial from rural north India. Int J Epidemiol. 2013 Jun 1;42(3):769–80.
24. UNICEF. Maternal Health | UNICEF, INDIA [Internet]. [cited 2018 Apr 4]. Available from: http://unicef.in/Whatwedo/1/Maternal-Health
25. Srivastava A, Avan BI, Rajbangshi P, Bhattacharyya S. Determinants of women's satisfaction with maternal health care: a review of literature from developing countries. BMC Pregnancy Childbirth [Internet]. 2015 Apr 18 [cited 2018 Apr 7];15. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4417271/
26. Say L, Chou D, Gemmill A, Tunçalp Ö, Moller A-B, Daniels J, et al. Global causes of maternal death: a WHO systematic analysis. The Lancet Global Health. 2014 Jun 1;2(6):e323–33.
27. Gupta SK, Pal DK, Tiwari R, Garg R, Shrivastava AK, Sarawagi R, et al. Impact of Janani Suraksha Yojana on Institutional Delivery Rate and Maternal Morbidity and Mortality: An Observational Study in India. J Health Popul Nutr. 2012 Dec;30(4):464–71.
28. Vora KS, Koblinsky SA, Koblinsky MA. Predictors of maternal health services utilization by poor, rural women: a comparative study in Indian States of Gujarat and Tamil Nadu. J Health Popul Nutr [Internet]. 2015 Jul 31 [cited 2018 Mar 17];33. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5026000/
29. Modugu HR, Kumar M, Kumar A, Millett C. State and socio-demographic group variation in out-of-pocket expenditure, borrowings and Janani Suraksha Yojana (JSY) programme use for birth deliveries in India. BMC Public Health. 2012 Dec 5;12:1048.
30. Deshpandey RV. Is Janani Suraksha Yojna (JSY) contributing to the reduction of maternal and infant mortality? An insight from Karnataka. The Journal of Family Welfare. 2011;57:9.
31. Randive B, Diwan V, Costa AD. India's Conditional Cash Transfer Programme (the JSY) to Promote Institutional Birth: Is There an Association between Institutional Birth Proportion and Maternal Mortality? PLOS ONE. 2013 Jun 27;8(6):e67452.
32. Guin G, Sahu B, Khare S, Kavishwar A. Trends in Maternal Mortality and Impact of Janani Suraksha Yojana (JSY) on Maternal Mortality Ratio in a Tertiary Referral Hospital. J Obstet Gynaecol India. 2012 Jun;62(3):307–11.
33. Powell-Jackson T, Mazumdar S, Mills A. Financial incentives in health: New evidence from India's Janani Suraksha Yojana. Journal of Health Economics. 2015 Sep;43:154–69.