

A Study to Assess Impact of JSSY and MNJY Schemes in Terms of Utilisation of Ultrasound in a Tertiary Care Centre of Rajasthan

Mukesh Mittal*, Agrima Bansal**, Sanyukta Gupta***

ABSTRACT

Background

High maternal mortality in India has long been a major concern and indicator of poor health care utilisation in the country. To overcome this and to provide better health care at grass root level the government of India launched various schemes.

In 2005, 'Janani Suraksha Yojna' (JSY) a conditional cash transfer scheme was launched that improved the number of institutional deliveries.

However, it was found that the utilisation was not as desired due to out of pocket expenditures, transport and diagnostic expenditures. To overcome this, 'Janani Shishu Suraksha Yojna' was launched in 2011 that provided free services including delivery, transport, drugs, diagnostics, no cost meals. The State Government of Rajasthan launched JSSY in September 12, 2011 across 33 districts with the aim of reducing MMR and IMR

The Government of Rajasthan launched the 'MUKHYAMANTRI NISHULK JANCH YOJNA' (MNJY)- Scheme for Free Basic Diagnostic Services at Public Health Institutions in Rajasthan in April 2013 (phase 1 from April 7, 2013)

Materials And Methods

This retrospective study was conducted in Zenana Hospital, attached to SMS Hospital, a tertiary care centre in Rajasthan. Our aim was to assess impact

of the JSSY and MNJY schemes on diagnostics in terms of utilisation of ultrasound. Retrospectively data was collected after approval from institutional ethical committee from the office record and it was analysed for any significant change in number and trend.

Results

We found that a steady increase in the total number of ultrasounds was seen from 2008-2018, however, a sharp increase in the number was very evident after implementation of the scheme on the graph. The total increase is 181%. This clearly depicts the impact of successful implementation of the programme. As ultrasound requires availability of equipment, resources and specialist doctor this is a good indicator of actual impact of the schemes.

INTRODUCTION

High maternal mortality in India has long been a major concern and indicator of poor health care utilisation in the country.¹ To overcome this and to provide better health care at grass root level the government of India launched various schemes. In 2005, 'Janani Suraksha Yojna' (JSY) a conditional cash transfer scheme was launched that improved the number of institutional deliveries.² However, it was found that the utilisation was not as desired due to out of pocket expenditures, transport and diagnostic expenditures.^{2,3} To overcome this, 'Janani Shishu

*Associate Professor, **Post Graduate Student, ***Senior Resident
Department of Radiodiagnosis and Modern Imaging, SMS Medical College, Jaipur

Corresponding Author :

Dr. Agrima Bansal
Resident, Department of Radio-diagnosis and modern imaging,
SMS Medical College and Hospital, Jaipur.
Mob.: 8054949808

Suraksha Yojna' was launched in 2011 that provided free services including delivery, transport, drugs, diagnostics, no cost meals.⁴ The State Government of Rajasthan launched JSSY in September 12, 2011 across 33 districts with the aim of reducing MMR and IMR.

The Government of Rajasthan launched the 'MUKHYAMANTRI NISHULK JANCH YOJNA' (MNJY)- Scheme for Free Basic Diagnostic Services at Public Health Institutions in Rajasthan in April 2013 (phase 1 from April 7, 2013) with the aim to strengthen the existing laboratories and other diagnostic facilities create additional facilities if required, in all the public health institutions so as to provide the essential diagnostic services free of cost to all patients visiting government hospitals and To meet gaps and to provide adequately equipped quality diagnostic services as package at various levels of healthcare.⁵

Our aim was to assess impact of the JSSY and MNJY schemes on diagnostics in terms of utilisation of ultrasound. Often it seen that intended services are not able to reach the patients due to failure of equipment, unavailability of resources or skilled workforce. Ultrasound requires both equipment and specialist doctor, hence this is a good indicator of implementation of the program. The best indicator of the success of a program is assessment of the actual utilisation of the services.

This retrospective study was conducted in Zenana Hospital, attached to SMS Hospital, a tertiary care centre in Rajasthan. Post implementation of the schemes, our hospital has been catering to round the clock ultrasound both grayscale and colour doppler to all patients free of cost under the schemes. As this is a tertiary care centre catering to a large population and as ultrasound needs availability of high- end equipment and skilled doctor, this is a good indicator of improvement in healthcare services and their utilisation.

MATERIAL AND METHODS

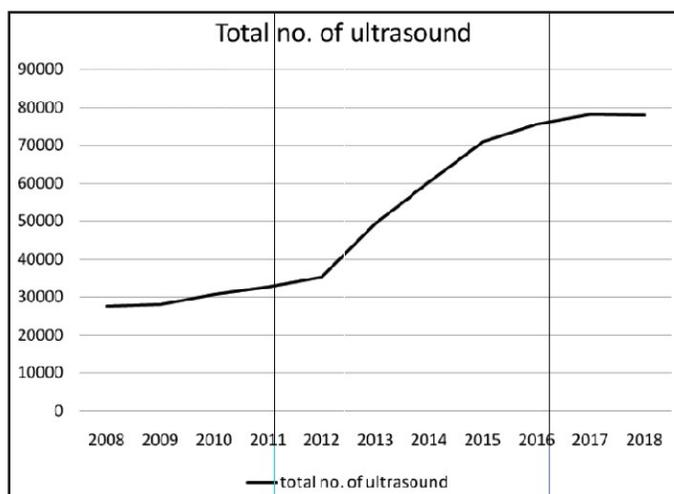
This retrospective study was conducted in Zenana Hospital, attached to SMS Hospital, a tertiary care centre in Rajasthan. Our aim was to assess impact of the JSSY and MNJY schemes on diagnostics in terms of utilisation of ultrasound. Retrospectively data was collected after approval from institutional ethical committee from the office record and it was analysed for any significant change in number and trend.

RESULTS :

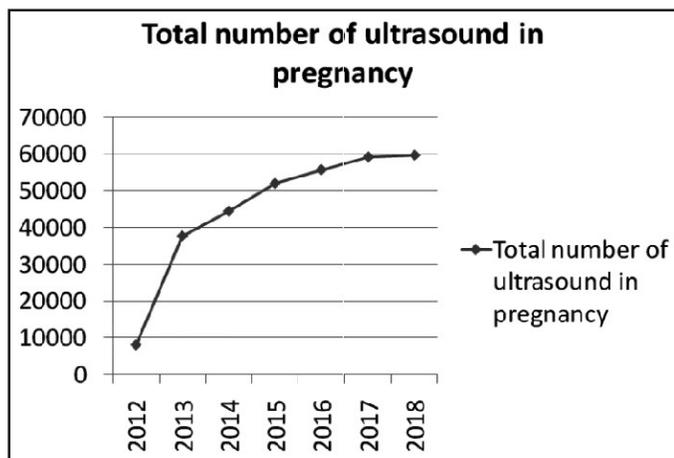
Retrospectively collected data was analysed from the office record and it revealed the following :

Graph 1 is showing a steady increase in the total number of ultrasounds done, a sharp increase in the number is very evident after implementation of the scheme on the graph. The increase is 181%. Graph 2 depicts the total number of antenatal scans done in our institute. 58.48% increase is noted from 2013 to 2018 in the number of antenatal ultrasounds being performed. Graph 3 depicts the age group of the antenatal patients coming to us for ultrasound. The highest number of pregnancies were seen in the age group 18-25 years, followed by 26-35 years of age. Graph 4 is depicting the trimester in which the antenatal scan was performed. There is an overall increase in the number of ultrasounds in all trimesters, however the third trimester remains the most scanned trimester. Graph 5 is depicting the number of children of the females coming for antenatal scanning. Highest number of females coming for antenatal scanning were primipara, followed by those having 1 previous live child, 2 previous live children and so on. Graph 6 here is depicting the number of previous live female children of the pregnant mothers. As we can see majority of the females coming for antenatal scanning had no female child before, followed by 1 previous female child and 2 female children before.

A Study to Assess Impact of JSSY and MNJY Schemes in Terms of Utilisation of Ultrasound in a Tertiary Care Centre of Rajasthan



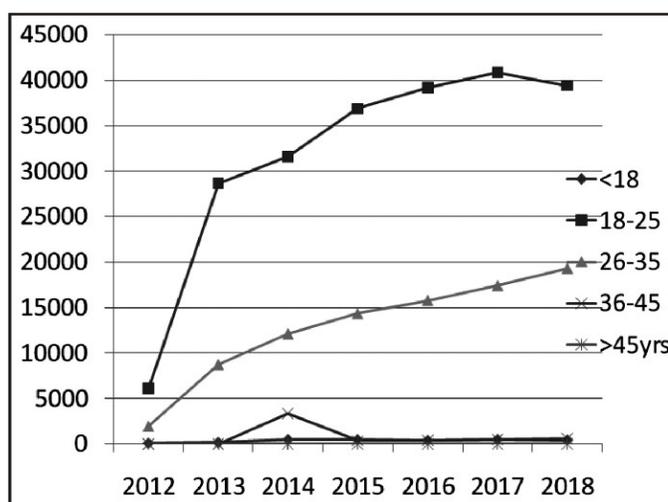
Graph 1 : Graph showing the total annual number of ultrasound done (y axis) in each year (x-axis)



Graph 2 : Graph showing the total annual number of antenatal ultrasound done (y axis) in each year (x-axis)

Table 1 : Table showing the total annual no of ultrasound done.

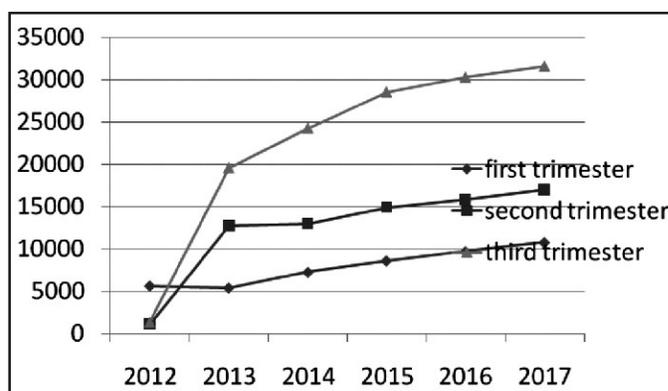
Year	Total number of ultrasound done in pregnancy
2012	8083
2013	37715
2014	44475
2015	52024
2016	55785
2017	59308
2018	59773



Graph 3 : Graph showing the total annual number of ultrasound done (y axis) in each year (x-axis) according to different age groups.

Table 2 : Showing the total annual number of ultrasound done each year according to different age groups

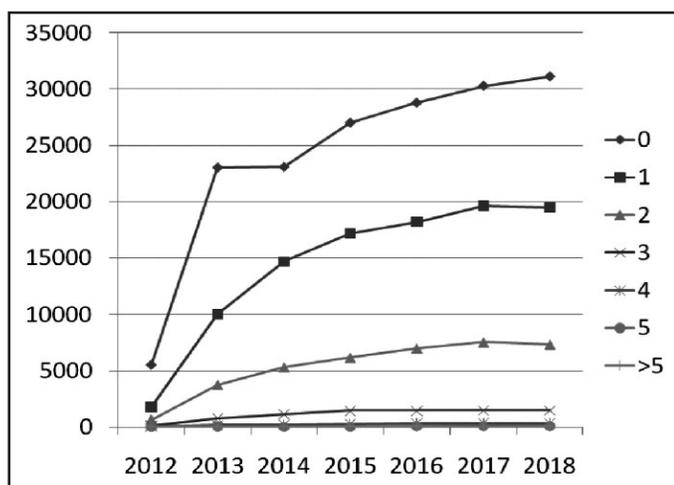
Year	<18	18-25	26-35	36-45	>45yrs
2012	44	6063	1922	53	1
2013	123	28656	8712	22	1
2014	446	31606	12091	3331	1
2015	445	36870	14332	375	2
2016	371	39161	15805	442	6
2017	466	40862	17433	538	9
2018	406	39432	19324	601	10



Graph 4 : showing the total annual number of ultrasound done (y axis) in each year (x-axis) in each trimester.

Table 3 : Table showing the total annual number of ultrasound done each year in each trimester.

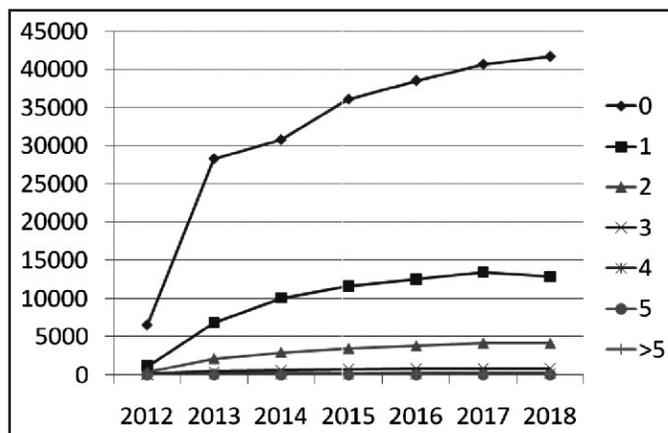
Year	First trimester	Second trimester	Third trimester
2012	5664	1085	1334
2013	5425	12722	19568
2014	7268	12956	24257
2015	8623	14887	28514
2016	9723	15792	30270
2017	10782	16968	31558
2018	10564	17194	32015



Graph 5 : Showing the total number of children of the pregnant lady coming for ultrasound and total annual no of ultrasound in each group (y axis) in each year (x-axis)

Table 4 : Table showing the total number of children of the pregnant lady coming for ultrasound and total annual no of ultrasound in each group

Year	0	1	2	3	4	5	>5
2012	5505	1751	648	141	30	6	2
2013	23029	9995	3719	761	159	40	12
2014	23084	14678	5307	1140	217	38	11
2015	27009	17150	6145	1424	243	38	15
2016	28789	18203	6967	1430	310	72	14
2017	30284	19631	7524	1444	341	78	6
2018	31123	19458	7326	1456	324	63	23



Graph 6 : showing the total number of previous live female children of the pregnant mothers coming for ultrasound and total annual no of ultrasound in each group (y axis) in each year (x-axis)

Table 5 : showing the total number of previous live female children of the pregnant mothers coming for ultrasound and total annual no of ultrasound in each group

Year	0	1	2	3	4	5	>5
2012	6485	1094	401	82	17	2	2
2013	28274	6795	2107	428	79	23	9
2014	30770	9990	2941	635	112	23	4
2015	36078	11563	3455	770	131	15	12
2016	38521	12453	3779	805	174	44	9
2017	40669	13413	4163	819	197	44	3
2018	41680	12851	4143	850	198	34	17

DISCUSSION

Several studies have been conducted to assess impact of JSSY and its implementation, however these studies have been in terms of institutional deliveries.

Kakkad et al in 2014 studied retrospectively the effect of JSSK scheme on work load, availability of expensive treatment modality and effect on outcome by comparing one year time period between SEP-2011 to AUG 2012 (pre-JSSK year) and SEP-2012 to AUG-2013 (post-JSSK) and found that After JSSK scheme institutional deliveries increased by 20.32%

and registered deliveries by 20.77%. NICU admission rate was increased by 21.96% with a significant increase in preterm admission by 86.89%. They concluded that JSSK is successful in raising the number of institutional deliveries, booked obstetric practice and improved access to level III NICU care resulting in a significant decrease in preterm mortality rates.⁶

Mondal J et al in 2015, assessed the awareness of recently delivered women regarding JSSK in a cross sectional study on 210 women who delivered babies in bankura, west Bengal and found that Gaps existed in the awareness of beneficiaries regarding entitlement under JSSK. Drugs and transport were two major causes of out-of-pocket expenditure in public health facilities. They also estimated the cost of institutional delivery and found Median cost of normal delivery in a private facility (INR 2750.0) was 3.6 times of that in a government facility (INR 765.0). Median direct cost of caesarean section (CS) in a government facility (INR 1100.0) was nearly one-fifteenth of that in a private facility (INR 16,350.0)⁷

U Mahala et al in 2017 studied the impact of the Janani Shishu Suraksha Yojana (JSSY) initiative on maternal health in terms of the number of prenatal checkup registrations, institutional deliveries, and maternal deaths retrospectively in a tertiary care centre in Rajasthan and found increase in the mean number of prenatal outpatient department registrations and institutional deliveries following the implementation of JSSY. They concluded that JSSY appeared to be an effective program in improving maternal health; use of prenatal care and institutional deliveries increased following its implementation.⁸

This study assesses impact of implementation of JSSY and MNJY on improving diagnostics especially ultrasound. As ultrasound needs availability of high end equipment and skilled doctor, this is a good indicator of improvement in healthcare services and their utilisation.

Graph 1 is showing a steady increase in the total number of ultrasounds done, a sharp increase in the number is very evident after implementation of the scheme on the graph. The increase is 181%. This

clearly depicts the impact of successful implementation of the programme. The best indicator of the success of a program is assessment of the actual utilisation of the services. Many a times, intended services are not able to reach the patients due to failure of equipment, unavailability of resources or skilled workforce. Ultrasound requires both equipment and specialist doctor, hence this is a good indicator of implementation of the program.

Graph 2 depicts the total number of antenatal scans done in our institute. 58.48% increase is noted from 2013 to 2018 in the number of antenatal ultrasounds being performed. Ultrasound is one of the important antenatal investigations, as it identifies high risk pregnancies like multifetal gestation, molar pregnancy, pre-eclampsia etc and potential complications like haemorrhage due to placenta previa, succenturiate lobe etc. Better and not only easily available but also free of cost diagnostics play an important role in reducing the maternal mortality of the country. As the schemes aimed at providing better services, this is an indirect indicator of good implementation of the scheme.

Graph 3 here depicts the age group of the antenatal patients coming to us for ultrasound. The highest number of pregnancies were seen in the age group 18-25 years, followed by 26-35 years of age. There is a steady increase in the number of pregnancies in both these age groups over the years however the 18-25 years age group remains the highest in number. Although there is no change in the overall trend but number of <18 year pregnancies have increased slightly which points towards a better awareness and implementation of health programmes.

Graph 4 is depicting the trimester in which the antenatal scan was performed. There is an overall increase in the number of ultrasounds in all trimesters, however the third trimester remains the most scanned trimester. This indicates females coming to the tertiary centre mostly near term. First and second trimester are scanned lesser number of times than third trimester, however there is a definite steady overall increase.

Graph 5 is depicting the number of children of the females coming for antenatal scanning. Highest number of females coming for antenatal scanning were primipara, followed by those having 1 previous live child, 2 previous live children and so on. Over the years we can see that there is an overall increase in the number of scans, but the trend remains the same.

Graph 6 here is depicting the number of previous live female children of the pregnant mothers. As we can see majority of the females coming for antenatal scanning had no female child before, followed by 1 previous female child and 2 female children before. Overall increase is noted in number of living female children, however no significant change in trend is noted in 5 and more than 5 female children before group which remains low.

CONCLUSION

There is an increase of 181% in the total number of ultrasounds in our institute in 10 years with a sharp increase after implementation of scheme. In the number of antenatal ultrasounds since 2013 we have noted an increase of 58.48%. With this we can conclude that the schemes have been successful at their aim of providing services, especially diagnostics free of cost and 24 hour to the patients.

REFERENCES

1. Hill K, et al. "Estimates of maternal mortality worldwide between 1990 and 2005: an assessment of available data." *Lancet*, 2007, 370(9595):1311-1319.
2. Santhya, K.G., Shireen J. Jejeebhoy, Rajib Acharya, and A.J. Francis Xavier. 2011. "Effects of the Janani Suraksha Yojana on maternal and newborn care practices: Women's experiences in Rajasthan." New Delhi: Population Council.
3. Sahu KS, Bharati B. "Out-of-Pocket health expenditure and sources of financing for delivery, postpartum, and neonatal health in urban slums of Bhubaneswar, Odisha, India." *Indian J Public Health* 2017;61:67-73
4. National Rural Health Mission. "Guidelines for Janani-Shishu Suraksha Karyakram (JSSK). New Delhi: Government of India, Ministry of Health and Family Welfare, Maternal Health Division; 2011. p. 1-40.
5. <http://www.sihfwrajasthan.com/ppts/full/MNJY.pdf>
6. Khyati M Kakkad et al "Effect of 'Janani Shishu Suraksha Karyakram' – a government health beneficiary scheme - on admission rate and clinical outcome in NICU in a tertiary care hospital" *National Journal of Community Medicine*, Volume 5 | Issue 1 | Jan – Mar 2014 page 118-121
7. J Mondal et al "Does Janani Shishu Suraksha Karyakram ensure costfree institutional delivery? A cross-sectional study in rural Bankura of West Bengal, India" *Indian J Public Health* 2015;59:279-85.
8. Urmila Mahala et al, maternal health outcomes following the implementation of Janani Shishu Suraksha Yojana (JSSY) at a tertiary healthcare center in Rajasthan doi: 10.1002/ijgo.12316