

Review article

Quality Assessment of Maternal and Child Health Services in Health and Nutrition Day (VHND/UHND) in India- A Literature Review

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ABSTRACT

Background: Maternal and child under nutrition remain one of the highly pervasive and damaging conditions in Low Middle income countries. To improve the situation, Govt. of India initiated 'health and nutrition day' as 'Village Health Nutrition Day' & 'Urban Health Nutrition Day'. But there is limited evidence available in respect of health nutrition day both in terms quality of services. A literature review was conducted to understand the overall scenario.

Methods: Electronic databases (PubMed, Google-scholar, MedLine) were searched. Eight articles were retrieved as per inclusion criteria.

Result: No studies reported 100 percent availability/ estimation of hemoglobin test for pregnant women. Children weighing services were also not available /done completely in all sites studied.

Conclusion: notable gaps were documented in maternal child health services in health nutrition day. Considerable efforts are needed to fill up such operational gaps.

Key words: "fixed nutrition health day", "Mamta-diwas", "quality assessment" "VHND", "UHND".

INTRODUCTION

Maternal and child under nutrition remain one of the highly pervasive and damaging conditions in Low Middle income countries causing approximately 3.5 million deaths worldwide. Globally nearly 35 percent of the disease burden in children less than 5years of age and 11 percent of total global disability adjusted life years (DALYs) is due to maternal and child malnutrition. ⁽¹⁾

Under nutrition persists throughout life cycle and beyond because underweight mothers are more likely to give birth to underweight child, perpetuating the transmission of under nutrition across generations. ⁽²⁾ Besides death, other adverse effects of under nutrition in children include delayed physical & mental development, recurring illness, poor cognitive development and poor school performance all of which ultimately reflect in poor

working capacity. Thus undernutrition manifests in different forms in children and the most prominent effects being wasting, stunting and underweight. ⁽³⁾

Vitamin A, iodine and iron are the most important micronutrients. Their deficiency possesses a great threat to the health of children and pregnant women worldwide. Anemia mainly the iron deficiency anemia affects not only low and middle income countries but high income countries as well and has been established as huge public health problem. ⁽⁴⁾ Severe iron deficiency anemia is associated with 115000 maternal deaths annually during childbirth. ⁽¹⁾ High proportion of women become anemic during pregnancy in both developed and developing countries as many of them are already anemic at the time of conception. ⁽⁵⁾

In India, according to National Family Health Survey-4, an overwhelming

50.3 percent pregnant woman of age 15-49 years are anemic with hemoglobin levels of less than 11g/dl. Further prevalence of under nutrition among children under 5 years of age is 38.4 percent for stunting, 21 percent for wasting and 35.7 percent for underweight. ⁽⁶⁾

Strategies to combat under nutrition are generally focused on pregnant and lactating women, infants and young children. To deliver such strategic services to the pregnant lactating women as well as infants and young children the government of India launched Village Health and Nutrition Days (VHNDs) as a major initiative to improve access to maternal and child health care services at the village level VHNDs are intended to provide a basket of health and nutrition services along with counseling to the community on a pre-designated day, time and place, in every village throughout the country. ⁽⁷⁾ Later in the line of VHND, National Urban Health mission also launched Urban Health and Nutrition day to meet the health need of urban population. ⁽⁸⁾

Significance of this review

Even though 'health and nutrition day' has been in operation since 2005 in villages as village health nutrition day (VHND), very few studies have assessed the quality/availability of services that are being provided in VHND. Similarly there is limited evidence of research done in respect of urban health nutrition day (UHND) in terms quality of services.

In order to understand the overall scenario, we conducted an extensive literature review to present the existing evidence on the availability and practice of specific services in 'health and nutrition day', related to maternal anemia and child under nutrition from different parts of India. The primary goal of this review is to provide precise and relevant information on the above mentioned aspects of 'health and nutrition day' (V/UHND) in India to the policymakers and determine the aspects where specific improvements are needed.

METHOD

An extensive literature searched was performed focusing the objectives of this study using electronic databases like PubMed, Google scholar and MedLine. Literature were searched using various combinations of MeSH terms of key words "village health nutrition day", "fixed nutrition and health day", "Mamta diwas", "quality assessment" "outreach session", "National Health Mission". Freely accessible articles published in English without any year restriction were retrieved.

Inclusion criteria: We included studies that focused on the services related to maternal anemia and child under nutrition like hemoglobin estimation (both availability and practice), distribution of iron folic acid, calcium tablets, growth monitoring and anthropometry, nutritional counseling (Nutritional health education and demonstration).

Exclusion criteria: Studies that focused on aspects other than our objectives, for example studies focusing on interdepartmental convergence, knowledge assessment studies, before-after capacity building studies, studies on any area-specific fixed day nutritional project/maternal health service project which's not designated as Health Nutritional Day as per National Health Mission guidelines were not included in this review.

RESULTS

We identified 8 published articles as per our inclusion criteria, from different locations in India. Three studies are from Odisha, two studies each from Gujarat & Uttarakhand and one from Rajasthan.

The studies are discussed below:

In Orissa, the technical and management support team to the government collected data from six operational districts in year 2011 where they found hemoglobin test, IFA distribution were provided to less than 40 percent of pregnant women. Asymmetry was also found in actual weighing of children and growth chart monitoring. Nutritional health

education and demonstration (NHED) session were held only in 56 percent AWCs. Also out of total beneficiaries attending VHND, only 44 percent attended the NHED session. Lack of initiative in conducting NHED was observed in several VHND sites. ⁽⁹⁾

In another study in Odisha, by Tripathy (2014) et al where they observed 10 percent of the VHNDs randomly selected from the micro plan and a total of 21 VHND were observed. Weighing scale for children 76.2 percent were found in and hemoglobin meter in 66.6 percent. Hemoglobin estimation was done in 61.9 percent sites. IFA tablets were being provided in all the sites. Weighing of the children and plotting the weight in the growth card was found in 71.4 percent and 52.4 percents of the sites respectively. In 80.9 percent of the sites, counseling related to health and nutrition was provided. ⁽¹⁰⁾

Ninama et al conducted a cross sectional survey in the Rajkot district of Rajasthan to assess the availability and quality of service. Using multistage sampling method, primary health centers (PHCs) were selected and under these PHCs, a total of 14 VHNDs were observed. Availability and quality of services were assessed using a pre-validated check list prepared from guidelines. The authors found that new born and child weighing scale was present in 78 percent of the session sites. Around 20 percent of the mothers, who attended the VHND, were told about the importance of iron folic and calcium tablets but information regarding the side effects tablets was lacking. It was found that only 26 percent received the nutritional counseling of any kind. Overall nutritional advice was given to less than half of the beneficiaries. Moreover no information was provided on nutrition supplementation. Authors concluded that information and advices about nutrition, side effects of iron and calcium tablets were lacking mostly and recommended strengthening of services through trainings and refresher course. ⁽¹¹⁾

During the assessment of MAMTA DIWAS in the urban areas of Surat, Gandhi et al observed around 20 urban health centers of Surat corporation areas. Out of the total children observed, growth monitoring was done in 60 percent of children. Nearly 88.5 percent of the total ANC observed were given IFA tab. Health and nutritional advice were given to 90.16 percent of the ANC observed. However in terms of session sites only in 8.11 percent sites anemia examination was done; IFA tab was distributed in 8.11 percent. Nutritional advice was given in 60.81 percent. ⁽¹²⁾

In another observational study in Uttarakhand by Semwal et al assessment of the effectiveness of VHND in addressing health and nutritional needs of pregnant women and children less than 5 years was studied. The study was conducted in 8 different villages in Bahadarabad of Haridwar in Uttarakhand. The study documented lack of lack of organizing education and counseling session on nutrition; limited facilities for measuring height, weight of pregnant women, infant and children. Sessions were also facing severe crisis of supply of IFA. The authors found that IFA distribution was only 40 percent. Only 15 percent of VHND sites had growth monitoring, similarly new born weighing machine was available only in 15 percent of the sites. Hemoglobin examination was done in 20 percent of the sites and counseling on nutrition and hygiene was provided in 15 percent of the sites. ⁽¹³⁾

Pati S et al and colleagues conducted an observational study in Bolagarh in Khorda district of Odisha. Eight VHND sessions were observed. In majority of the session sites ($\geq 75\%$) adult and child weighing machines were found to be available. Albeit hemoglobin estimation was done in 75% of the sites, IFA tablets were distributed in all VHND sites. No data was presented regarding the weighing of children. Nutritional health education and demonstration (NHED) was not practiced in three quarter of the session sites. ⁽¹⁴⁾

Another study by Mehta K et al conducted process evaluation of maternal health care and a total of 17 urban health and nutrition day session sites were observed in Vadodara city, Gujarat. The evaluation found that, IFA tablets were provided in 52.9 percent sites. In 70.6 percent sites, nutritional counseling was provided to pregnant women. As the study was conducted for maternal health care assessment only, no data was captured for child health care. (15)

Saxena V et al conducted a cross sectional survey at Uttarakhand in the 3 districts of Nainital, Tehri-Garhwal and Chameli. They observed a total of 24 VHNDs which were selected by multistage stratified sampling technique to assess the availability of services. A pre-validated

checklist (quantitative data) was used for assessment. Authors found that hemoglobin testing was done only in 29.17 percent sessions. Nearly 79.17 percent of pregnant women were informed and 62.5 percent were counseled about health, hygiene and nutrition. Growth monitoring of children was conducted at less than 1/3rd of the VHND sites. Weighing scale was available in half of the sites. Parents' counseling for appropriate nutrition for children was conducted only at 1/5th of the sites. Authors concluded that services were unavailable in most of the VHND sites and indicated that the need for inter sectoral convergence especially with ICDS department for better service availability. (16) Table 1 & 2 comprised of the observations in different studies.

Table1: Authors and their observations regarding maternal health services.

Authors ,study site (year)	Observations			
	Availability of hemoglobin estimation facility	Hemoglobin was done	IFA distributed	Nutritional advice given in /to NHED session held in
Technical & management support team, Orissa (2011)		<40% pw	<40% pw	56% sessions sites
Tripathy et al, Odisha (2014)	66.6%	61.9%	All session sites	80.9% of session sites
Ninama et al, Rajasthan (2015)		No	40 % of session sites	<50 % of the participants received nutritional advice
Gandhi et al, Gujarat (2015)		8.11 % of session sites	8.11 % of sites & 88.5% of total ANC observed	60.81% session sites
Semwal et al, Uttarakhand (2016)		20 % of pw	40% of pw & lw	
Pati S et al, Odisha (2016)		75% of session sites	100% sessions	25% of session sites
Mehta K et al, Gujarat (2016)			52.9 % of session sites	70.6% of session sites
Saxena V et al, Uttarakhand (2017)		29.17 % of session sites		62.5 % of pw

IFA: Iron folic acid, NHED: nutrition health education and demonstration, ANC: Antenatal chek up, PW: pregnant women, LW: Lactating women.

Table2: Authors and their observations regarding child health services.

Authors ,study site (year)	Observations			
	Newborn weighing scale	Weighing scale for children present	Growth monitoring done in	Plotting in the growth chart
Technical & management support team, Odisha (2011)				
Tripathy et al, Odisha (2014)		76.2% of session sites	71.4% of session sites	52.4% of session sites
Ninama et al, Rajasthan (2015)	78% session sites	78% session sites		
Gandhi et al, Gujarat (2015)			60% of children observed	
Semwal et al, Uttarakhand (2016)	15 % session sites		15 % of beneficiaries	
Pati S et al, Odisha (2016)		≥ 75% of session sites		
Mehta K et al, Gujarat (2016)				
Saxena V et al, Uttarakhand (2017)		50 % of session sites	< 33.33 % of session sites	

DISCUSSION

Health and nutrition day (VHND & UHND) is one of the platforms for delivery of maternal and child health services at the community level. This literature review presents the existing evidence in 'health and nutrition day' service provisions in the areas of maternal anemia and child under nutrition. Our review of literature revealed a big gap in the expected and actual service delivered at the 'health and nutrition day' session sites.

Most of the studies reviewed were observational studies and employed standardized tool for quantitative assessment of the services provided in 'health and nutrition day'. None of the studies reported 100 percent availability of hemoglobin estimation facility which is crucial in detection and treatment of maternal anemia. It was found that availability of hemoglobin estimation facility was only 70 percent as reported in most of the studies. In most of the studies it was observed that nutritional counseling was vastly neglected at the 'health and nutrition day' session sites. Regarding iron folic acid tablet distribution only two studies have reported distribution of iron folic acid tablets in all the observed 'health nutrition day' sites. Such findings revealed a huge gap in the intended and achieved target of 100 percent distribution of IFA tablets to all the beneficiaries. This finding is also in concurrence with the findings of a community based survey. In a community based survey on awareness and utilization of 'village health and nutrition day' services by Baruah K et al, receipt of IFA tablets was found to be as low as 31 percent and only 44 percent of beneficiaries attended the nutrition education sessions. ⁽¹⁷⁾

In case of child under nutrition, availability of child weighing machine and actual weighing practice was found to be inadequate. Growth chart monitoring was also found to be inadequate in almost all of the studies. Baruah K et al also found in their community based study, that in case of child growth monitoring nearly 77 percent

mothers reported that their infants were not weighed; or the weights were not plotted in the growth chart. Moreover there was also lack of growth monitoring in the vulnerable age group of 0-3 years. ⁽¹⁷⁾

'Health and nutrition day' is being operational nationwide, over the decades, the services provided are suboptimal according to our literature review points out. This study provides a snapshot of the health and nutrition day service quality aspect nationwide and the importance of the findings is that being a flagship scheme to provide basket of care to various groups of beneficiaries, notable gaps are found in the areas of nutritional counseling, provision of hemoglobin estimation facility, provision of child weighing and child growth monitoring services, with are to be filled with appropriate measures.

CONCLUSION

Despite of the existence of scheme like fixed 'health and nutrition day' (VHND & UHND) which aims to deliver comprehensive health and nutrition services through community involvement, the expected outcomes are yet to be achieved. As routine health information system doesn't capture any data on monitoring the sessions, it is very difficult to supervise the progress and improvement of these sessions. Our review of literature indicates that considerable efforts are needed to fill the operational gaps. Certain essential steps should be taken immediately to maintain and improve the quality aspects of the 'health and nutrition day'. We recommend regular monitoring of the session sites by the respective programme managers and sectoral medical officers, resource mobilization at each level to ensure availability of facilities in the session sites, regular feedback to the frontline workers with supportive supervision, ensuring health committee member's participation in the sessions to facilitate community mobilization and finally and most importantly strong leadership and advocacy of the issues related to health and nutrition

day could be taken up.

Conflict Of Interest: None.

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