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Household basic needs infrastructure in rural Rajasthan: A micro evaluative study

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Abstract
The study is an empirical study based on the primary data collected from 320 households of 16 villages in two districts of Rajasthan, i.e. Jaipur and Tonk. The main objective of the study was to assess the household to three key basic needs such as housing, drinking water and sanitation. The findings show that 72 percent of the household have *pucca* houses and only 9.4 percent have *katcha* houses. As far as the rooms in the houses are concerned 65 percent of houses are two room houses. The status of safe drinking water reveals that 12.8, 18.1, 15.6 and 51.9 percent of households are fetching water from tube well, well, tap and hand pumps for drinking purpose respectively. This means that the Swajal Dhara project of the government of India has not produced substantial effect on the rural population of Rajasthan to ensure them safe drinking water to the countryside population in these two districts. As far as the access to sanitation is concerned it is a real concern in the rural Rajasthan, as the study shows that 82.5 percent of the households are resorting to open defecation. The findings of the study are: (i) The housing status of the household is comparatively good as far as the status of access to safe drinking water and sanitation; (ii) the sanitation condition of the rural households in both Jaipur and Tonk districts are astoundingly low; and (iii) the status of housing, sanitation and drinking water in the rural Rajasthan is better in developed district that is Jaipur as compared to the less developed district Tonk; and (in) this may be one of reasons for high rural infant mortality rate in the countryside of these two district.

Keywords: infrastructure, drinking water, sanitation, MCH, NRHM, immunisation

Introduction

The basic needs approach to development was endorsed by governments and workers' and employers' organization from all over the world. It influenced the programmes and policies of major multilateral and bilateral development agencies, and was the precursor to the human development approach. A traditional list of immediate basic needs is food (including water), shelter and clothing, but modern lists emphasize the minimum level of consumption of basic needs of not just food, water, clothing and shelter, but also sanitation, education and healthcare.

Drinking water and sanitation in India continue to be inadequate, despite longstanding efforts by the various levels of government and communities for improving coverage. The level of investment of water and sanitation albeit low by international standards, has increased in size during the 2000s. Access has also increased significantly. In 1980 rural sanitation coverage was estimated at 1% and reached 21% in 2008. The share of Indian's with access to improve sources of water has significantly increased from 72% in 1990 to 88% in 2008. A study by water Aid estimated as many as 157 millions Indian or 41 percent of Indians living in urban areas, live without adequate sanitation. In 2010, the UN estimated based on Indian statistics that 626 million people practice open defecation. This has serious public health implications. The lack of adequate sanitation and safe water has significant negative health impacts including diarrhea.

The Government of India and different state governments are striving hard to improve the health and well-being of their population. Recently in 2005, the nation has launched National Rural Health Mission (NRHM) in order to strengthen the delivery of primary health care services for the improvement of health status of rural population. The mission's major objectives include (i) Facilitating increased access and utilisation of quality health services by all. (ii) Reducing child and maternal mortality. (iii) Universalising access to public services for food and nutrition, sanitation and hygiene and to public health services with emphasis on services addressing women's and children's health and universal immunization. (iv) Seeing a concomitant reduction in infant mortality rate (IMR), maternal mortality rate (MMR) and total fertility rate (TFR). (v) Generating health plans for each village through the Village Health Committee of the Panchayat.(vi) Implementing intersectoral District Health Plans (DHPs) prepared by the District Health Mission, which converge health, nutrition, water, sanitation and hygiene activities

Objectives

- To assess the quality of living status of the countryside population in Rajasthan.
- To assess the health status of population as it has close link with the quality of living.
- To study the occupation and income profile of the households in the study area.

Methodology

The study is an empirical study based on the primary data collected from 320 households of 16 villages in two districts of Rajasthan, i.e Jaipur and Tonk. The two districts were

selected on the pretext that Jaipur is one of the advanced districts and Tonk is comparatively a less advanced district. The two blocks from each district such as two advanced block and two backward blocks were selected. The villages were selected randomly from the list of villages available in the block.

Discussion

i) Occupation Profile of the Households in the study area

Improving the livelihood of the people is one of the fundamental duties of a nation. Article-39 of the Indian Constitution states that "the citizens, men and women equally, have the right to an adequate means of livelihood". A decent and well-paid employment and job can guarantee sustainable livelihood and good quality life to the people. Table-1 shows that 28 percent of people are occupied in household work and a colossal number above 98 percent of them are women. It is seen that 38.97 percent of total working population are engaged in agriculture, while 13.94 percent are performing labour work. It is important to observe that not a single woman is in private or government job. This depicts the sordid status of women in employment and workforce participation in these villages.

Table 1: Occupation Profile of the Total Households of Both the Districts

S. No.		Total	Total	Total
	Occupation	**Male (Jaipur and Tonk)**	**Female (Jaipur and Tonk)**	**Male and Female (Jaipur and Tonk)**
1.	House hold work	8 (1.90)	227 (54.17)	235 (28.00)
2.	Agriculture	150 (35.71)	177 (42.27)	327 (38.97)
3.	Labour	107 (25.47)	10 (2.38)	117 (13.94)
4.	Government Service	43 (10.55)	0	43 (5.12)
5.	Private Service	54 (12.85)	0	54 (6.49)
6.	Shop/Business	45 (10.71)	2 (0.47)	47 (5.90)
7.	Un-employed	12 (2.85)	3 (0.71)	15 (1.78)
8.	Retired	1 (0.23)	0	1 (0.11)
	Total	420 (100)	419 (100)	839 (100)

Note: Figures in parenthesis show percentages to total.

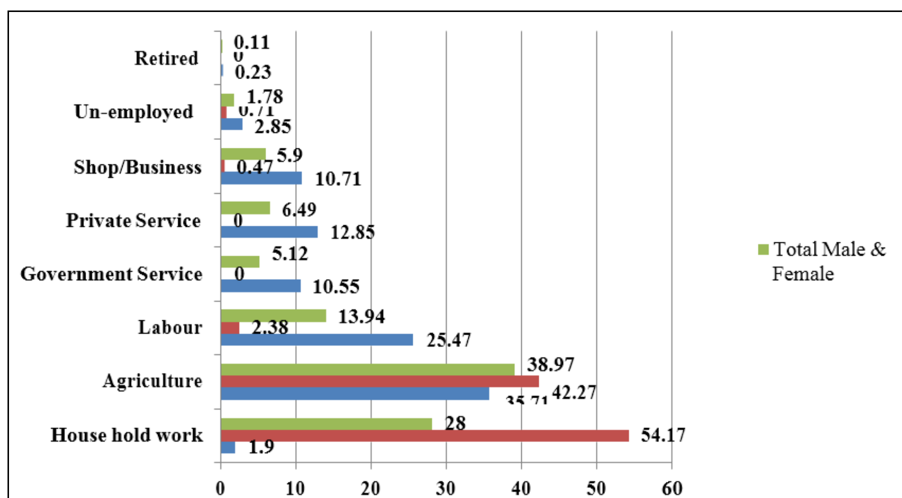

Fig 1: Occupation Profile of the Total Households of Both the Districts

ii) Income Profile of the Households

Customarily the income of the rural households is low as a result their quality of life is not good compared to people living in urban areas. Table- 2 & Fig.-2 gives an account of the income profile of the households. The table shows that the highest percent of population (56.5 percent) are bracketed in the monthly income range of 5001-10,000; and 4.7, 3.4 and 1.2 percent of the population have income in the range of 20001-25000, 25001 – 35000 and >35001 respectively.

Table 2: Monthly Income Profile of the Population of Jaipur and Tonk Districts

S. No.	Income (RS.)	Jaipur	Tonk	Total Number and Percentage
1.	1000-5000	28(17.5)	29(18.1)	57(17.8)
2.	5001-10000	72(45.0)	109(68.4)	181(56.5)
3.	10001-15000	29(18.1)	11(6.8)	40(12.7)
4.	15001-20000	9(5.7)	3(1.8)	12(3.7)
5.	20001-25000	9(5.7)	6(3.7)	15(4.7)
6.	25001-35000	10(6.2)	1(0.6)	11(3.4)
7.	35001+	3(1.8)	1(0.6)	4(1.2)
	Total	160	160	320

Note: Figures in parenthesis show percentages to total.

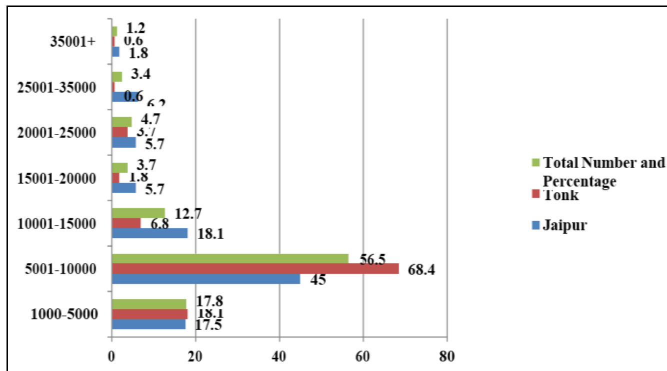

Fig 2: Monthly Income Profile of the Population

iii) Housing Profile of the Households

a) Types of Houses of the Households

A healthy home is essential for a healthy living. WHO defines a house as "the residential environment, the physical structure that man uses for shelter and the environment surrounding it, including all necessary services, facilities, equipment and devices related or desired for the physical and mental health and social well-being of a family". Unhygienic home environment has detrimental effect on health, peace of mind and well-being. Table-3 & Fig.-3 illustrates that

77.2 percent of households have pucca houses made of bricks with cemented roof and only 9.4 percent have kutcha houses built of mud and other low quality materials. The percentages of pucca houses in Jaipur District is 80 percent while in Tonk District, it is 74.38 percent. This shows that the economic condition of the people is better, which enables them to afford pucca houses.

Table 3: Types of Houses of Households

S. No	House Condition	Jaipur	Tonk	Total Number and Percentage
1.	Pucca	128 (80)	119 (74.38)	247 (77.2)
2.	Semi-pucca	11 (6.88)	32 (20)	43 (13.4)
3.	Kutcha	21 (13.12)	9 (5.62)	30 (9.4)
	Total	160	160	320

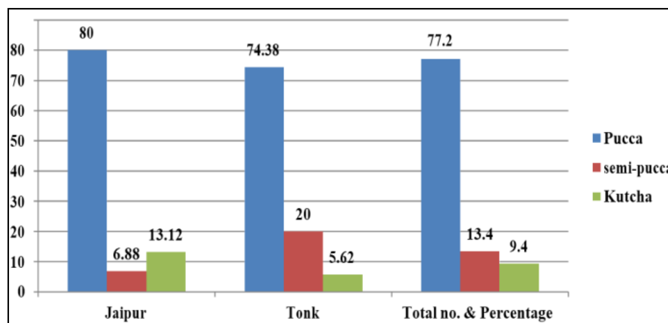

Fig 3: Types of Houses of the Households

b) Profile of Number of Rooms in Houses

A large number of houses (65 percent) have two rooms. The percentage of two room houses is 59.38 and 70.62 in Jaipur and Tonk District respectively. Nearly one-fourth houses are three- room-set houses. Only 2.8 percent of households have one-room house. This also reflects the good economic condition of the population in the study area.

Table 4: Profile of Number of Rooms in Houses of Jaipur and Tonk Districts

S. No	Number of Rooms	Jaipur	Tonk	Total Number and Percentage
1.	One	5 (3.12)	4 (2.5)	9 (2.8)
2.	Two	95 (59.38)	113 (70.62)	208 (65.0)
3.	Three	42 (26.25)	40 (25)	82 25.6)
4.	Four	16 (10)	2 (1.25)	18 (5.7)
5.	Five	2 (1.25)	0	2 (.6)
6.	Six and more	0	1 (0.63)	1 (.3)
	Total	160 (100)	160 (100)	320 (100)

Note: Figures in parenthesis show percentages to total

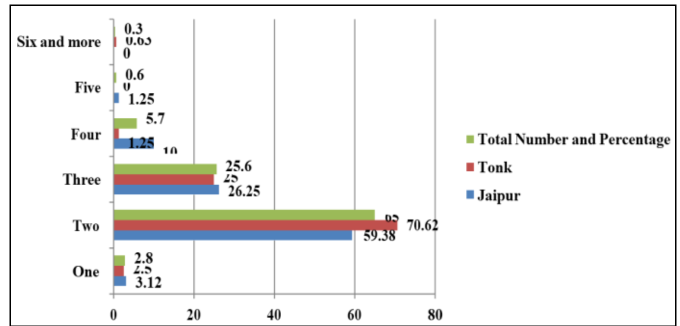

Fig 4: Profile of Number of Rooms in Houses

c) Source of Drinking Water of the Households

The general covenant on the Right to Water adopted by the Covenant on Economic, Social and Cultural Rights held in November, 2002 recognized water as a fundamental human right and stated that everyone has the right to access safe and secure drinking water, equitably without discrimination as safe drinking water is essential to human life and well-being.

Table 5: Source of Drinking Water in Jaipur and Tonk Districts

S. No	Source of Drinking Water	Jaipur	Tonk	Total Number and Percentage
1.	Tube well	37 (23.1)	4 (2.5)	41 (12.8)
2.	Well	23 (14.4)	35 (21.9)	58 (18.1)
3.	Tap	49 (30.6)	1 (0.6)	50 (15.6)
4.	Hand Pumps	47 (29.4)	119 (74.4)	166 (51.9)
5.	Others- Supply by tankers	4 (2.5)	1 (0.6)	5 (1.6)
	Total	160	160	320

Note: Figures in parenthesis show percentages to total.

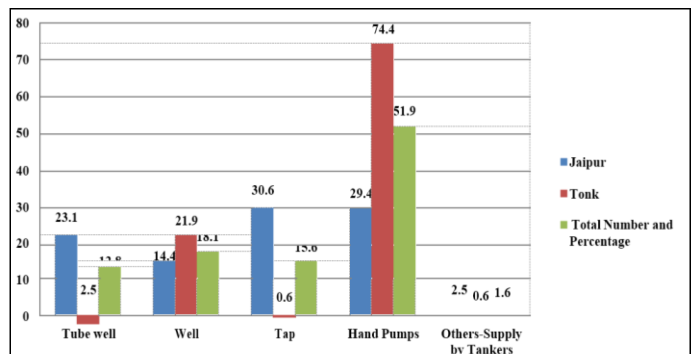

Fig 5: Source of Drinking Water

Table- 5 & Fig.-5 which gives profile of sources of drinking water clearly reveals that 51.9 percent of households drink

water from hand-pumps while only 15.6 percent are using tap water and 18.1 percent of households are using well-water.

d) Sanitation Status of the Households

Almost half of the population in the developing world are suffering from one or more infectious diseases associated with contaminated water supply and sanitation. Due to lack of availability of basic sanitation, more than 160 million people are infected with schistosomiasis causingtens of thousands of deaths every year. Open defecation barefoot cause's worm infection among children in rural areas and it also affects the health status of pregnant women.

Table 6: Sanitation Facility in Homes of Jaipur and Tonk Districts

S. No	Toilet Facility	Jaipur	Tonk	Total Number and Percentage
1.	Toilet	41 (25.6)	13 (8.1)	54 (16.9)
2.	Borehole	2 (1.2)	0	2 (0.6)
3.	Open air	117 (73.1)	147 (91.9)	264 (82.5)
	Total	160	160	320

Note: Figures in parenthesis show percentages to total.

It is an irony that 82.5 percent of households are using open field for defecation. Only 16.9 percent of households have toilet facilities in their houses.

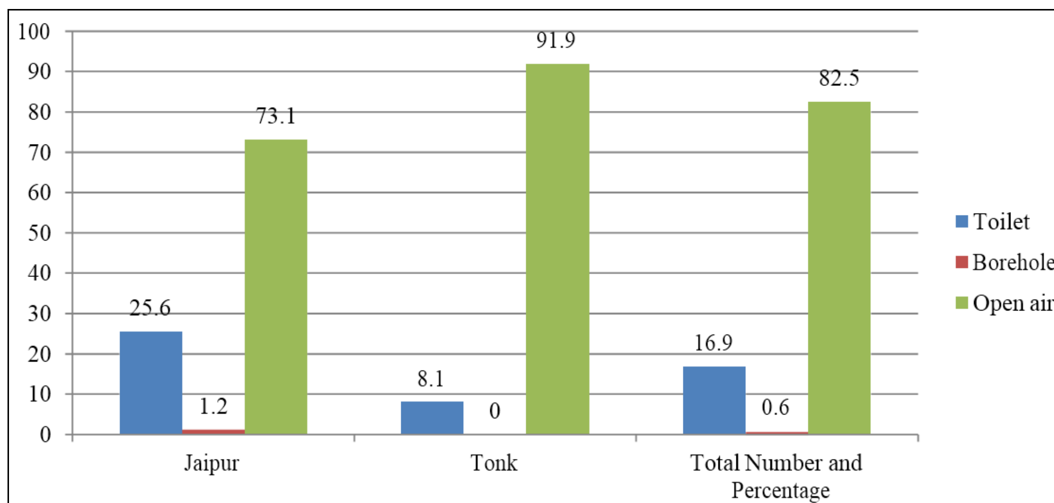

Fig 6: Sanitation Facility in Homes

iv) Child Immunization of the Households in the study area

Immunization of children against preventive diseases is an essential component of child health care. Although, through various health care programme interventions, the immunization status of children is improving, yet the status of immunization in children in rural areas is still low, particularly in the health laggard states. A great deal of endeavour is required to raise the immunisation status of children especially in 0-2 year's age group to check infant mortality. Table-7 presents an analysis of immunisation status of children in 0-2 years.

Table 7: Immunisation Status of Children (0-2) Years Age Group before and After NRHM in Jaipur and Tonk Districts (In Percentage)

S. No	Child Immunisation	Jaipur			Tonk		
	Child Immunisation (0-2 years)	Status in (2006)*	Status in (2013)**	Differences	Status in (2006)*	Status in (2013)**	Differences
1.	Full immunisation	51.5	69.6	18.1	46.8	78.8	32.0
2.	Partial immunisation	46.7	28.7	18.0	50.4	20.4	30.0
3.	No immunisation	1.8	1.7	0.1	3.0	0.8	2.2

Note: * DLHS-3 (2007-08) data of Rajasthan. **Field Survey data conducted during 2013.

Table 8: Immunisation Status of (0-2) Years Children Before and After NRHM in Jaipur and Tonk Districts (In Percentage)

S. No	Child Immunisation Child Immunisation(average) (0-2 years)	Jaipur and Tonk Status in (2006)*	Jaipur and Tonk Status in (2013)**	Difference
1.	Full immunisation	49.1	74.2	25.1
2.	Partial immunisation	48.5	24.5	24.0
3.	No immunisation	2.4	1.2	1.2

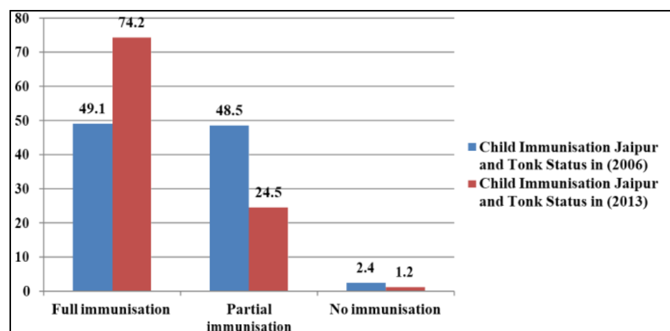

Fig 7: Immunisation Status of (0-2) Years Children Before and After NRHM in Jaipur and Tonk Districts

The analysis of field data in the Table-8 & Fig.-7 depicts that full immunisation status of children in the age group 0-2 years in the surveyed households is 74.2 percent, which shows a 25.1 percent increase compared to the base year data of 2006. As a result the partial immunisation status as well as the children without immunisation has reduced by 24.0 and 1.2 percent respectively. Another important fact which the analysis of data revealed was that the increase in immunisation after the NRHM is higher in Tonk (backward as compared to Jaipur) District that is 32.0 percent while, in Jaipur District, the percentage increase is 18.1 percents depicted in Table-7, Thus it shows that the impact of NRHM as far as immunisation status of children is concerned has been more in backward district than in advanced district. Thus the backward district is the greater beneficiary of the NRHM programme.

v) Infant and Maternal Mortality Status

Table-9 accounts the infant and maternal deaths in the two districts.

Table 9: Infant and Maternal Mortality Status

S. No	IMR/MMR during in the last 1 year	Jaipur	Tonk
		Current status (2013)	Current status (2013)
1.	Number of mother's death during last one year in the village	0	0
2.	Maternal Mortality Rate (MMR)	0	0
3.	Number of child's death during last one year in the village	5.4	8.9
4.	Infant Mortality Rate (IMR)	54	90

Table-9 shows that not a single woman died as a consequence of delivery, therefore maternal mortality is zero. However, infant mortality is a cause of concern as the IMR is 54 and 90 in Jaipur and Tonk districts respectively. The study reveals that IMR is quite high, 70 per thousand live births, which is even higher than the state average of 47(SRS-2013). This indicates that NRHM has not been able to effectively control IMR.

Table 10: Reason for Child/Infant Death in Jaipur and Tonk Districts 2013

S. No	Reason for Child/Infant Death	Jaipur	Tonk	Jaipur and Tonk (average)
1.	As a result of lack of Ante-Natal services, fluid goes in to the mouth of the child	23.8	8.1	15.9
2.	Blockage in heart	2.5	0	1.3
3.	As a result of medical negligence by health providers	8.1	0	4.0
4.	As a result of lack of food and nutrition	3.1	2.5	2.8
5.	As a result of Mother's illness	3.1	0	1.6
6.	As a result of traditional faith and beliefs	0	17.5	8.8
7.	As a result of lack of health education	1.3	4.4	2.8
8.	As a result of lack of road and transportation	1.3	0	.6
9.	Do not know the cause of death	5.0	8.8	6.9
10.	Disinclined to tell	39.4	28.8	34.1

Table-10 reveals the main reasons for the death of children in the both districts. These are lack of ANC, medical negligence, observance of traditional faiths, and lack of health education, lack of food and nutrition and unknown causes of death and are 15.9, 4.0, 8.8, 2.8, 2.8 and 6.9 percent respectively. The table shows that more deaths occur as a result of observance of traditional faiths and beliefs in the backward districts rather than forward districts.

Conclusion

Findings

1. The housing status is better than the status of safe drinking water and sanitation.
2. Less than 20 percent of households are using the toilet while more than 77 percent of households have Pacca houses. This clearly shows that people in the rural areas do not have positive attitude towards sanitation.
3. The immunization status of the household has been improved because of effective implementation of NRHM in the area. However, the immunization status of children in the advanced district is better than the less advanced district.
4. The infant mortality is a concern in the area. Death of 90 infants for 1000 birth is a cause of concern. Sanitation may be one of the reasons for this poor status.

Suggestions

1. A mass campaign of sanitation with the help of village Panchayats and the youth and mahila mandal members is required to raise the sanitation status of the households in the villages,
2. The house constructed with the help of Pradhan Mantri Awas Yojana must ensure the facility of toilet in the houses.

3. The infant mortality rate has to be checked. The ASHA and ANM along with the Anganwadi workers have to work hard to propagate safe childhood to the countryside households in the rural areas of Rajasthan.

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