

TECHNOLOGICAL INTERVENTION OF TRACKING MATERNAL AND CHILD NUTRITIONAL STATUS IN ANDHRA PRADESH

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Abstract

Maternal Mortality Ratio in developing countries are still 230 per one lakh livebirths (in the year 2013), where as compared with developed countries its only 16 per lakh, which is 14 times at heigher risk ^[1]. Though India's GDP has grown by more than 50% compared from 1991, still one third of world's malnourished children are living in India and 52% of women are suffering with anaemia ^[2]. Malnourished child are at a greater risk of communicable diseases and they grows as malnourished adult who are less productive at work which is directly effecting the national economic growth; "**Healthy citizens are the greatest asset to any country can have**". Nutritional deficiency is not specific to a region or country; it's a global threat for future generation, hence in the year 2000 United Nations frame-up **Millennium Development Goals (MDGs)** with 8 indicators, which need to be achieved by 2015. In the mission of achieving the MDGs, Government of India has initiated various schemes in nutritional outcomes with the help of Integrated Child Development Services (ICDS) in delivering the services of Maternal and Infant Mortality (4th and 5th MDGs indicators), one among such schemes is Indiramma Amrutha Hastam (IAH) which is initiated to monitor and Track the Nutritional status been rendered to Pregnant, lactating mothers and the children with the help of Information Technology in the state of united Andhra Pradesh (now separated as Telangana and Andhra Pradesh).

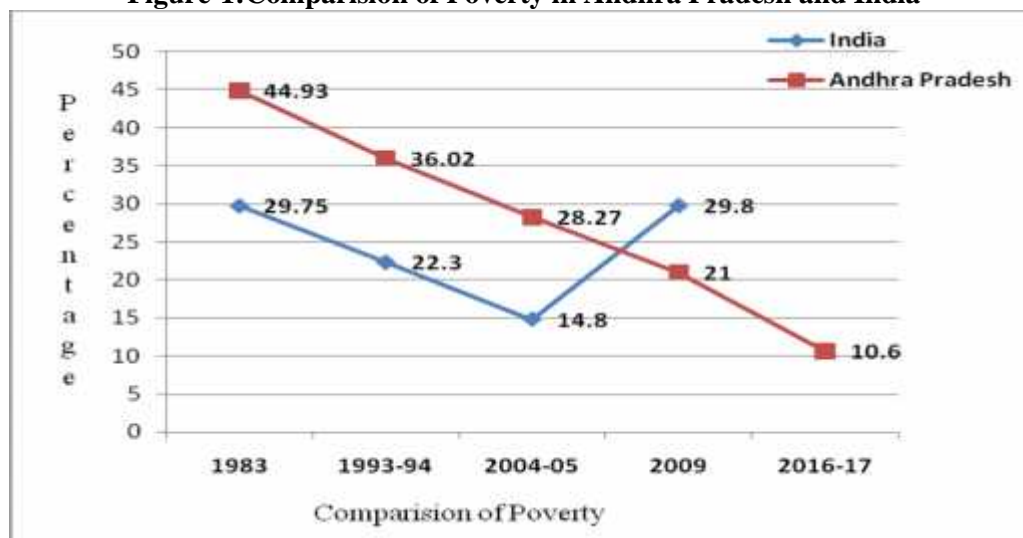
Keywords - Malnutrition, Child Nutrition, Maternal Nutrition, MDGs- Millennium Development Goals, Technology in Health, IAH, Andhra Pradesh MDGs.

1. Introduction

1.1 State Profile

Andhra Pradesh (undivided) is one among the 28 states of India which is located in Southeast part of the country. The state's total land area is 275,045 sq km and ranks fifth in its area with a population size of 75,727,541. The state has 23 districts, including the capital district of Hyderabad.

Figure-1: Comparison of Poverty in Andhra Pradesh and India



Andhra Pradesh, has the highest Infant Mortality Rate of 41 per 1000 live births and Under -5 Mortality Rate of 43 per 1000 live births among the Southern states, compared to India as a whole 42 and 52 respectively^[3], despite the country improvement in various factors like social, demographic and health indicators over the last two decades still in India 50% of people don't have shelter, 70% don't have decent toilet facilities, more than 35% of households don't have drinking water sources^[5].

The country Maternal Mortality Rate shows an overall decline from 212 (in 2007-09) to 178 in 2012 where as the State's Maternal Mortality Rate (MMR) is 110 (2011-12) which is closely to MDGs and likely to be achieved by 2015.

1.2 Millennium Development Goals

In September 2000 Eight Goals were set by the name of Millennium Development Goals with 18 quantitative target to be achieved by 2015, covering to eradicate poverty, improve Health mainly focusing on mother and child, Education, Environment and other aspects of human wellbeing. In parallel achieving the MDGs, AP Government came-up with Vision 2020 which is having similar indicators of MDGs.

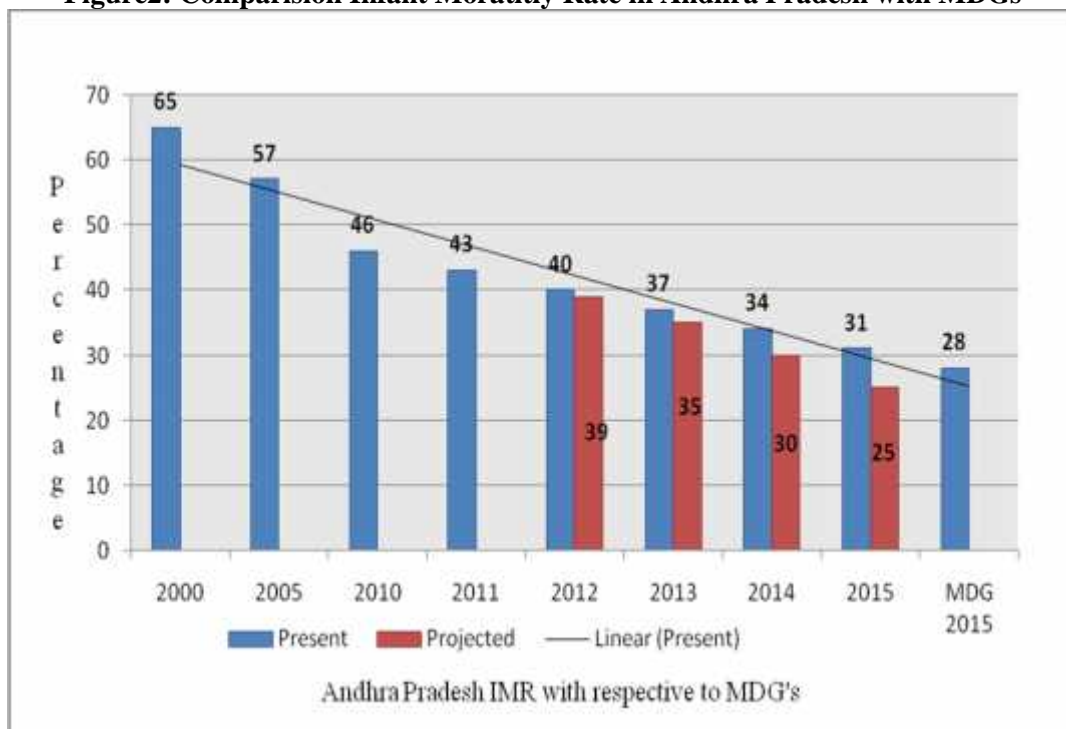
1st MDG's - Eradicate extreme Poverty and Hunger

Despite Agriculture is the main economic source of India, poverty rules with 7% of poor in India are living on less than 1.25 US\$ a day, because of which India need to adopt latest technologies in the agriculture Industry to overcome poverty. On the brighter side Government has introduced many policies and schemes to overcome poverty which is the main cause of malnutrition. Though the percentage of poor people in Andhra Pradesh has come down from 44.93% (1983) to 21% (2009), as per MDG's it has to be completely eradicated by 2015.

4th MDG's - Reduce Child Mortality

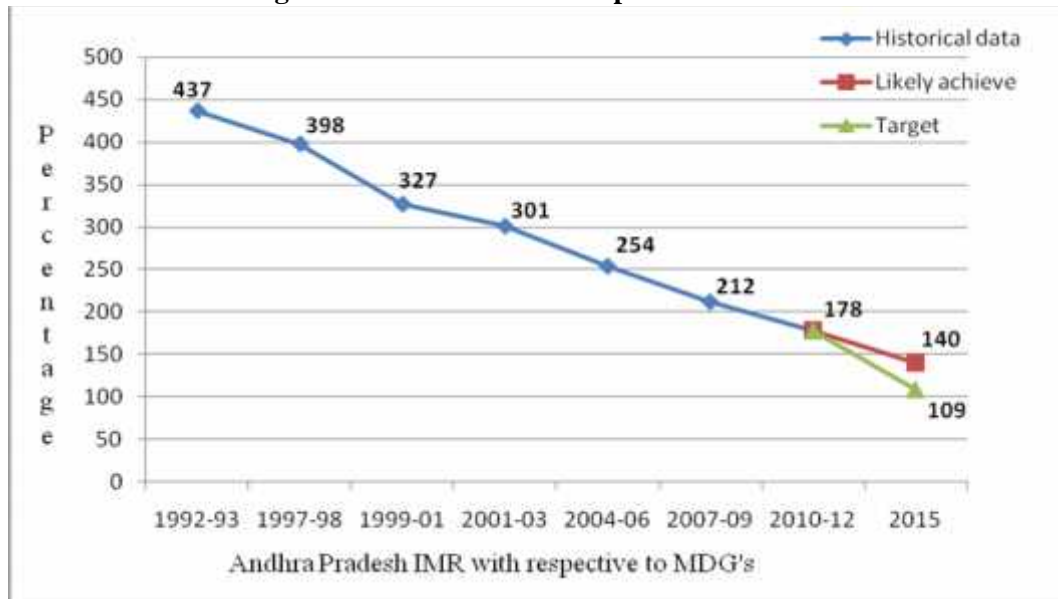
Infant Mortality Rate in the state of Andhra Pradesh is 34 per 1000 live births, as against India with 50 per 1000 live births. This is way behind the target of MDG's i.e. 23 deaths per 1000 live births.

Figure2: Comparison Infant Moratilty Rate in Andhra Pradesh with MDGs



5th MDG's - Improve Maternal Health:- Every day, approximately 800 women die due to pregnancy and child birth, out of which 99% occur in developing countries. During the period of 1990 to 2013 this has dropped to 50% worldwide MDG's target is of less than 100 by 2015. With this pace of deckling the MMR, the state is likely to achieve the MDG's 5th Goal.

Figure3: AP's MMR with respective to MDG's



1.3 Technology

Over the past few decades huge computers are replaced by mini and mobile devises, and the data managing and transferring is taking less or no time to transfer and process data to anywhere in the world by a single touch. Technology continues to expand its roots in Health sector by names like Tele-health (Telemedicine), E-health (electronic health) or M-health (mobile health), it's very much clear that we're entering into a new era of health care Industry with the help of Information Technology for better results.

We have various schemes in tracking the informationin related to Health sector, but there are some grey areas which need a continuous monitory process for better accessibility and wide spread of maternal and child malnutrition beneficiaries, and to draw the implications through reports, which we are trying to address with the help of Indiramma Amrutha Hastam. Assessing, analyzing and monitoring the nutritional situation by incorporating nutrition objectives in monitoring the program. Tracking of the Scheme of Indiramma Amrutha Hastham(IAH) using Technology is part of the thesis work.

2. Objectives

The objective of the paper is to discuss on the nutritional status of Mother and Child in tracking of ICDS scheme called Indiramma Amrutha Hastham – (IAH) by using the Web based Application. The current study is in context of Maternal and Child Nutrition, in various income groups in the state of Andhra Pradesh(un-separated AP), as well as the inter states statistics on an on-going nutrition transition with changes in lifestyle, and its impact on the future generation along with the factors associated to it by using the secondary data of National Family Health Survey(NFHS) - 3 and ICDS Scheme, mainly focused on Indiramma Amrutha Hastham (IAH).

Indiramma Amrutha Hastham is a scheme initiated under Women & Child Development Dept with 102 vulnerable ICDS Projects of high IMR, MMR and Malnutrition are identified for providing one full nutritious meal for pregnant & Lactating mothers been initiated without overlapping with NDCCs. 4,200 habitations with vulnerable population is identified for provision of meals.

Monitoring and Tracking of the IAH scheme manually has become tedious process, hence utilizing the Technology in tracking the system and the present paper focus on developing the web based application using information technology to track and monitor the IAH program and its implementation.

3. Child Nutritional Status

Children with acute malnutrition have nine times higher risk of dying than a normal child. 2.1 million children in India are dying before they reach the age of 5 years which comes near to 4 children dying per minute. Underweight births and inter-uterine growth restrictions are responsible for about 2.2 million child deaths annually in the world. Lack of nutritional status among child could be poverty, gender equality, misconception or lack of knowledge on breastfeeding, hygiene practices, proper health facilities, etc.

Figure 4: Trends in Child Nutritional Status Comparison between NFHS- 2 and 3

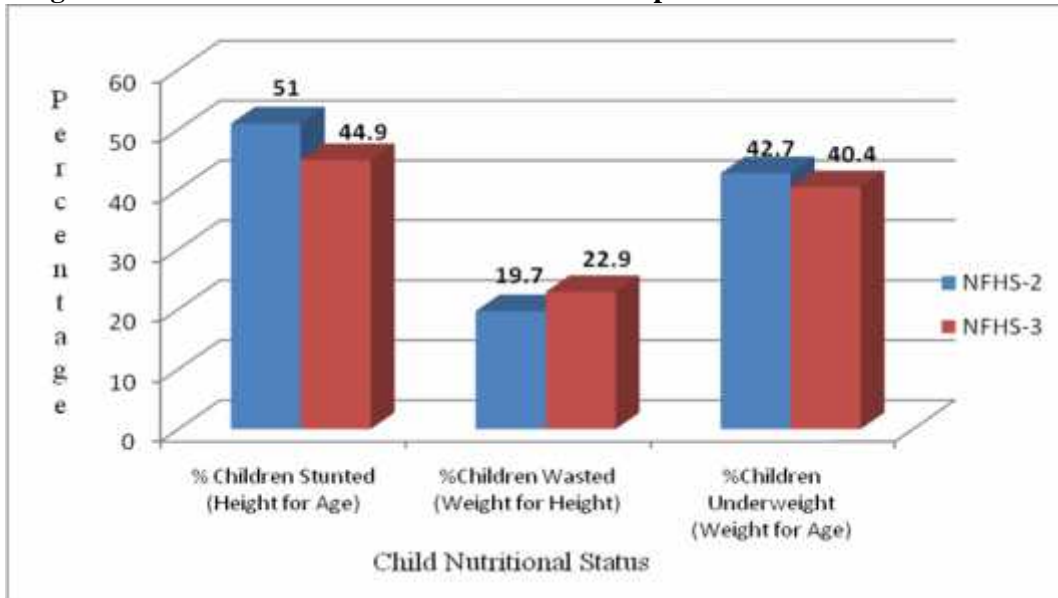
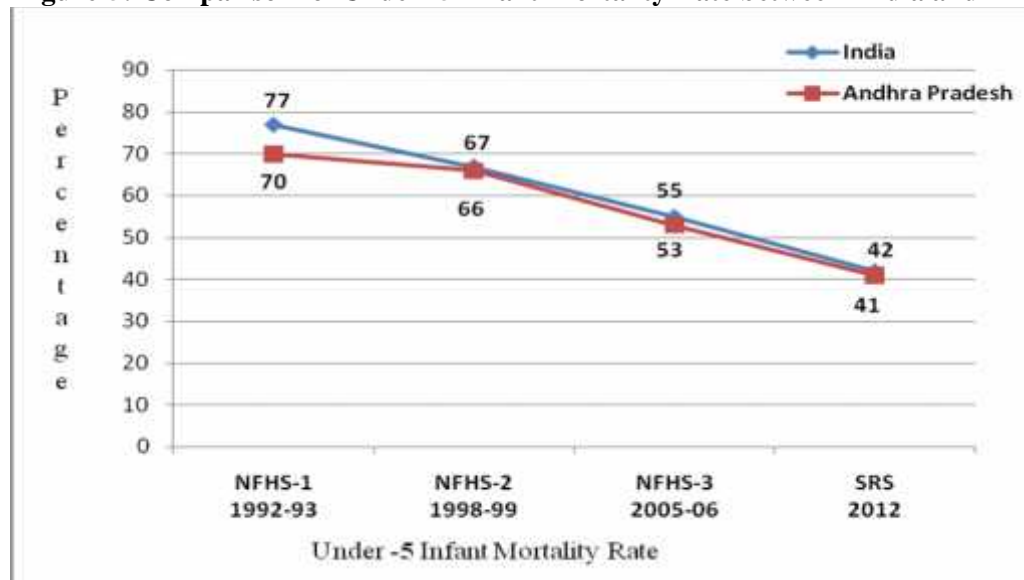


Figure-5: Comparison of Under -5 Infant Mortality Rate between India and AP.



(Source: NFHS 1,2,3, SRS)

4. Maternal Nutritional Status

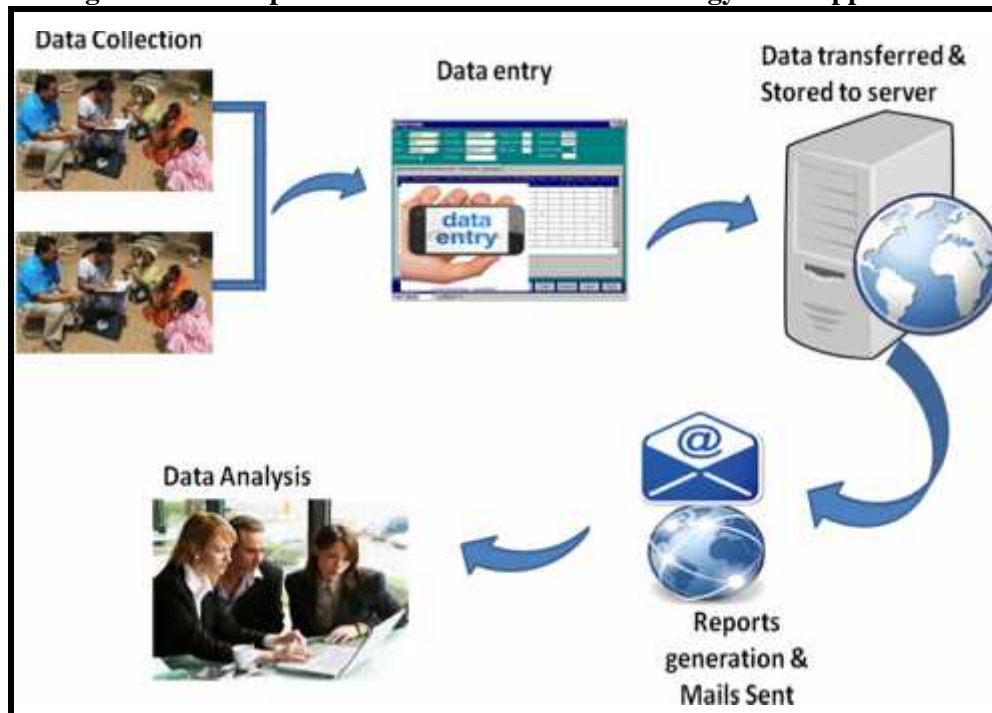
Delivery is one of the determinants of maternal deaths, hence the state has started spreading the awareness about safe deliveries by skilled attendants and to encourage them with various schemes. The state has wide network of health facilities and the awareness of maternal healthcare has started utilized in the last two decades with a clear move from traditional deliveries to institutional delivery care, from the data of NFHS 2 and 3 we can see the percentage of women who did not avail any antenatal care has come down from 12.2% to 5.2%. Women with low body mass index (BMI; <18.5 kg/m²) would have a higher risk compared to normal women. In all 32.4% of women had mild, 14.19% had moderate and 2.2% had severe anemia.

5. Technology Intervention for Tracking System

5.1 Software Details

To Track the program IAH, Dot Net web Application with the help of Microsoft SQL Server as a database is selected and to design with different parameters in monitor the Maternal, Child and Lactating Mothers Nutritional status from Anganwadi, block-level to district and state level. With the tracked information, we can generate different types of reports which help in decision making and keep continuously monitoring of the system for a better improvement.

Figure 6:- Conceptual Framework of IAH Technology Web Application



5.2 Tracking Information

- Tracking of complete information related to Pregnant and lactation Mothers.
- Tracking of information related to Child and Immunization status.
- Tracking of ANMs information at Mandal, District and State level for further follow up.

5.3 Reports

Reports are created based on the Indicator information collected by ANMs at Centre Level, Mandal Level, District Level, State Level, Each individual wise, Category wise, etc

Daily a mail will be sent to the respective people based on the authentication privileges and the reports are also available on the Internet for future referral purpose.



5.4 Results

The application is launched to cover as many as 29,604 pregnant and lactating women belonging to 29 mandals(County / Talukas) which will be tracked in the Software Application with the above said indicators and will be scaled upto State and Country level after the success of pilot project which will be initially launching in one Mandal.

6. Conclusion

This application will help the policy makers in tracking the maternal and child nutritional status, and program implementation by minimizing the error through monitoring the manual process. This is an ongoing program as a part of senior author PhD work To enhance the quality and acceptability of nutritional food by the pregnant and lactating women and their enrollment in declining anemia and under nutrition by consuming 90+ IFA tablet, and to receive regular health checkup and immunization, resulting in reduction of IMR, MMR and reduce the prevalence of low birth-weight.

References

1. thehindu.com/news/national/poverty-child-maternal-deaths-high-in-india-un-report/article6188227.ece.
2. en.wikipedia.org/wiki/Malnutrition_in_India.
3. ap.gov.in/Other%20Docs/HRD%20Final%20White%20Paper%20-%2031Jul14.pdf.
4. indiaenvironmentportal.org.in/files/file/mdg_2014%20India%20country%20report.pdf.
5. Source Chen an Ravalion (2007) <http://www.poverties.org/poverty-in-india.html>.
6. who.int/mediacentre/factsheets/fs348/en/.
7. downtoearth.org.in/content/mdg-report-2014-india.
8. planningcommission.gov.in/plans/stateplan/Presentations13_14/andhra2013_14.pdf