

Women's Health, Family Planning and Accessibility to Health Care in Rural Madhya Pradesh in India: An Insight into the NRHM Program Indicators, Spatial Disparity and Health Planning

Protap Mukherjee ¹
Lopamudra Ray Saraswati ²

Introduction

National Rural Health Mission: Vision and Goals

The National Rural Health Mission (2005-12) seeks to provide effective healthcare to rural population throughout the country with special focus on 18 states, which have weak public health indicators and/or weak infrastructure. These 18 States are Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Jammu & Kashmir, Manipur, Mizoram, Meghalaya, Madhya Pradesh, Nagaland, Orissa, Rajasthan, Sikkim, Tripura, Uttaranchal and Uttar Pradesh. The Mission is an articulation of the commitment of the Government to raise public spending on Health from 0.9% of GDP to 2-3% of GDP. It has as its key components provision of a female health activist in each village; a village health plan prepared through a local team headed by the Health & Sanitation Committee of the Panchayat; strengthening of the rural hospital for effective curative care and made measurable and accountable to the community through Indian Public Health Standards (IPHS); and integration of vertical Health & Family Welfare Programmes and Funds for optimal utilization of funds and infrastructure and strengthening delivery of primary healthcare. It seeks to revitalize local health traditions and mainstream AYUSH into the public health system. It aims at effective integration of health concerns with determinants of health like sanitation & hygiene, nutrition, and safe drinking water through a District Plan for Health. It seeks decentralization of programmes for district management of health. It seeks to address the inter-State and inter-district disparities, especially among the 18 high focus States. It seeks to improve access of rural people, especially poor women and children, to equitable, affordable, accountable and effective primary healthcare.

The Goals of the mission are: i) Reduction in Infant Mortality Rate (IMR) and Maternal Mortality Ratio (MMR), ii) Universal access to public health services such as Women's health, child health, water, sanitation & hygiene, immunization, and Nutrition, iii) Prevention and control of communicable and non-communicable diseases, including locally endemic diseases iv) Access to integrated comprehensive primary healthcare v) Population stabilization, gender and demographic balance, vi) Revitalize local health traditions and mainstream AYUSH and vii) Promotion of healthy life styles

¹ Research Associate, National Population Stabilisation Fund, New Delhi, India E-mail: pmukherjee25@gmail.com and ² Research Associate, Invest India Market Solutions Private Limited, Noida, India, lopamudrars@gmail.com.

Madhya Pradesh Scenarios

From the point of view of per capita income, literacy, urbanization, infrastructure facilities and other development indicators, Madhya Pradesh belongs to the category of less developed states of the country. Administratively, Madhya Pradesh has 61 districts with considerable variation between districts on almost all demographic, social, and economic indicators. Madhya Pradesh is a State with a considerable degree of regional diversity in terrain, culture, socio-economic conditions and status of women. In terms of Human Development Index (HDI), the state lags behind the country as a whole, with an index value of 37 out of 100 compared to 45 for the country (PPM, Govt. of MP, 2000).

The current health status of mothers and children in the state needs considerable improvement. The infant mortality rate in 1997 has been estimated at 94 infant deaths per 1,000 live births, one of the highest rates in the country. The per cent of children aged 12-23 months who have received any vaccine increased from 62 per cent in 1992-93 to 80 per cent in 1998-99 in rural areas and from 80 per cent to 94 per cent in urban areas. While immunization services have successfully reached more children than six years ago, the proportion of children receiving all required doses of all vaccines has not shown appreciable improvement. The proportion of pregnant women that obtained antenatal care (ANC) services increased from 52 per cent in 1992-93 to 62 per cent in 1998-99. Only 22 per cent of deliveries in Madhya Pradesh in 1998-99 were institutional deliveries; of these, two-thirds occurred in private health institutions. Trained personnel assisted less than one-third of total deliveries. Skilled personnel such as doctors, midwives and trained dais attended an additional 20 per cent of births at home. Over two-thirds of births in rural areas and about one-seventh of births in urban areas occur at home attended by traditional birth attendants, who are often untrained and work under unhygienic conditions. The maternal mortality rate in the state is the highest in the country with 498 mothers dying due to maternal causes per 100,000 live births (PPM, Govt. of MP, 2000).

Madhya Pradesh ranks among the lowest in the country in terms of nearly all health related indicators. There is a need to bridge the gap between the State and the national averages on priority basis. In order to provide health care to all villages, there is a need to strengthen the health infrastructure in rural, tribal and slum areas. It is proposed to bring down the Infant Mortality rate (IMR) from 91 per thousand live births to 45, reduce Maternal Mortality Rate (MMR) to 2 per thousand live birth, reduce the total fertility rate from 4 to 3 and reduce the child mortality rate to 90 during the plan period. Specific strategies would be evolved in the area where these are very high as compared to the state average.

National Rural Health Mission is being seen as a vital link to government programmes on reducing maternal mortality. They will address the health needs of rural population particularly among the vulnerable sections and guide women to access the facilities for ante-natal care, institutional delivery, post-natal care and counselling on nutrition and family planning services.

Objective

In this paper, the focus is concentrated in some of the indicators of NRHM. The specific objectives are:

1. To study the level of maternal health in rural Madhya Pradesh
2. To examine the effects of accessibility on maternal health care and family planning among rural women in this state

3. To identify the spatial pattern of disparity in maternal health care and services, and to find out the more vulnerable districts in the state.

Data

For the present paper, the source of data is DLHS-RCH survey, Round-II, under Reproductive and Child Health Project. The survey was conducted in two phases in 2002 and 2004. DLHS-RCH collected information on various indicators related to maternal and child health. For the present study Household file, Woman file and Village file have been taken. Out of total sample of the Madhya Pradesh, only rural women have been selected which is accounted for 69 % of the total sampled population.

Methodology

For the present study bi-variate and multi variate analyses have been carried out by a set of different background variables. Simple percentages have been calculated to know the basic composition and characteristics of rural women in Madhya Pradesh as revealed by DLHS-RCH-II. A composite index (Accessibility Index) based on five indicators has been developed to represent the overall accessibility of rural women in terms of distance. The following variables have been taken for calculating Accessibility Index: i) Distance to BUS stand (in KM), ii) Distance to Railway station (in KM), iii) Distance of Sub centre from village, iv) Distance of PHC from village and v) Distance of CHC/RH from village. On the basis of the calculated values Accessibility Index has been divided into three categories: i) Good (5 to 8 km), ii) Moderate (8 to 12 km), and iii) Poor (more than 12 km).

Composite index like Full ANC and Safe delivery also calculated for the rural women. Four dependent variables have been selected for the multi-variate analyses which are: full ANC, Safe delivery, aware of any modern family planning method and currently using any modern family planning method. To study the effect of different socio-economic and demographic predictors on these variables, logistic regression analyses were carried out. GIS based maps have been prepared to extract the better spatial interpretation.

Results and Discussions

Table 1: Characteristics of Rural Women in Madhya Pradesh

From this table it is clear that rural Madhya Pradesh basically consists of married women of 20 to 24 years and 25 to 29 years of age groups (23 and 21 percent, respectively). The Hinduism (97 percent) has found to the main religion among the women in rural Madhya Pradesh. Among castes, other backward class (43 percent) shows the higher percentage. Findings also reveal that majority of women (41 percent) have marital duration more than 15 years and above. More than two-fifth (44 percent) of the rural women have two to three children. Finding shows that nearly three-fourth (71 percent) of rural women is illiterate. Even most of the husbands (38 percent) are illiterate. Sixty-nine percent women in rural Madhya Pradesh belongs to low household's standard of living. Only 44 percent women are currently using any modern family planning method. The results also reveal that 34 percent rural women have access to the availability of any public health facility in the village and only 15 percent of the women have good accessibility to any public health facility.

Table 2: Levels of Obstetric Care among Rural Women in Madhya Pradesh

Any ANC: It has been found from the bi-variate analyses that the level of any ANC is higher among young currently married women, i.e. women of 15-19 years of age (54 percent) and Muslim women (68 percent). Women from other caste (57 percent) have the highest percentage of any ANC. Women who have marital duration of less than 5 years and also have less than 2 children are more prone to take any ANC. Women and Husband's education and household standard of living index is positively associated with the any ANC. Accessibility also plays a positive role in obstetric care.

Full ANC: though the level of full ANC is very lower among the rural women in Madhya Pradesh, it is to be found higher among women of 20-24 years of age groups. The women belong to other religions and other castes are more prone to take full ANC. Like any ANC, full ANC also shows the same association regarding marital duration, education of women and husbands, SLI and levels of accessibility and availability of health facilities in the village.

Safe Delivery: The results regarding safe delivery are also same like full ANC. It has positive association with women and husband's education, household's standard of living, knowledge of modern method of family planning, accessibility and availability of health facilities and negatively associated with women's age, marital duration and total children ever born. Safe delivery is found to be higher among Muslim women and women belong to other castes.

Table 3: Knowledge and Use of Modern Method of Family Planning among Rural Women in Madhya Pradesh

Knowledge of Modern Family Planning Method: The Bivariate analyses show that on an average; more than 95 percent rural women have knowledge about modern method of family planning. This knowledge is relatively higher among women of 35-39 years of age (99 percent), women belonging to other castes (98 percent), women who married before 15 years and above (99 percent), women having more than three children (99 percent). Findings show that this knowledge also positively related with women and husband's education, household's standard of living, obstetric care and levels of accessibility and availability of health facilities.

Use of Modern Family Planning Method: The study reveals that use of modern family planning method is steadily increasing with the increase in age and it reaches nearly 70 percent in the age group 40-44 years. Women belong to other religions and other castes are found to use more this method in comparison to their other counterparts. Women and husband's education though do not show strong relationship with the use of current methods. Interestingly, it is found higher among illiterate women and husbands. Obstetric care, levels of accessibility and availability of health facilities have strong influences on the use of current family planning methods.

Table 4 and Table 5, Map-1 and Map-2: Variation in the Spatial Pattern of the Different Indicators of Maternal Health Care among Rural Women in Madhya Pradesh

There is a wide regional disparity in different maternal health and health care indicators in rural Madhya Pradesh. It has been found that the percentage of rural women having any ANC is lowest and highest respectively in Sidhi and Balaghat districts. Full ANC is lower among women of Shivpuri (0.4 percent) and it is highest in district Seoni. Map-1 shows that south-

eastern region of the state show higher percentage of full ANC. The percentage of women having safe delivery is found to be lowest in Sidhi district (15 percent) where the highest safe delivery is found in Balaghat district (62 percent). It is observed from the Map-2 that north-eastern region of the state is the poor performer regarding safe delivery.

There is not much spatial variation regarding knowledge of modern family planning method as the average knowledge of the rural women for modern family planning method is 98 percent. Though the women from Sheopur have relatively less knowledge about it. The knowledge of family planning is better among women in districts like Dhar, Jabalpur, Katni, Neemuch etc.

Table 6: Results of Multi-variate Analyses

Full ANC: The calculated odds ratio show that women belonging to the age group 20-24 years are two times more likely to take full ANC than the women belonging to 15-19 years of age. This likelihood of taking full ANC is decreasing sharply after the age 25-29. The Hindu women and women belonging to other castes are more prone to take full ANC. The odds ratio for women education show that as the education is increasing, the likelihood of getting full ANC is also increasing. The women belonging to high standard of living are 1.6 times more prone to take full ANC than women from poor standard of living. It has been found that women with moderate accessibility have the more chance to get full ANC.

Safe Delivery: The odds ratios for the women's age show a negative relation with the probability of going for safe delivery in rural Madhya Pradesh. Muslim women are 1.7 times more willing to go for safe delivery than Hindu women. There are significant associations between marital duration, children ever born and women's education with safe delivery. Though the association is negative in case of marital duration, it is positively related with children ever born and women's education. The women from richer families have more chance for safe delivery and those women who have full ANC, are 2.3 times more likely to go for safe delivery. The findings show that women with good accessibility to public health facilities are more prone to have safe delivery in comparison to women with poor accessibility.

Currently Using Any Modern Family Planning Method: The findings reveal that women's age is significantly associated with the currently use of modern family planning methods. The elder women are more likely to use modern methods in comparison to younger married women. Muslim women are less likely and women belonging to other religions are more like to use modern methods than Hindu women. Among all the caste/tribe categories, women from scheduled tribes are less prone to use modern methods. Marital duration and children ever born are also significantly associated with the use of modern methods. It is husband's education which shows higher likelihood to use modern method than women's education. Again poor women are less prone to use this method. Good accessibility increases the likelihood of using modern methods among the rural women in Madhya Pradesh.

Table 7 and Map-3 to Map-5: Variation in the Spatial Pattern of the Accessibility of Rural Women in Madhya Pradesh

Table 7 and Map-3 show that there is a wide disparity regarding spatial pattern of accessibility of rural women to any public health facility. The lowest accessibility is observed in Vidisha (20 percent) where as the highest accessibility is enjoyed by the women of Rewa.

The Map-5 shows that the more than 75 percent of women living in the eastern region of the state have accessibility to any public health facility. Regarding availability of any public health facility in the village, the performance of the southern part of the state is well as more than 40 percent of women living in this area are avail to any public health facility. The highest and least percentage of women enjoying health facility in the village is respectively from districts Datia and Shivpuri. Districts like Barwani and Damoh are the lowest performer regarding good accessibility (i.e. accessibility of any public health facility and public infrastructure is between 5 to 8 km). Good accessibility is more enjoyed by women in Datia district. Only one district in south-eastern part and two districts of northern part of the state show better good accessibility. It is observed from the map and table that most of the parts of the rural Madhya Pradesh have poor accessibility.

Conclusion

Majority of the rural women in Madhya Pradesh belongs to poor family. Their level of education is also poor. The level of basic obstetric care and knowledge of family planning is lower at the rural level. And this situation becomes worse with the wide regional disparity in health care indicators. Full ANC and safe delivery relates with age-groups, place of residence, education of women and standard of living index. Knowledge of modern method of family planning and its use also depends on these variables. NRHM seeks to improve accessibility to the public health facility among rural women. Findings justify this fact as the results show that good accessibility and availability of health facility are the good predictors for safe delivery and full ANC. Again full ANC and safe delivery may help women to learn more about modern family planning method and encourage them to use it. Apart from obstetric care, there is a strong need to give emphasis on the accessibility as it is directly related with the other associated factors. The findings give highlights on regional disparity in some of the indicators of NRHM and points out the vulnerable districts in terms of the performance. This identification may be helpful in selection of deprived areas and disadvantaged groups and also for policy implication.

References:

- Arora, Surg V Adm Punita. 2005. "Maternal Mortality-Indian Scenario." *MJAPI* 61: 214-215.
- Bhat, P. N. Mari. 2002. "Maternal Mortality in India: An Update." *Studies in Family Planning* 33,3: 227-236.
- Bhatia, Jagdish C. and John Cleland. 1995. "Determinants of Maternal Care in a Region of South India." *Health Transition Review* 5, 127-142.
- Chandhiok, Nomita et al. 2006. "Determinants of antenatal care utilisation in rural areas of India : A cross sectional study from 28 districts." *Journal of Gyneocology India* 56,1: 47-52.
- Chaurasia, Alok Ranjan. 2006: *Obstetric Risk and Obstetric Care in Central India*, Institute of Economic Growth, New Delhi
- Fathalla, Mahmoud. 1987. "The Long Road to Maternal Death." *People*, volume14,number3. Government of Madhya Pradesh, *Madhya Pradesh - Summary of Salient Features of Tenth Plan (2002-2007)*
- Luthra, Rita. *Safe motherhood: a matter of human rights and social justice*.
- Maine, Deborah. 1996. "Why did Maternal Mortality Decline in Maltab?" *Studies in Family Planning* 27,4: 179-187.
- Maternal and Neonatal Health. 2004. "Focused Antenatal Care: Planning and Providing Care during Pregnancy." Programme Brief , March.
- McCarthy and Deborah Maine. 1992. "A Framework for Analyzing the Determinants of Maternal Mortality." *Studies in Family Planning* 23,1: 23-33.
- Ministry of Health and Family Welfare: *National Rural Health Mission: Mission Document (2005-2012)*, Govt. of India
- RCH. 2000. "India Summary Report." IIPS, MoHFW, March.
- SID-SAN and Sirkat Gals. 2005. Regional Conference on Maternal Health and Well-being in South Asia: Strategies for Meeting the Millennium Development Goals, 3-5 February.
- Stewart, Kathryn M., Cynthia K. Stanton, Mario Festin and Nora Jacobson. 1996. "Issues in Measuring Maternal Morbidity: Lessons from the Philippines Safe Motherhood Survey Project." *Studies in Family Planning* 27,1:29-35.
- UNFPA. 2004. "Indicators for Reducing Maternal Mortality." Tool Number 6: Programme Indicators, March.
- World Health Organisation (WHO). 2004.*Beyond the Numbers: Reviewing the maternal deaths and complications to make pregnancy safer*. Geneva:WHO.

Table 1: Characteristics of Rural Women in Madhya Pradesh

Variables	Percentage of Rural Women
Women's Age	
15-19	10.9
20-24	23.4
25-29	20.7
30-34	18.5
35-39	15.0
40-44	11.6
Religion	
Hindu	96.5
Muslim	2.5
Others	0.9
Caste	
Scheduled Caste	16.4
Scheduled Tribe	23.8
Other Backward Class	42.5
Others	17.4
Marital Duration	
Less than 5 Years	19.4
5 to 9 Years	20.4
10 to 14 Years	19.7
15 Years and above	40.5
Children ever Born	
Less than 2	27.4
2 to 3 Children	44.2
More than 3	28.4
Women's Education	
Non-literate	70.7
Primary	4.8
Middle	18.9
Secondary	3.2
Higher Secondary and above	2.4
Husbands' Education	
Non-literate	37.5
Primary	7.2
Middle	31.4
Secondary	11.4
Higher Secondary and above	12.5
Households' Standard of Living Index	
Low	69.2
Medium	23.5
High	7.3
Knowledge of Any Modern Family Planning Method	
No	2.4
Yes	97.6
Currently Using Any Modern Family Planning Method	
No	55.9
Yes	44.1
Accessibility Throughout the Year	
No	30.3
Yes	69.7
Availability of Public Health Facility in the Village	
No	65.6
Yes	34.4
Accessibility Index	
Good	14.9
Moderate	61.0
Poor	24.2
Total Women	26186

Table 2: Percent Distribution of Obstetric Care by Different Background Variables

VARIABLES	Any ANC	Full ANC	Safe Delivery
Women's Age			
15-19	53.8	2.6	44.5
20-24	51.1	3.7	40.6
25-29	47.2	3.4	36.3
30-34	40.3	2.3	30.6
35-39	35.8	1.8	27.9
40-44	29.4	1.6	25.3
Religion			
Hindu	46.5	3.2	36.7
Muslim	68.3	2.1	52.7
Others	68.0	4.1	49.5
Caste			
Scheduled Caste	45.7	2.5	32.9
Scheduled Tribe	37.7	2.6	27.4
Other Backward Class	50.9	3.6	41.0
Others	56.7	3.7	49.9
Marital Duration			
Less than 5 Years	59.4	4.4	50.3
5 to 9 Years	48.8	3.3	37.7
10 to 14 Years	42.9	2.8	32.8
15 Years and above	35.7	1.9	26.7
Children ever Born			
Less than 2	56.0	4.4	48.1
2 to 3 Children	47.4	3.0	36.9
More than 3	36.6	2.1	26.7
Women's Education			
Non-literate	39.1	1.8	30.2
Primary	61.0	4.1	44.4
Middle	65.3	5.6	52.4
Secondary	75.4	7.8	62.8
Higher Secondary and above	85.2	17.5	78.2
Husbands' Education			
Non-literate	35.1	2.0	26.8
Primary	45.9	1.1	31.9
Middle	51.8	3.5	41.3
Secondary	57.5	3.6	48.0
Higher Secondary and above	68.6	7.2	55.2
Households' Standard of Living Index			
Low	40.9	2.3	30.1
Medium	60.9	4.8	51.7
High	82.2	8.7	77.9
Knowledge of Any Modern Family Planning Method			
No	29.7	0.6	24.0
Yes	47.8	3.2	37.6
Currently Using Any Modern Family Planning Method			
No	44.7	2.7	35.0
Yes	54.8	4.5	43.7
Accessibility of Any Public Health Facility throughout the Year			
No	43.9	2.8	35.8
Yes	48.8	3.3	37.8
Availability of Public Health Facility in the Village			
No	43.3	2.7	34.3
Yes	55.3	4.1	43.2
Accessibility Index			
Good	48.3	3.2	41.1
Moderate	44.7	2.9	35.4
Poor	36.5	2.0	28.5
Total Rural Women	11709	11709	11709

Table 3: Percent distribution of awareness and use of modern family planning method by different background variables

VARIABLES	Knowledge of Any Modern Family Planning Method	Currently Using Any Modern Family Planning Method
Women's Age		
15-19	94.9	3.7
20-24	96.8	18.4
25-29	97.9	46.8
30-34	98.2	62.1
35-39	98.7	68.4
40-44	98.3	69.0
Religion		
Hindu	97.6	44.1
Muslim	97.7	43.1
Others	96.7	52.7
Caste		
Scheduled Caste	96.7	39.7
Scheduled Tribe	97.4	36.5
Other Backward Class	97.6	48.0
Others	98.4	49.1
Marital Duration		
Less than 5 Years	95.4	7.7
5 to 9 Years	97.2	26.3
10 to 14 Years	97.9	51.1
15 Years and above	98.6	67.1
Children ever Born		
Less than 2	95.3	7.1
2 to 3 Children	98.3	56.6
More than 3	98.5	60.4
Women's Education		
Non-literate	97.2	44.3
Primary	98.6	51.1
Middle	98.3	43.1
Secondary	98.3	34.0
Higher Secondary and above	99.8	47.0
Husbands' Education		
Non-literate	97.0	39.8
Primary	98.7	53.0
Middle	97.7	47.6
Secondary	97.4	37.5
Higher Secondary and above	98.1	49.1
Households' Standard of Living Index		
Low	97.0	40.0
Medium	98.7	51.4
High	99.3	59.2
Full ANC		
No	25.1	25.1
Yes	36.3	36.3
Safe Delivery		
No	97.4	22.8
Yes	98.1	29.8
Accessibility of Any Public Health Facility throughout the Year		
No	98.1	42.8
Yes	97.3	46.7
Availability of Public Health Facility in the Village		
No	97.5	42.7
Yes	97.6	44.7
Accessibility Index		
Good	97.4	45.9
Moderate	97.5	43.5
Poor	96.9	38.2
Total Rural Women	26186	26186

Table 4: Spatial Pattern of Percentage of Rural Women Suffering From Obstetric Morbidity and Has Access to Obstetric Care

District	Any Pregnancy Complication	Any Delivery Complication	Any Post Delivery Complication	Any ANC	Full ANC	Safe Delivery
Balaghat	31.7	24.0	33.5	81.0	10.9	61.5
Barwani	43.3	59.7	46.1	45.5	4.2	26.7
Betul	31.6	13.7	21.3	50.6	6.5	42.6
Bhind	28.1	17.7	25.0	21.9	1.4	25.3
Bhopal	34.3	9.8	47.1	38.2	4.9	30.4
Chhatarpur	21.3	15.6	27.6	22.6	1.0	17.6
Chhindwara	30.5	25.8	31.6	41.4	4.3	28.5
Damoh	23.9	9.7	27.1	47.4	1.6	31.6
Datia	21.0	10.2	24.4	31.7	2.9	39.5
Dewas	43.7	61.4	47.8	63.1	1.7	56.9
Dhar	28.8	56.2	35.4	52.6	4.3	36.0
Dindori	45.1	19.4	51.9	59.3	2.6	36.9
East Nimar	31.2	59.9	44.6	55.4	4.8	52.4
Guna	46.5	67.5	51.5	26.4	2.8	35.9
Gwalior	21.9	15.6	13.8	36.3	1.3	30.0
Harda	37.7	25.8	38.1	59.5	4.4	57.9
Hoshangabad	41.1	26.7	48.0	62.4	4.5	57.9
Indore	39.6	67.0	48.1	69.8	9.4	79.2
Jabalpur	28.2	16.9	40.8	75.4	4.9	38.0
Jhabua	38.1	54.3	33.9	37.8	1.3	24.5
Katni	28.6	17.8	30.5	59.1	0.7	25.7
Mandla	35.5	22.6	37.6	59.0	1.3	34.2
Mandsaur	42.3	64.1	40.5	65.0	4.1	54.1
Morena	23.1	12.5	20.1	33.0	2.2	41.8
Narsimhapur	26.1	25.0	34.1	63.4	2.2	47.1
Neemuch	54.1	59.0	44.9	69.8	6.8	50.7
Panna	22.2	13.6	21.9	33.7	0.7	25.8
Raisen	37.7	27.4	60.1	34.6	1.9	30.2
Rajgarh	49.4	67.3	40.5	44.6	2.6	42.0
Ratlam	58.2	70.5	45.0	65.3	3.2	42.6
Rewa	37.4	26.9	40.5	60.8	4.0	29.5
Sagar	17.2	9.4	16.2	36.4	3.0	20.9
Satna	25.8	14.7	25.4	31.7	0.8	25.8
Sehore	51.0	70.0	59.7	62.3	1.3	56.0
Seoni	31.1	22.6	38.5	71.6	14.4	53.7
Shahdol	35.5	22.0	36.7	49.8	4.1	23.3
Shajapur	46.5	56.4	34.6	63.0	2.1	55.6
Sheopur	21.2	11.7	18.9	24.8	1.8	32.9
Shivpuri	34.2	57.5	34.2	35.7	0.4	28.6
Sidhi	24.0	5.8	18.9	20.6	0.6	14.5
Tikamgarh	27.8	16.7	28.1	30.0	1.5	24.7
Ujjain	38.6	60.7	44.2	69.5	3.2	39.3
Umaria	49.2	23.0	47.9	46.9	4.3	44.9
Vidisha	43.7	64.1	56.6	35.6	1.2	32.0
West Nimar	45.1	55.3	52.3	42.5	4.1	41.7
Rural MP	35.1	35.6	37.1	47.3	3.5	37.2

Table 5: Spatial Pattern of Percentage of Rural Women Having Awareness of Reproductive Morbidity and Modern Family Planning and Its Uses

District	Ever Heard of RTI/STI	Ever Heard of HIV/AIDS	Knowledge of Ane Modern Family Planning Method	Currently Using Any Modern Family Planning Method
Balaghat	4.4	13.7	98.2	48.9
Barwani	33.9	18.4	100.0	47.6
Betul	7.0	10.9	99.5	45.2
Bhind	5.8	12.6	99.3	35.2
Bhopal	9.2	28.8	97.3	39.1
Chhatarpur	2.5	6.5	91.9	27.8
Chhindwara	23.0	20.9	98.2	48.7
Damoh	13.0	29.9	98.9	53.1
Datia	9.2	18.1	98.4	46.4
Dewas	15.8	30.4	99.7	52.1
Dhar	14.1	20.2	100.0	48.2
Dindori	11.1	8.2	98.8	43.4
East Nimar	14.1	25.5	99.1	52.8
Guna	15.9	13.9	96.6	37.3
Gwalior	2.0	8.3	98.7	36.6
Harda	28.9	31.0	98.2	55.2
Hoshangabad	30.9	38.2	99.1	55.3
Indore	20.1	54.8	97.5	62.2
Jabalpur	25.6	37.1	100.0	52.2
Jhabua	8.2	5.5	98.1	26.5
Katni	22.9	22.7	100.0	35.8
Mandla	9.0	16.6	96.9	55.7
Mandsaur	43.6	25.4	100.0	49.8
Morena	7.2	14.2	89.7	38.2
Narsimhapur	9.1	10.0	99.6	56.3
Neemuch	58.3	30.6	100.0	46.4
Panna	9.9	10.9	99.4	28.9
Raisen	7.2	19.8	99.7	46.0
Rajgarh	32.0	19.5	100.0	44.1
Ratlam	52.6	19.1	100.0	45.2
Rewa	19.2	33.4	93.8	31.3
Sagar	9.7	16.7	99.1	38.7
Satna	7.5	14.3	87.0	34.8
Sehore	17.8	25.7	99.7	47.7
Seoni	6.0	10.0	95.6	52.1
Shahdol	12.2	12.2	97.5	33.5
Shajapur	47.7	28.0	100.0	51.7
Sheopur	1.0	3.3	80.1	39.2
Shivpuri	44.5	15.4	100.0	38.1
Sidhi	1.0	6.4	84.6	27.4
Tikamgarh	7.4	15.2	97.2	43.2
Ujjain	11.1	22.3	99.8	53.7
Umaria	14.4	9.5	100.0	37.3
Vidisha	16.8	20.0	99.2	33.1
West Nimar	43.0	28.7	99.8	57.5
Rural MP	18.4	19.0	97.6	44.1

Table 6: Odds ratio for full ANC, safe delivery, and awareness and use of modern family planning method

VARIABLES	Full ANC	Safe Delivery	Knowledge of Any Modern Family Planning Method	Currently Using Any Modern Family Planning Method
Women's Age				
15-19 ^R				
20-24	2.023*	1.926**	1.050	1.836**
25-29	1.297	1.525**	0.840	3.491**
30-34	0.569	1.215**	0.600*	4.110**
35-39	0.289*	0.594	0.493*	4.797**
40-44	0.165*	0.228**	0.459*	4.970**
Religion				
Hindu ^R				
Muslim	0.616**	1.678**	0.886	0.692**
Others	0.653	1.417	0.786	1.656*
Caste				
Scheduled Caste ^R				
Scheduled Tribe	1.011**	0.940	1.339*	0.953*
Other Backward Class	1.027	1.054	1.099	1.335*
Others	1.529*	1.082	1.534*	1.262*
Marital Duration				
Less than 5 Years ^R				
5 to 9 Years	1.124	0.822*	1.303	1.082
10 to 14 Years	1.041	0.452**	1.802*	1.820**
15 Years and above	0.795	0.224**	3.846**	2.873**
Children ever Born				
Less than 2 ^R				
2 to 3 Children	1.283	1.450**	2.274**	8.853**
More than 3	2.006*	2.236**	2.256**	7.075**
Women's Education				
Non-literate ^R				
Primary	1.429	1.146**	1.189**	1.426**
Middle	2.363**	1.246**	1.817*	1.379**
Secondary	3.651**	1.394**	1.792**	1.190
Higher Secondary and above	7.859**	1.800**	2.370*	1.156
Husbands' Education				
Non-literate ^R				
Primary	0.098*	1.022	1.777*	1.528**
Middle	1.252	1.139*	1.236*	1.435**
Secondary	1.086	1.188*	0.966	1.305**
Higher Secondary and above	1.046	1.023	0.856	1.382**
Households' Standard of Living Index				
Low ^R				
Medium	1.169*	1.208**	2.117**	1.758**
High	1.647**	1.879**	2.911**	2.411**
Full ANC				
No ^R				
Yes	-	2.346**	2.332	1.072
Accessibility of Any Public Health Facility throughout the Year				
No ^R				
Yes	1.130	1.015*	1.531*	1.092*
Availability of Public Health Facility in the Village				
No ^R				
Yes	1.526*	1.359**	1.325**	1.518*
Accessibility Index				
Good ^R				
Moderate	1.065*	0.904**	0.355*	0.947*
Poor	0.867*	0.801**	0.266*	0.822**

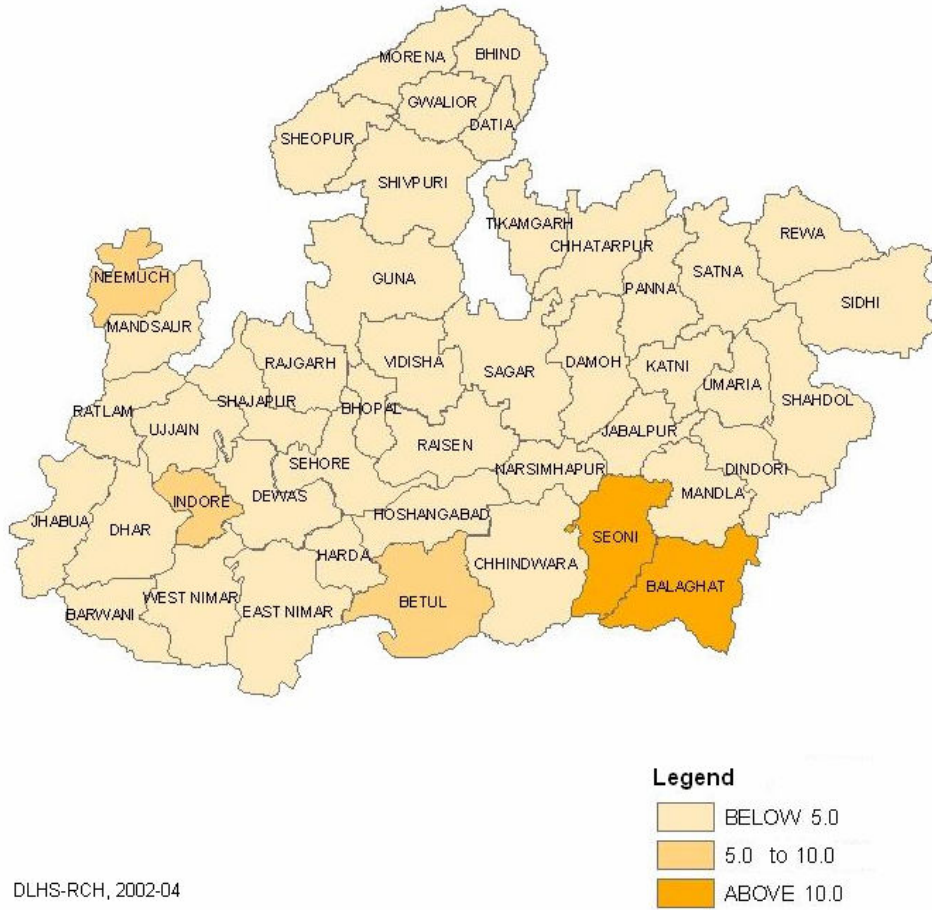
Significant at ** 1% level, * 5 % level, ^R Reference Category

Table 7: Spatial Pattern of Percentage of Rural Women Having Accessibility to Public Health Facility

District	Accessibility to Any Public Health Facility	Availability of Any Public Health Facility in Village	Accessibility Index		
			Good	Moderate	Poor
Balaghat	92.3	37.7	30.2	63.3	6.5
Barwani	88.1	50.6	0.0	85.0	15.0
Betul	63.3	26.2	16.2	59.9	23.9
Bhind	64.5	37.0	16.8	60.4	22.9
Bhopal	89.7	44.0	17.6	82.4	0.0
Chhatarpur	24.9	26.5	19.1	36.6	44.3
Chhindwara	70.4	41.2	16.6	56.9	26.4
Damoh	71.7	29.5	0.0	58.9	41.1
Datia	27.1	58.8	48.1	21.8	30.1
Dewas	65.2	38.0	15.3	75.6	9.1
Dhar	52.2	48.7	29.1	48.0	22.8
Dindori	84.4	34.1	11.2	39.8	48.9
East Nimar	66.0	39.1	14.0	82.6	3.4
Guna	67.5	40.8	16.2	55.4	28.4
Gwalior	65.0	27.4	8.7	83.0	8.3
Harda	87.9	20.6	20.5	66.4	13.2
Hoshangabad	80.3	39.3	12.7	82.0	5.3
Indore	79.9	32.5	8.4	81.7	9.9
Jabalpur	81.7	26.1	19.4	54.8	25.9
Jhabua	58.5	30.8	5.1	64.8	30.1
Katni	94.1	42.4	17.8	62.8	19.4
Mandla	78.0	50.7	8.0	64.8	27.2
Mandsaur	67.8	36.3	15.0	73.7	11.2
Morena	91.6	39.9	33.2	42.9	23.9
Narsimhapur	84.8	41.9	13.1	68.0	18.9
Neemuch	92.2	38.1	21.2	51.9	26.9
Panna	69.2	26.4	0.0	45.0	55.0
Raisen	99.1	40.9	14.8	66.8	18.4
Rajgarh	47.7	16.7	16.4	67.2	16.4
Ratlam	53.9	35.1	28.0	72.0	0.0
Rewa	100.0	17.0	10.8	63.1	26.1
Sagar	56.4	36.9	0.0	73.8	26.2
Satna	59.7	24.8	13.1	74.0	12.9
Sehore	47.8	35.7	15.9	52.9	31.2
Seoni	60.3	33.7	10.2	67.9	21.9
Shahdol	92.6	29.1	20.6	51.7	27.6
Shajapur	61.3	27.2	5.9	70.3	23.8
Sheopur	92.7	45.6	11.8	70.6	17.6
Shivpuri	35.6	14.0	11.3	47.0	41.7
Sidhi	88.3	18.3	26.5	50.4	23.1
Tikamgarh	91.3	37.7	4.8	61.6	33.6
Ujjain	67.1	34.5	18.1	70.2	11.7
Umaria	83.1	29.0	9.4	57.8	32.8
Vidisha	20.2	21.5	10.8	34.7	54.5
West Nimar	60.1	39.1	14.3	47.1	38.5
Rural MP	69.7	34.4	14.9	61.0	24.2

Map-1

Spatial Patterns of Full ANC among Rural Women in Madhya Pradesh



Map-2

Spatial Patterns of Safe Delivery among Rural Women in Madhya Pradesh

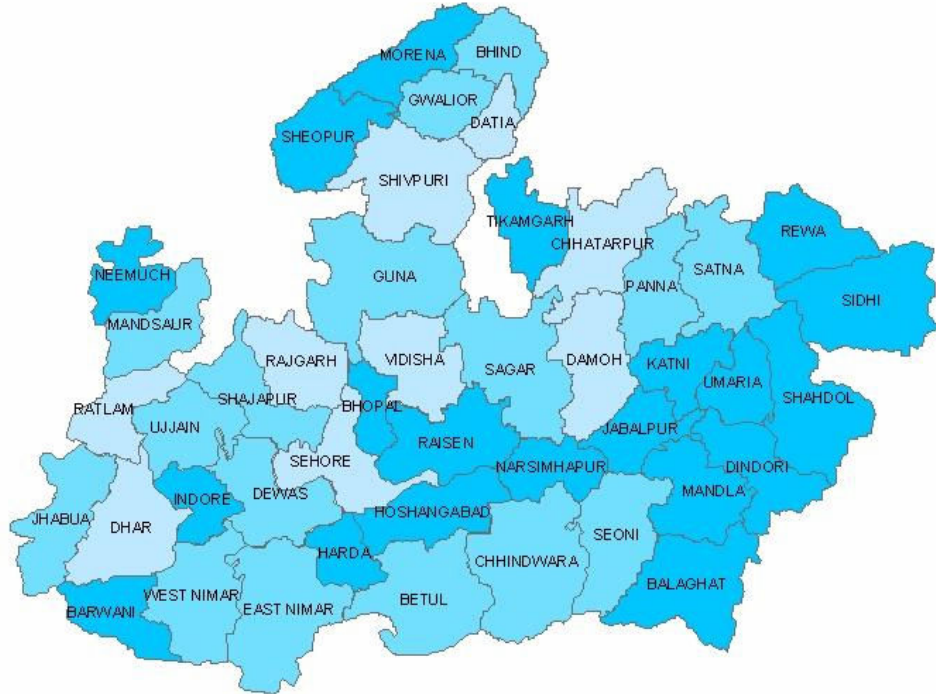


Legend

- BELOW 30.0
- 30.0 to 50.0
- ABOVE 50.0

MAP-3

Percentage of Women Having Access to Any Public Health Facility throughout the Year in Rural Madhya Pradesh



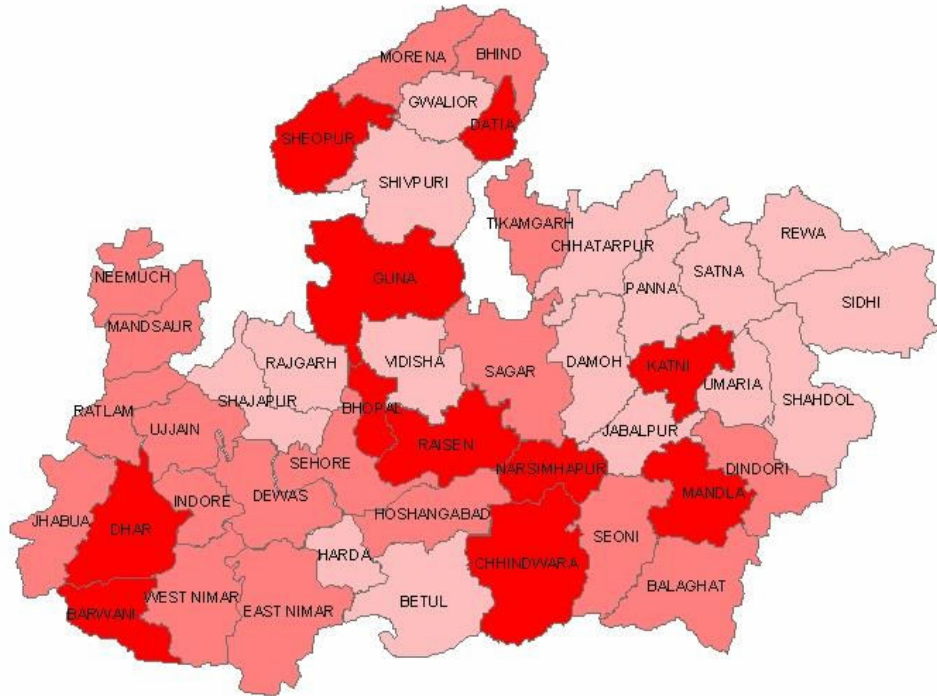
Legend

- BELOW 55.0
- 55.0 to 75.0
- ABOVE 75.0

DLHS-RCH, 2002-04

Map- 4

Percentage of Women having Availability of Any Health Facility in the Village in Rural Madhya Pradesh



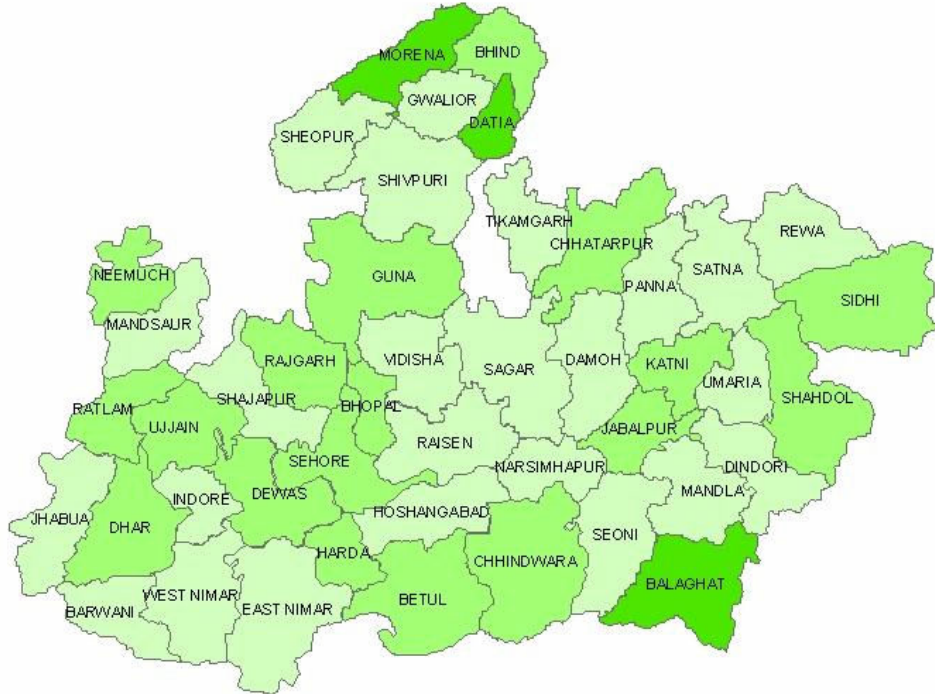
Legend

- BELOW 30.0
- 30.0 to 40.0
- ABOVE 40.0

DLHS-RCH, 2002-04

Map-5

Spatial Pattern of Percentage of Women Having Good Accessibility in Rural Madhya Pradesh



Legend

- BELOW 15.0
- 15.0 to 30.0
- ABOVE 30.0