Research Paper Economics

National Rural Health Mission and Rural Health Status in Karanataka: An Economic Analysis

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ABSTRACT

National Rural Health Mission (NRHM) was implemented in Karnataka in 2005 (although the full fledged activities began in full swing in 2007-08), along with the other states and union territories. In Karnataka, the implementation plan for NRHM has been developed by integrating different strategies suggested by the state health policy as well as core strategies of NRHM. The paper intends to study the impact of NRHM in terms of health infrastructure and to examine the impact of NRHM on health indicators, like Infant Mortality Rate (IMR), Maternal Mortality Rate (MMR), Crude Death Rate (CDR) and Total Fertility Rate (TFR) in Karnataka. The study result shows that the number of Sub Centres, Primary Health Centers and Community Health Centers has increased between 2005 and 2010. Also, IMR, MMR, CDR and TFR have come down after the implementation of National Rural Health Mission.

KEYWORDS NRHM, IMR, MMR, PHCs and CHCs

Introduction

Health is described as the state of complete physical, mental and social well being (WHO). According to Webster Dictionary: Health is a state of being hale sound, or whole, in body, mind, especially, the state of being free from physical disease or pain.[8]

According to Dorland's Medical Dictionary: Health is "an optimal state of physical, mental and social wellbeing, not merely the absence of disease or infirmity".[8]

Health is the most essential component of human life. Better health status leads to better productivity. The development of the health is holistic process related to the overall growth and development of social, cultural, economic, educational and environmental factors. From a social point of view, good health is a pre-requisite for human productivity and the development process. It is essential to economic and technological development. Individually, health is a man's greatest possession, for it lays a solid foundation for his happiness.

Improvement in health would make a positive impact on economic development. Better health can increase the number of potential man hours for production by reducing morbidity and disability as well as by reducing mortality. Better health may result in more productivity per man as well as more men available for work.

Therefore, promotion of good health must be a prime objective of every country's development program. It is precursor to improve the quality of life for a major portion of mankind. The preamble to the WHO constitution also states that the enjoyment of the highest attainable standard of health is a fundamental right of every human being and Governments are responsible for the health of their people and that they can fulfil that responsibility by taking appropriate and social welfare measure. Health has found an important place in the constitutions of all nations of the world.

Therefore, both developed and developing countries have started paying adequate role on improving the health status of people in the last three decades or so. A considerable portion of the Gross Domestic Product (GNP) has been earmarked for health promoting activities and health care represented by the number of medical institutions and availability of medicines.

Consider into account the above factors National Rural Health Mission was launched by the Hon'ble Prime Minister Dr Manmohan Singh in New Delhi on 12th April 2005 in the country, with a special focus on 18 states. It is the biggest ever health project in the health sector in the last 50 years. It recognizes the importance of health care in the process of economic and social development and improving the quality of lives of our citizens. It provides effective health care to rural population throughout the country with focus on 18 states which have weak public health indicators and weak infrastructures. NRHM initiative as a whole with its wide approach is a national movement than just a national health project. It seeks to provide universal access to equitable, affordable and quality health care which is accountable and responsive to the need of the people, reduction of child and maternal deaths as well as population stabilization, gender and demographic balance. It would also help to achieve the goals set under the NRHM policy and Millennium Development Goals.

Review of Literature

Kumar (2005) reported that study on Maternal Mortality Reduction and opportunity under National Rural Health Mission. Maternal Mortality Rate continues to remain high in our Country without showing any declining period of two decades. The proportion of maternal death contributes by direct obstetrics causes have also remained more or less the same in rural areas. There is a strong need to improve coverage of antenatal care, promote institutional deliveries and provide emergency of obstetric care.[4]

Ramani (2006) "Status of Indian Health System" identified that the critical areas of management concerns in the Indian Health Care System are mainly non-availability of staff, weak referral system, poor service delivery, financial shortfalls and lack of accountability of quality of care.[5]

Gautham et.al (2007) in their study "Patterns of Public Health Expenditure in India: An analysis of State, and Central Health budget in Pre and Post NRHM Period" examined the size, distribution, trends, composition and rate of growth of Union and State Health Expenditure during the period of 2001 - 2002 to 2008 – 2009.[3]

The study on "Current Status of National Rural Health Mission" by Garg (2007) the present study aims to explores the current status of implementation and progress of activities as envisaged under NRHM in the high focus states of the country that are under priority, as well as non priority states.[2]

The study on "Health of the National Rural Health Mission" by Zakir (2011) revealed that NRHM was introduced as a flagship scheme of the United Progressive Alliance Government in 2005-06 to address the needs of the rural population through architecture of the system, with the completion period drawing to a close in 2012. This study critically evaluates the success of the intervention strategies under this scheme.[9]

Anirvan (2012) in her study "Budget Briefs-National Rural Health Mission" observed that National Rural Health Mission is the Government of India's largest public health program. This report briefly analyse NRHM expenditures along the following parameters: overall trends in fund allocation and expenditure: GOI and States, allocation and expenditure on key programs like immunization, physical coverage and human resource availability, and outcomes (Infant Mortality Rate and Maternal Mortality Rate).[1]

The work on "Tracking of NRHM Funds in Mysore District of Karnataka" (2012) undertaken by GRAAM (Grass root Research and Advocacy Movement) focused on the number of state wise beneficiaries, the role of ASHA worker and funds related information. This study manly shows that increasing expenditure of fund is reducing the rate of MMR and IMR. An 800 percent increase in funds from 2006 to 2009-10, led to a corresponding fall in MMR and IMR by 32.8 percent and 18 percent respectively.[7]

Suresh (2013) revealed that the latest review of NRHM has found that before implementation of NRHM in Odisha state have less number of PHCs and CHCs and high rate of IMR and MMR, but after implementation of NRHM number of PHCs and CHCs have been increased and IMR and MMR rate have decreased after implementation of NRHM.[6]

➢ **Objectives of the Study**

1. To study the impact of NRHM in terms of health infrastructure in Karnataka.
2. To examine the impact of NRHM on health indicators, like IMR, MMR, CDR and TFR in Karnataka.

Hypotheses of the Study

- There is significant reduction in health indicator like IMR, MMR, CDR and TFR after implementation of NRHM.

Methodology

Keeping the objective in the mind the present study employs various statistical and econometric tools like table, graph and paired T test.

Sources of data

The study relies on secondary data. The data is collected from Ministry of Health and Family Welfare Statistical Report, NRHM Annual Reports, Karnataka State Report on NRHM 2005, Karnataka Human Development Report 2005, WHO Reports, Five Year Plan Documents, Word Bank Reports and Census Reports.

Scope of the Study

The present study deals with National Rural Health Mission and Health Status in Karnataka on the basis of secondary data available.

Result and Discussion

Table1-1: Health Infrastructure in Karnataka

Health Infrastructure				
Year	Sub Centre	PHCs	CHCs	DHCs
Before implementation of NRHM				
2000-01	8143	1676	176	24
2001-02	8143	1676	176	24
2002-03	8143	1679	176	24
2003-04	8143	1679	176	24
2004-05	8143	1685	176	24
After Implementation of NRHM				
2005-06	8143	1685	176	24
2006-07	8143	1685	301	25
2007-08	8143	1696	325	26
2008-09	8870	2193	326	27
2009-10	8870	2310	361	27
2010-11	8870	2310	361	27

Sources: District Level Household and Facility Survey and Rural Health Statistic 2010.

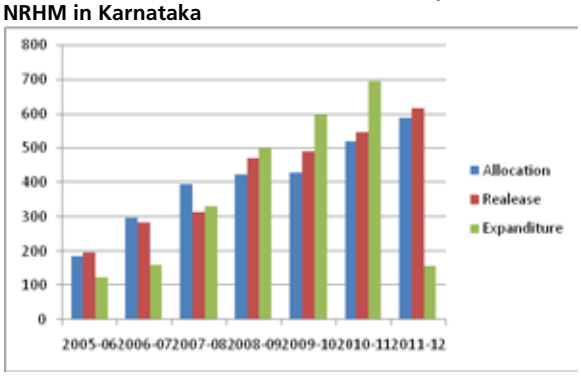
From table -1, it is clear that in the year 2005 when NRHM was launched, there were 8143 sub centers, 1685 PHCs, 176 CHCs and 24 DHCs operating in Karnataka. In the year 2010, the number of sub centers and PHCs increased from 8143 to 8870 and 1685 to 2310 respectively and CHCs from 176 to 361 and DHCs 24 to 27 in Karnataka during the period 2005-2010.

Table -2: Paired Sample T Test on Health Infrastructure in Karnataka

Infrastructure	Statistical Value	Before NRHM	After NRHM	Mean Difference	Correlation	T-Value	df	Sig
Sub Center	Mean	8143.00	8433.80	-290.800	.000	-1.633	4	1.78
PHCs	Mean	1679.00	1913.80	-234.800	.820	-1.704	4	.164
CHCs	Mean	176.00	297.80	-121.800	.000	-3.816	4	.019
DHCs	Mean	24.00	25.80	-1.800	.000	-3.087	4	.037

On the basis of analysis conducted by using paired sample T test, there is a significant difference in the number of health centres (health infrastructure) such as CHCs and DHCs. Further, it pointed out that after implementation of NRHM scheme a significant increase was observed in the establishment of CHCs and DHCs.

Chart-1 Fund allocation, Release and Expenditures of NRHM in Karnataka



The above chart (chart-1), proved detail on fund allocation, release and expenditures under NRHM in over the period 2005-2012 in Karnataka, substantial amount are being released by the government and the expenditure out of the released amount is also incurred for the development of the health status of the people of Karnataka.

Table -4: Indicators of Health in Karnataka

Health Indicators				
Year	IMR	MMR	CDR	TFR
Before Implementation of NRHM				
2000	57	266	7.8	2.9
2001	58	228	7.8	2.9
2002	55	228	7.8	2.9
2003	52	228	7.8	2.9
2004	49	213	7.5	2.7
2005	50	213	7.5	2.7
After Implementation of NRHM				
2006	48	213	7.5	2.2
2007	47	178	7.4	2.1
2008	45	178	7.4	2
2009	41	178	7.3	2
2010	38	178	7.2	2
2011	35	178	7.1	1.9

Sources: RHS bulletin march 20012 (Health and Family Welfare and Karnataka).

From the table [Table.3], it is clear that the Infant Mortality, Maternal Mortality, Crude Death Rate and Total Fertility Rate have reduced over the period 2005 to 2011. Before implementation of NRHM, IMR rate was 50 per 1000 live birth in Karnataka but after implementation of NRHM which reduced to 35 in the year 2011. Similarly, the MMR was 213/100,000 live birth which reduced to 178 in the year 2011. The CDR and TFR also reduced over the periods. In the year 2005, CDR was 7.5 percent which has been reduced to 7.1 in the year 2011 and in the year 2005 TFR was 2.7 which reduced to 1.9 in the year 2011 in Karnataka.

Table-5: Paired Sample T Test on Health Indicators in Karnataka

Indicators	Statistical Value	Before NRHM	After NRHM	Decreasing Mean	Correlation	T-Value	Df	Sig
IMR	Mean	53.50	42.33	11.67	0.949	13.40	5	.000
MMR	Mean	229.33	183.83	45.500	.926	13.565	5	.000
CDR	Mean	7.700	7.317	.3833	.877	12.474	5	.000
TFR	Mean	2.833	2.033	.8000	.635	21.909	5	.000

On the basis of analysis conducted by using paired sample T test, it indicates that the IMR rate was 53.50 before implementation of NRHM and it has decreased to 42.33 percent after implementation of NRHM. Overall, the decreased rate of IMR was 11.67. The t statistic is significant at 1% (df: 5, t: 13.40, sig.0.000) level. Hence the null-hypothesis of no difference is rejected and alternative hypothesis of significant difference is accepted.

With respect to MMR, the rate of MMR was 229.33 before implementation of NRHM and it decreased to 183.83 percent after implementation of NRHM. Overall, the decreased rate of MMR was 45.500. The t statistic is significant at 1% (df: 5, t: 13.566, sig.0.000) level. Hence the null-hypothesis of no difference is rejected and alternative hypothesis of significant difference is accepted.

On the other hand, CDR rate was 7.700 before implementation of NRHM and it decreased to 7.317 percent after implementation of NRHM. Overall, the decreased rate of IMR was 3833. The t statistic is significant at 1% (df: 5, t: 12.474, sig.0.000) level. Hence the null-hypothesis of no difference is rejected and alternative hypothesis of significant difference is accepted.

Whereas, TFR rate was 2.833 before implementation of NRHM and it decreased to 2.033 percent after implementation of NRHM. Overall, the decreased rate of IMR was .8000. The t statistic is significant at 1% (df: 5, t: 21.909, sig.0.000) level. Hence the null-hypothesis of no difference is rejected and alternative hypothesis of significant difference is accepted.

Major Findings of the Study

The major findings of the study are as follows:

1. Numbers of Sub centers, PHCs and CHCs have increased from 2005 to 2010 after implementation of National Rural Health Mission.
2. Over the period 2005-2012, substantial amount are being released by the Government and the expenditure out of the released amount is also incurred for the development of the health status of the people of Karnataka.
3. The crude death rate, infant mortality and fertility rate has been reduced during the period 2005 to 2010.

Policy Recommendation

1. The Public, Private and NGO/Third Sectors Partnership should put combined effort to bring reforms in the health system in the rural areas of Karnataka.
2. The facility is not reaching all the groups. Government should extend effectively the facility to the hilly region people and tribal people.
3. After the implementation of NRHM health indicators like crude death rate, infant and maternal mortality can be reduced significantly. So Government has to promote this programme extensively.

Conclusion

NRHM launched by Government of India holds great hopes and promises to serve the deprived communities of rural areas. 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. If Government continuous effectively this programme then there is no doubt that Karnataka can reduce its Infant Mortality and Maternal Mortality as per the requirements of Millennium Development Goals.

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