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Original Research Article

Study of impact of JSSK scheme on institutional deliveries and maternal mortality rate: Visakhapatnam district Andhra Pradesh

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ABSTRACT

Background: To study the impact of JSSK scheme on institutional deliveries in Visakhapatnam district, A.P. To assess the awareness among the target population (i.e.,) delivered women regarding this programme. To evaluate the trends of MMR in Visakhapatnam district after the start of JSSK programme in 2011.
Methods: This is an observational study, in the first phase all the data was collected on total number of deliveries occurred in Visakhapatnam district, A.P from year 2013-14 to 2017-October. This includes all institutional and home deliveries from Visakhapatnam district. Data of MMR and IMR, also collected for the same period. A point survey was done at VGH over a period of a month in October 2017. Total 464 delivered women during this period were given a structured questioner which includes age, parity, SC status, educational status, booked status and awareness about JSSK programme, its source of information and feedback was taken regarding satisfaction towards health services in VGH. Finally, a comparative analysis was done with MMR and IMR status of Visakhapatnam district and AP state with that of India.
Results: In this study 87.8% of delivered women at VGH during the study period are unaware of JSSK programme. Level of socio economic status, education and parity played a big role in bringing out the awareness. Most of the awareness comes through anganwadi workers, ANMs and advertisements in media. 98.9% expressed their satisfaction with the health services at VGH.
Conclusions: Pregnant women die in India due to a combination of important factors like, poverty, ineffective or unaffordable health services, Visakhapatnam district tops the lists of MMR and IMR in the state of Andhra Pradesh and most important factor effecting the JSSK success is lack of awareness in target population. There is a need to understand more about the individual- and area-level characteristics that contribute to variations in programme achievements. A greater in depth study should be undertaken at community level to analyse each maternal death individually. To achieve target MDG of MMR 100/2020 and IMR 28/2019 state needs to reach the unreached and motivate all needy women specially with low S.E. status towards institutional deliveries by proper campaigning to enlighten them that all maternal and child services including transport are absolutely free.

Keywords: Institutional deliveries, IMR, JSSK scheme, MMR

INTRODUCTION

The key to the progress of a country lies in reducing its maternal and child mortality and morbidity. Though India has made rapid economic progress in last few years, the human development indicators have not shown similar progress. MMR may be on a decline, still about five women die every hour in India from complications

developed during childbirth.[1] The recent World Bank data puts the MMR for India reported in 2015 at 174 per 100, 000 live births accounts for 17% of such deaths globally, a significant decline from the 215 reported in 2010.[2]

The Government of India has been implementing various programmes from time to time to tackle these issues.[3] It launched the Reproductive and Child Health (RCH) programme in 1997, Reduction in MMR was an important goal of RCH-II that was launched in 2005 mainly aiming to provide emergency obstetric care at the first referral unit. (Ministry of Health and Family Welfare 2008). Later in 2005, the Government of India launched the National Rural Health Mission (NRHM) mainly to strengthen health services in the rural areas.

It seeks to provide effective health care to the rural population by strengthening public health systems and improving access. Under the NRHM, there is a specific scheme - the Janani Suraksha Yojana (JSY), one of the world's largest conditional cash transfer schemes which was introduced in April 2005. The main objectives of JSY scheme were reducing MMR and IMR by encouraging institutional deliveries, particularly in Below Poverty Line families by providing cash incentives to women who opt for institutional deliveries and also to the local health functionary ASHA who motivates the family for institutional delivery and helps them in obtaining ante-natal and post-natal services. JSY, which has had over 80 million beneficiaries, has been successful in raising the proportion of facility births to 74.4% in 2013, holds great hopes and promises to serve the deprived undeserved communities of rural.

But it is not only the mere establishment of physical facility but a combination of factors such as distance, availability and quality of skills, adequacy of infrastructure and access to alternative sources of care that seem to influence health-seeking behaviour. Some of the important factors like awareness, knowledge, attitude, utilization pattern and the satisfaction of the beneficiaries also influence any program's success. Over a period of last seven years, since the launch of National Rural Health Mission, there has been a significant fall in MMR in Andhra Pradesh (154 in 2004-06 SRS to 134 in 2007-09 SRS). The institutional deliveries increased to 95.2% (50% in public Health facilities). There are however more than 25% pregnant women who still hesitate to access public health facilities.[4] Important factors affecting access include High out of pocket expenses on Diagnostics tests, blood transfusion Drugs and consumables

Diet and Transport. Out of pocket payments are a major barrier for pregnant women and children so far as to access to institutional healthcare is concerned. Under these circumstances, the goals of NRHM to provision of affordable, and accessible health services are defeated. Under NRHM, it is expected that every pregnant women and infant get timely access to healthcare system for required quality care.

To ensure this, JSSK is launched in state Launched JSSK programme at State level on 22.10.2011. with following objective: To provide free and cashless maternity services and for Sick new born till 30 days after birth in all Government health care institutions including free diet, free diagnostic services, free drugs and consumables, free blood transfusion, Exemption from all kinds of user charges and free referral transport with drop back facility without any out of pocket expenses for the pregnant women and new-born.

METHODS

In the first phase, data was collected on institutional deliveries and maternal deaths from the records of District Medical and Health Department Visakhapatnam from April 2013 to October 2017. In the second phase, all women delivered in the month of October 2017 in Obstetrics and Gynecology Department at Victoria Government Hospital for Women and Children were prospectively analyzed, the data was collected to include information on age, parity, socio economic and educational status, area of residence, type of antenatal care, status and source of awareness about JSSK.

This observational study was planned with the objectives to assess the impact of JSSK on institutional deliveries, maternal morbidity and mortality and to find out any drawbacks in the implementation of this scheme specially awareness among target population.

RESULTS

Table 1: Data on institutional deliveries in Andhra Pradesh and India.[5,6]

	NFHS-3(2005-06)			DLHS-3(2007-09)			CES (2009)		
	Total	**Rural**	**Urban**	**Total**	**Rural**	**urban**	**Total**	**Rural**	**Urban**
Andhra Pradesh	64.4	55.9	81.5	71.8	65.7	90.9	94.2	94.3	94.0
India	38.7	28.9	67.5	46.9	37.8	70.4	72.9	68.0	85.9

Survey data provided as per the period of survey

The proportion of institutional deliveries in India was around 40% in 2005-2006, which continued to increase up to 72% in 2009.In A.P it raised from 64 % in 2005-06 to 94% in 2009.

Source: rapid survey on children 2013-14

All southern states are performing well and most deliveries (more than 90 percent) were assisted by skilled health providers.

Table 2: Data on institutional deliveries in southern states-2013-14.[7]

State	Institutional delivery	Delivered by a skilled health provider	MMR (SRS Bulletin 2011-13)
Andhra Pradesh	91.1	93.3	92
Karnataka	92.0	92.6	133
Tamil Nadu	99.3	99.5	79
Kerala	99.4	99.5	61
India	78.7	81.1	167

Table 3: Distribution of deliveries as per place in Visakhapatnam district.

Year	Home deliveries	Govt. hospital deliveries	Private hospital deliveries	Total deliveries
2007-2008	39.4%	59.8%		
2010-2011	3554 (9.8%)	22477 (62.3%)	10066 (27.89%)	36097
2013-2014	4193 (5.95%)	44400 (62.98%)	21903 (31.07%)	70496
2014-2015	3470 (5.12%)	47097 (69.54%)	17156 (25.33%)	67723
2015-2016	4129 (6.17%)	45742 (68.33%)	17075 (25.51%)	66946
2016-2017	4198 (5.78%)	46538 (64.03%)	21942 (30.19%)	72678
2017-upto Oct	2609 (6.65%)	23992 (61,13%)	12649 (32.23%)	39250

Table 4: Area wise distribution of deliveries in Visakhapatnam district from 2013 to 2016-2017.

Year	District Total deliveries	Rural	%	Urban	%	Tribal	%
2013-2014	70496	35264	50.02	21542	30.56	13690	19.42
2014-2015	67723	36765	54.29	16040	23.68	14918	22.03
2015-2016	66946	27868	41.63	25228	37.68	13850	20.69
2016-2017	72678	26312	36.20	31994	44.02	14372	19.77
2017-upto October	39250	15030	38.29	15735	40.09	8485	21.62

Table 5: MMR across India, state of AP and Visakhapatnam district.

Year	Maternal mortality rate (Visakhapatnam)	Andhra Pradesh	India
1997			408
1999-2001			327
2001-03			301
2004-06	-	154	254
2007-09	167	134	212
2010-12	-	110	178
2011-13	-	92	167
2015	-		140
2011	88.6		
2012	104.8		
2013	86.0		
2014	123.2		
2015	119.6		
2016	108.7	92	
2017	105.7		

Source: Maternal and child tracking system (March 2014) chapter 9 health; DM and HO office Visakhapatnam.

Percentage of Institutional deliveries raised from 60% in 2007-09 to 93% in 2017. Percentage of home deliveries reduced to6.65% from 39.4%. Most of the home deliveries are from Tribal and Rural Areas.

As Visakhapatnam District is trending more towards Urbanization, there is gradual reduction in percentage of rural deliveries. Reduction in MMR correlates more with increase in percentage of tribal region deliveries and shows increased awareness about maternal and child care and institutional deliveries.

Source: Commissioner of health and family welfare, AP. DM and HO office, Visakhapatnam, A. P.

Visakhapatnam showing high MMR (105.7) than the state average MMR of 92.

Source: Commissioner of health and family welfare A.P.

In spite of Urbanisation and institution of JSY/ JSSK, Visakhapatnam tops the list after separation from Telangana District, in MMR 2015-16 with 115 wherein state MMR is 92. Mostly contributed from Agency Tribal region.

Table 6: District wise MMR in Andhra Pradesh.[8]

MMR(2007-09)	State / district	MMR (2015-16)
143	Srikakulam	98
156	Vizianagaram	107
167	Visakhapatnam	115
	East godavari	74
	West godavari	80
	Krishna	79
	Guntur	83
	Prakasam	87
	Nellore	77
	Chittoor	86
	Kadapa	85
	Ananthapur	98
	Kurnool	108
134	State	92

Table 7: Distribution of maternal deaths-area wise in Visakhapatnam district.

Year	Rural	Tribal	Urban	Total deaths	Other districts and states	Total deaths
2013-2014	20	34	6	60	19	79
2014-2015	39	34	14	87	27	114
2015-2016	33	29	17	79	30	109
2016-2017	35	28	15	78	37	115
2017-upto October	20	9	12	41	15	56

Table 8: IMR across India, state of Andhra Pradesh and Visakhapatnam district.

Year	Infant Mortality Rate (Visakhapatnam)	Andhra Pradesh	India
2008	47	52	53
2009	-	49	50
2010		46	47
2011	8.6	43	44
2012	15.1	41	42
2013	9.8	39	40
2014	17.9	41	
2015	16.5		37
2016	11.3		34
2017-Oct 18	10.88		

Source: DM and HO Office Visakhapatnam

As Visakhapatnam serving the medical needs of not only for Costal North-Andhra districts, but most of the patients are referred from the states of Orissa and Chhattisgarh contributing to high MMR in state. Visakhapatnam having 57.95% of urban area and rest is Agency includes rural and tribal areas mostly accounting for this high MMR.

Source: SRS bulletin 2011-13: demographic profile and health care system

Gradual reductions in IMR in Visakhapatnam is seen from 2008 to 2017 and is less than MDG 2019. i.e. 28.

Table 9: Distribution of percentage of awareness in women as per age group.

Age group	Total Number of patients	No. of pts. Knows about JSSK	Percentage of awareness
Less than 19	24	2	8.3
20-29	429	48	11.2
30-39	11	7	63.64
Total	464	57	12.3

Only 12.3% of delivered women knows about JSSK Programme.

Table 10: Distribution of percentage of awareness in women as per religion.

Religion	Number of Patients	No. of pts. Knows about JSSK	Percentage of awareness
Hindu	404	50	12.4
Muslim	22	2	9.1
Others	38	5	13.2
Total	464	57	

Table 11: Distribution of percentage of awareness in women as per educational status.

Status of education	Number of cases	No. of pts. Knows about JSSK	% of awareness
Degree	5	5	100
High school education	211	37	17.5
Primary school education	169	12	7.1
No education	79	3	3.8
Total	464	57	

12.4% of Hindus and 9.1% of Muslims are aware of JSSK.

100% of women with high education, while only 3.8% of women with no education are aware of JSSK.

Table 12: Distribution of percentage of awareness in women as per residential status.

Residential Status	Number of cases	No. of pts. Knows about JSSK	Percentage of Awareness
Urban	416	49	11.8
Rural	48	8	16.7
Total	464	57	

Out of 416 urban patients only 11.8% are aware of JSSK scheme.

Table 13: Distribution of percentage of awareness in women as per socio economic status (prasad classification).

Class	Number of cases	No. of pts. Knows about JSSK	Percentage of awareness
I	-	-	-
II	61	9	14.6
III	192	30	15.6
IV	123	16	13.0
V	88	2	2.3
Total	464	57	

Only 2.3% of class V- SE status women know about JSSK.

Table 14: Distribution of percentage of awareness in women as per registration at VGH.

Booked/Un Booked Status	Number of cases	No. of pts. Knows about JSSK	Percentage of Awareness
Booked	398	55	13.8
Un Booked	66	2	3.0
Total	464	57	

13.8% of registered women are aware of JSSK, compared to 3% in non-Booked status.

Table 15: Distribution of percentage of awareness in women according to parity.

Parity	No. of cases	No. of pts. Knows about JSSK	% of Awareness
Primipara	202	5	2.5
Para 2	188	39	20.74
Para 3	41	9	22.0
Para4	29	2	6.9
Para 5 and above	4	2	50
Total	464	57	

Multiparous women are more aware of JSSK when compared to primi parous women.

Table 16: Distribution of percentage of awareness in women as per number of AN visit.

Number of AN visits	Number of cases	No. of pts. Knows about JSSK	Percentage of Awareness
No ANC	3	Nil	Nil
Less than 4	113	9	8.0
More than 4	348	48	13.8
	464	57	

Out of 57 women who aware of JSSK scheme 48 had more than 4 antenatal visit.

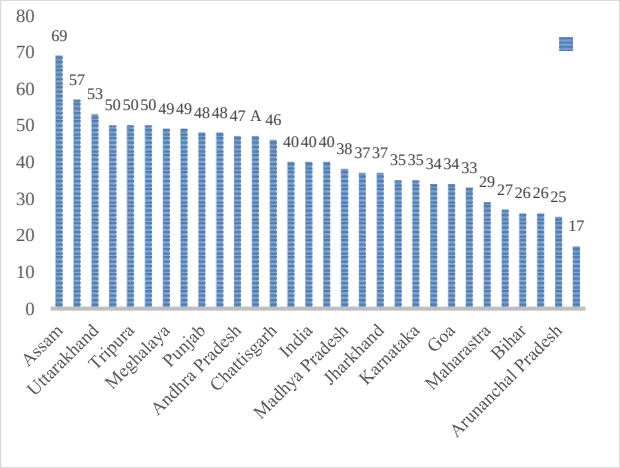

Figure 1: Level of awareness about JSY/ JSSK schemes in India.[7]

In 15 states level of health care awareness is less than that of national average. Andhra Pradesh stands with 47 in11th place where as Indian average is 40.

DISCUSSION

The maternal mortality ratio in developing countries in 2013 was 230 per 100, 000 live births versus16 per 100 000 live births in developed countries.[2] Total 289,000 women died during and following pregnancy and childbirth. About 800 women die from pregnancy- or childbirth-related complications around the world every day. Almost all of these deaths occurred in low-resource settings, and most could have been prevented. Over the years, Government of India has taken many initiatives, and the improved health indicators are a result of that. In, NFHS 3, 2005-06 only four out of every 10 pregnant women in India had institutional deliveries. This number almost doubled to 78.7% by 2013-14(RSOC). Over 80% of all deliveries were attended by skilled health workers in 2013-14.

The Janani Surkasha Yojna (JSY) scheme has brought about a surge in institutional deliveries and huge financial uptakes in most states.[9,10] Launch of Janani- Shishu Suraksha Katyakram (JSSK) in 2011 has further strengthened maternal health initiatives by entitling free deliveries and Caesarean-Sections to every pregnant woman at government health facility. This ensures nil out of pocket expenditure for the women and their families. Even the sick newborns are treated free without any expense on diagnostics, drugs, consumables, diet, transport, etc.

Antenatal care (ANC) is a pivotal factor for the safe motherhood, but its utilization varies across the immensely varied Indian society, which by and large reside in urban slums and rural areas.[11] Antenatal care can also play a critical role in preparing a woman and her family for birth by establishing confidence between the woman and her health care provider and by individualizing promotional health messages (World Health Organization, 1996).

Lack/shortage of medical and paramedical staff for the implementation of the program, ineffective monitoring and supervision. There is a need for clear policy on monitoring and supervision.[12] must be made mandatory. Transport facilities must be made available at the sub-centres and block levels. Awareness generation activities in the community need to be strengthened. There is a need for repeated training and sensitization of the Medical Officers, the Health Workers (F), and the ASHAs.[13]

Limitations of this study was done in VGH a tertiary-level hospital popularly known as GOSHA HOSPITAL, First Maternity and Children Hospital in Visakhapatnam, with more than hundred years of establishment, taking care of pregnant women and new born from generations together. This hospital mostly caters the urban population of Visakhapatnam district may not be able to represent the entire target population.

It is not a community-based study and, hence, it is not possible to elicit the reasons why a section of the people still does not prefer institutional deliveries and what their awareness regarding JSSK was. To see the impact on the MMR/IMR, a greater in-depth study at community level needs to be launched over a period of time.

CONCLUSION

JSSK a new approach to health care, assures Nil Out of Pocket Expenses in All Government Health Institutions. Every pregnant woman who wishes to avail services (Ante Natal Care, Intra Natal care and Care of sick new born till 28 days) shall be provided assured health services. The JSSK has been implemented in the State with view to encourage all pregnant women to deliver in Public Health Faculties and full fill the commitment of achieving cent percent Institutional deliveries, so as to

reduce the MMR and IMR of the State. It stipulates out that all expenses related to delivery in public institutions would be borne entirely by the government and no user charges would be levied.

JSSK is to increase institutional delivery, as this single action not only promote delivery by a skilled birth attendant, but provides an opportunity to educate and counsel women regarding breast feeding, neonatal care, immunization, and family planning methods. The underlying assumption was that birth in a facility would provide women access to skilled birth attendance (SBA) and emergency obstetric care (EOC), thus reducing maternal mortality. However, the impact can be assessed from the awareness, increase in number of institutional deliveries and reduction in MMR and IMR. However, the utilization of any scheme depends on the awareness among the beneficiaries.

The invariable existence of socio cultural difference in the community has always been a major challenge to the health care efforts made by the Government, particularly in the rural areas where illiteracy is more. The study analysis points out that the awareness in the community has to be increased. To achieve target MDG of MMR 100/2020 and IMR 28/2019 state needs to reach the unreached and motivate all needy women specially with low S.E. status towards institutional deliveries by proper campaigning to enlighten them that all maternal and child services including transport are absolutely free under JSSK scheme.

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