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Impact of Community Managed Nutrition cum Day Care Centers on IMR, MMR and Malnutrition: an empirical case study in Srikakulam District, India

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Abstract: India gives utmost importance to alleviate malnourishment, health problems in order to reach low Infant Mortality Rate (IMR) & Maternal Mortality Rate (MMR) as indicated in Millennium Development Goals (MDGs) by 2015. Society for Elimination of Rural Poverty (SERP), Andhra Pradesh with the support of World Bank has brought a unique model namely Community Managed Nutrition cum Day Care Centres (NDCCs) into practice to provide decentralized cooked supplementary food to pregnant women, lactating mothers and children below 3 years. A study has been conducted recently on functioning and impact of NDCCs in Srikakulam District to assess its impact on IMR, MMR and malnutrition. This study analyzes the quantitative facts and also highlights the result of the Community Managed NDCCs in achieving the health related Millennium Development Goals. This study also gives insights to the policy arena to achieve the health MDGs in Andhra Pradesh.

Index Terms: Nutrition cum Day Care Centers, Community Management, IMR & MMR, Millennium Development Goals

I. INTRODUCTION

In many developing countries majority of women have lower status to men- occupying lowest paid jobs, insecure positions requiring the least skill. They are provided less educational opportunities compared to men which results in lower female literacy rates. For instance globally it is estimated that 32 % of women are literate, vs. 52% for men (UNESCO,1987).

Plenty of evidences documented that girls receive less nutrition both quantitatively and qualitatively due to society's preference for boys. A review of this subject concludes that "sex discrimination in nutrition and health care appears to increase girls' vulnerability to infectious diseases" (Waldron, 1987).

The recent Global Hunger Index 2012 (GHI) has been released by International Food Policy Research Institute puts India under the alarming zone with 23 % hunger level which is calculated on the basis of three important variables: under-nourishment, underweight of children and child mortality (under five). Other surveys show that under-nutrition in India has 48% of malnourished children and the country stands above the

neighboring Asian countries of Bangladesh and Nepal in terms of higher percentage of malnutrition. Andhra Pradesh state accounts for 25%-34% of children with problem of underweight.

"Next to young children, pregnant and lactating women are nutritionally the most vulnerable group, especially in the developing regions of the world, and yet comparatively little is known of their special nutritional needs." (WHO, 1965). The decade of 1976-85 was selected the United Nations Decade for Women. Following this, many countries including India were encouraged to give utmost consideration to women's holistic development.

Government of India has adopted National Development Targets which are in line with – and at times more ambitious than – the Millennium Development Goals (MDGs). The MDGs laid down by the United Nations aim for a reduction in maternal deaths by 75% to 109 (MMR) between 1990 and 2015 in India which requires a reduction rate of 5.5% per year to achieve the goal. At the current rate of decline in major health indicators, there is a fair chance that the MDGs would be missed as the MMR (per lakh live births) is 134 as against the national average of 212 and target of less than 100 by 2015; and the IMR (per 1000 live births) is 46 as against the national average of 50, far behind the target of 23 as per the MDGs. Similarly, over 42 per cent children are malnourished and 59 per cent pregnant women are anaemic in the State.

The Andhra Pradesh government has initiated integration of programmes of key departments to improve health, nutrition, water and sanitation services offered to women and children. It has also initiated convergence strategy called "maarpu" between

the health department and Integrated Child Development Scheme (ICDS). It has identified some of the important health indicators for reduction of MMR, IMR and malnutrition viz., age at marriage, early registration of pregnancy and births, anemia among pregnant women, institutional delivery, early initiation of breast feeding, complementary feeding, awareness against sex selection abortion, pre-natal & post-natal care and care of adolescent girls.

NDCCs and its strategy

The primary objective of NDCC is to combat the malnutrition and to achieve health related Millennium Development Goals (MDGs) by 2015. SERP is an autonomous organization registered under the Societies Registration Act, 1860 and to act on behalf of Andhra Pradesh for implementation of various developmental activities. Under the Health & Nutrition strategy, the NDCC program is being implemented since 2007 with 4227 Nutrition cum day care centers in 2969 pilot mandals. Further, extensive health & nutrition strategies are being adopted for capacity building of stake holders at mandal and district levels.

II REVIEW OF LITERATURE

An attempt is made to analyses the work done by National Family Health Survey 3 during the past in the related field. According to the NFHS-3, 2005-06, India has lowest child immunization rate in South Asia. But in terms of getting BCG vaccine- in India it is twice than Nepal and five times higher than Bangladesh and 30 times higher than Sri Lanka. It has been said that the chances of immunization for Scheduled tribe children is just 26%. The survey highlighted that just 23.1% mothers received iron and folic acid for at least 90 days in the last pregnancy and also stated that 56.2% of Indian women have Anemia. Finally the survey coupled all the reasons and stressed that 33% Indian women conceive when they are not fit to undertake a pregnancy. In 'The state of the World's Children 2006' UNICEF has stated malnutrition contributes to over 50% of child deaths. 30% of infants born with low birth weight (LBW) across the world were from India (1998-2004).

A study conducted by Ambpali Hastkargha Evom Hastshilp Vikas Swavlambi Sahkari Samiti Ltd. describes that the awareness regarding maternal and pre-natal, post-natal health care, baby feed at the village level is less and recommended for conducting awareness camps that would be associated with other departments and NGOs so that the resource could be utilized effectively. A study by M.Prakasamm (2009) pointed out that the Government of India has not yet focused on maternal health-considered as secondary prioritized issue and that has very narrow level of promoting institutional deliveries.

The Annual report on health by the Ministry of Health and Family (2010) estimated that over 40% of children and 36% of adult women are classified as undernourished. The Ministry has specified the reasons for such high levels of malnutrition and anaemia. And the multifaceted reasons would be poverty, gender inequity, specific dietary patterns and recurrent illness and all these acting in conjunction. It has been stressed very much that the gender discrimination contributes to malnutrition levels by early age of marriage which leads to reduced access to nutrition during critical periods like pregnancy and lactation.

III OBJECTIVES OF THE STUDY

a. To know the outcome the NDCCs
b. To know the levels of community participation in running the NDCCs
c. To compare NDCCs with other program in order to understand the effectiveness of the NDCC on IMR, MMR and Malnutrition
d. To suggest effective ways and means for health related policies

IV RESEARCH METHODOLOGY

This descriptive study was conducted based on two types of data, namely- primary and secondary. The main source of primary data is obtained through pre-structured interview schedule. The secondary data is obtained from Society for Elimination of Rural Poverty (SERP), other Government departments and institutes. The researcher has also collected secondary data from various publications, reports and reputed journals.

Primary Sources

An in-depth study of 20 NDCCs in Srikakulam District was conducted through pre-structured interview, schedule and Focus Group Discussion (FGD) with beneficiaries to gain specific insights into the functioning of the NDCC with special focus on IMR and MMR. For facility assessment, a pre-determined questionnaire was prepared for FGD.

Secondary Sources

The data between 2008-12 from SERP, Andhra Pradesh were collected to assess the outcome of the NDCCs and also to compare status of IMR and MMR in NDCCs with that of Southern states of India.

V. SAMPLING

Geographically Srikakulam District is selected as study area in which 200 NDCCs are functioning. As a sample size, 20 NDCCs have been selected through drawing system which is part of simple random sample method to conduct an in-depth study.

VI. STATISTICAL TECHNIQUE

The Statistical Package for Social Science (SPSS) has been used to organize the data that is being collected through primary and secondary sources and also to analyze and interpret quantitative data

VII MAIN FINDINGS

Findings related to safe deliveries and babies born with more than 2.5 kg in Nutritional cum Day Care Centers (NDCCs).

Table I : Delivery Status of NDCCs in Andhra Pradesh – 2008-12

Period	No.of Deliveries	Safe deliveries	Babies born with more than 2.5 kg
2008-09	8570	8301	7158
2009-10	8917	8156	6642
2010-11	10658	6623	5491
2011-12	18296	14173	11724
2012-13	28636	25278	19279

Source: Misreport, SERP: http://www.serp.ap.gov.in/HN/

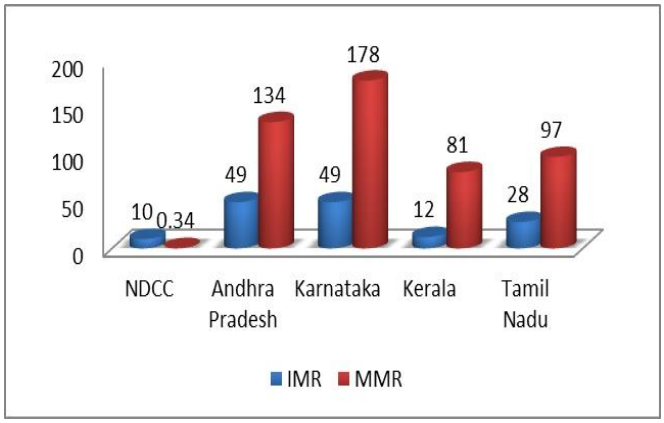
It is very essential to understand from table I that the number of deliveries has been increased from 8570 to 28636 since 2008. The highest percentage of safe deliveries (96.8 %) has been recorded in 2008-09 and the lowest percentage of safe deliveries (62.14 %) has shown in 2010-11. The safe deliveries increased from 2008 due to increased number of NDCCs. Again the percentage of babies born with more than 2.5kgs weight was highest (83.5 %) in 2008-09 and that was lowest in 2010-11. Taking 2012-13 statistics alone, out of 28636 deliveries, there are 19279 (67.3%) babies born with more than 2.5kg which indicates that NDCC encounters malnutrition very effectively.

Table II: Delivery Status of NDCC in Srikakulam District – 2008-2012

Period	No.of Deliveries	Safe deliveries	Babies born with more than 2.5 kg
2008-09	2112	2102	1893
2009-10	2105	1903	1585
2010-11	1057	756	701
2011-12	734	551	561
2012-13	822	770	648

Source: MIS Report, SERP: http://www.serp.ap.gov.in/HN/

As the year 2008-09 is compared to the year 2012-13, it is observed that number of deliveries from the beneficiaries of NDCC in Srikakulam District has been decreased , gradually the safe deliveries and babies who born with more than 2.5kg have also decreased.



Source: Innovations in Development (2012), Ministry of Finance Department of Economic Affairs and the World Bank in India, issue 6

The above figure describes the facts of IMR and MMR in Southern states in comparison with that of NDCCs in Andhra Pradesh. It demonstrates that the IMR rate in NDCC between 2007-11 was just 10 where as in Andhra Pradesh state it is 49 out of 1,000 live births. The IMR status in NDCC is always low when compared to that of other Southern states in India. In fact, the study looks into the deeper consideration of area of coverage and number of centers run by the particular programs. Through Health and Nutritional Component, there were 4,200 NDCCs functioning under SERP in 22 districts in the state of Andhra Pradesh and through Integrated Child Development Scheme (ICDS) there were 73,944 Anganwadi Centers (AWCs) functioning in 23 district in 2010. Logically, 4,200 NDCCs may not be compared with 73,944 AWCs. But it can be taken as a pilot or an experiment to study the impact of community managed nutrition cum day care centers on IMR and MMR.

The NDCC model is a community driven concept in which Self-Help Groups (SHGs) participate at every phase of running the centers. Village Organizations which were formed by women SHGs are given responsibility to manage

the NDCCs and here the SHG member and beneficiaries monitor the quality of food and other matters of running the centers where as in ICDS scheme community participation is limited. In AWCs, we may ensure distribution of food but we are not sure that the distributed food is being consumed by pregnant women. Hence, it is very painful to conclude on the status of IMR and MMR

Table III Weight gained in pregnant women and newly born babies in NDCCs in Srikakulam District

Pregnant women weight gained from 35kgs in NDCCs	**Frequency**	**Percent**
35-40 kg	3	15
40-45 kg	1	5
45-50 kg	9	45
above 50 kg	7	35
Weight of the newly born baby in NDCCs	**Frequency**	**Percent**
Below 2,5 kg	1	5
2.5 kg	6	30
3 kg	11	55
3.5kg	2	10

The above indicators show that NDCCs are potential to improve the nutritional status of pregnant women and children below 3 years and it is contributing well during the crucial period. During pregnancy, women are being provided nutritional food for three times in a day in NDCCs and also given awareness on reproductive health. The Health activist (HA) of NDCCs advises pregnant women to avail health facilities such as immunization, Health checkup, medicines, nutritious diet. Pregnant women are provided with a Mother and Child Protection Card (MCP card) in which one can find the due-date of delivery, weight of the pregnant women, address of nearest primary health center, emergency contact numbers such as that of hospital, ambulance.

The Health Assistant will take enrolled pregnant women to the hospital for delivery as she knows the complete history of pregnant women including delivery date. After delivery, again the lactating mother and child get balanced diet for 3 years. The weight of mother and child are being checked and is recorded in the NDCCs.

From table III it is very clear that weight of the pregnant women has tremendously increased due to complete care and service provided through NDCCs. Significantly, 45 percent of pregnant women gained weight from 35kg to 45 kg and more than 50kg weight have been gained by 35 percent of the pregnant women in NDCCs. Similarly 30 percent of the babies' weight at birth was 2.5 kg and 55 percent weigh 3kgs. Significantly, 10 percent of new born babies have 3.5 kg of weight. It has been observed that above 90 percent of the children gained sufficient weight in NDCCs

VIII Community Participation in NDCCs

The NDCCs are based on community felt-need, interest of the communities generates through Conscientization process, community-owned, and community supervised. NDCCs have been started on the Strong social groups of women's Self Help Groups (SHG), their village Organizations and mandal samakyas that have been established across the state over the past 16 years. This program has been felt as one of the most important nutritional programe that could be managed by community itself and here the local women act as leaders, mentors, and trainers. Hence, the NDCCs have been successfully running and helping to combat the malnutrition as well.

IX Policy Analysis and Suggestions

Analysis of the root causes for malnutrition in rural India shows the lack of awareness on nutrition and type of food that need to be consumed during the crucial period (9 months pregnancy and children up to 3 years). The study has explored factors affecting the status of the malnutrition in Andhra Pradesh, India. Poverty, conservatism, negligence in securing nutritional food during pregnancy that leads to malnutrition among rural women and children below 3 years. It is a time for policy maker to come with policy that where it is possible to provide quality nutritional food as well as education on reproductive health so that pregnant women will sensitize themselves about diet and nutritional pattern during their pregnancy.

It is quite hard for government alone to provide nutritional diet to all 16 percent of malnourished people in the world. Hence, it is necessary to bring decentralized health policy frame work through which community participation can be part of entire programmes so that desired objectives can be achieved easily.

Interventions by government need to be evaluated in terms of their cost –effectiveness and delivery mechanism on particular program (ex: ICDS, IAH, NDCC).

In order to curb the malnutrition in India, it is necessary to bring a national food and nutrition security policy with public-private partnership.

As of now, the food security bill has not been passed in Indian Parliament through which the government aims to provide subsidized food grain to over 62 per cent of the country's population

X Conclusion

Through this study, it has been observed of community partnership in maintenance and delivery of the nutritional food. SHGs participate merely at each of the phases of implementation and have seen the results in terms of minimizing the IMR, MMR and Malnutrition in Andhra Pradesh where the NDCCs function.

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