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Convergence in Nutritional Interventions in India: Enablers and Inhibitors

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ABSTRACT

Malnutrition is a multifaceted problem needing a multisectoral response to draw upon synergies across policies and programs. It remains one of the most serious public health challenges. Decades of policy and programmatic efforts have been made to tackle the continuing challenge of malnutrition. However successful implementation of these programs needs inter-departmental convergence, especially at the village level. Therefore, research was undertaken using a mixed method design with the objective of exploring the existing convergence through Village Health, Sanitation and Nutrition Days (VHSNDs) in selected tribal blocks of Maharashtra. Data was collected from frontline workers (FLWs), with service users and VHSNDs were observed. The study provides evidence-based practices of convergence among health and nutrition department and assess the applicability of the strategies formulated under the National Nutrition Mission (NNM) in tribal areas from the state of Maharashtra in India. It would inform policy makers about the enablers and inhibitors of implementing nutritional interventions to address systemic gaps.

1. Introduction

Nutrition and health status of any country reflects its status of development. According to the 2021 Child nutrition report (UNICEF, 2021), 149.2 million children under the age of 5 are stunted. The Covid-19 pandemic and associated lockdown policies have globally disrupted nutritional services and food security, disproportionately affecting billions of populations, especially marginal social groups, like tribals, children and women. Despite decades of policy and programmatic efforts leading to India's substantial progress in health and mortality indicators, nutrition indicators like stunting and anemia are far worse, especially among vulnerable groups like the tribals (IIPS & ICF, 2021). The process of globalization led to systematic dismantling of programs and policies directed towards vulnerable groups, accentuating their poverty, morbidity and mortality, resulting in tribals disproportionately experiencing morbidity and mortality, both in scale and intensity (Coburn et al., 2015; Leach et al., 2017; Thomson et al., 2017). India with 8.6 percent of its population being scheduled tribes, has the world's second largest tribal population (Office of the Registrar General & Census Commissioner, 2011). Although the Constitution of India protects the rights of the

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tribals through special provisions for scheduled tribes, however, centuries of exploitation, marginalization and neglect still resonate in their lives. The tribals in India mostly live in difficult-to-access terrains, facing a range of inequalities in terms of land alienation, access to health care, nutritional services, educational facilities and other social sector schemes due to poor policy responses, resulting in malnutrition, hunger, increased mortality and morbidity (Xaxa, 2014, Sunu et al., 2024). Over the years, mortality rates for under-5 years tribal children have not declined remarkably, for instance it was 40 deaths per 1000 live births in 2004-05 and it declined to 30 deaths in 2019-21 as per different rounds of National Family Health Survey (NFHS) (IIPS & ICF, 2021). In terms of health status, there also exists inequality among various social groups. Around 41 percent of under-five tribal children in India is stunted, compared to national average of 35 percent (IIPS & ICF, 2021).

This dismal situation of India's nutritional status is despite of decades of implementing nutritional program since the early 1970's. Supplementary feeding program like Integrated Child Development Services (ICDS) or schemes like Mid-may meal scheme for school going children has tried to combat malnutrition. However, these programs have not been able to make much progress in terms of nutritional security for various reasons like improper policy directives to ineffective integration with other programs like health and poverty alleviation (Prabhu et al., 2017; Fardet et al., 2022). These programs were meant to ameliorate hunger and ensure food security, and thus did not take an integrated and inter-sectional approach to ensure nutrition security making them mostly ineffective.

Malnutrition being a manifestation of complex social, economic and health factors, its intervention needs multi-sectoral collaboration for any meaningful outcome in nutrition indicators. Delivering nutritional (nutrition-specific and nutrition-sensitive) interventions to entire populations requires meaningful coordination of these various sectors to ensure effective delivery of key nutrition-related actions for communities (Vir, 2016). It also needs to be supported by the appropriate tools to enable sectors to better prepare convergent plans and implement nutrition services cohesively. Historically, in India, a major challenge has been in bringing sectors together to deliver for a common goal. However, in recent times, India has displayed a strong commitment to integrate multisectoral convergence into its development agenda, particularly on nutrition, health and well-being. The recent policy initiative which emphasizes the need for a synergistic and convergent planning is the National Nutrition Mission (NNM) or popularly referred to as the POSHAN Abhiyaan. POSHAN Abhiyaan was launched in 2018 to improve nutritional outcomes and to ensure convergence with various programs (MoWCD, 2018). Implementation strategy is to be based on convergence coupled with intense monitoring from national to village level.

The study will explore the different dimensions of convergence among the frontline workers (FLWs) in services delivered by the Department of Health and Department of Women and Child Development – the two departments which implement most of the interventions which has implications on nutritional status of the target population. The findings of the study would highlight the areas of convergence among FLWs, the challenges faced by them in delivering services. The study also interviewed the officials of both the departments and the service users to understand their perspective on the issue of convergence. The paper would identify enabling and inhibiting factors that determine implementation of nutrition interventions in low resource settings, as well as strategies to address the systemic gaps.

2. Literature Review

2.1 Evolution of Convergence in key Nutritional Interventions

Global initiatives. Globally there has been a gaining recognition of intersectoral convergence, especially for effective implementation of social sector programs as envisaged and proposed in all the Sustainable Development Goals (SDGs). It has been widely acknowledged that undernutrition is a multifaceted problem (Smith & Haddad, 2015, Katoch 2022) caused by a set of immediate, underlying and basic causes, thereby needing a multisectoral response to provide an enabling environment for implementation of nutritional interventions. In 1997, the USAID-funded Basic Support for Institutionalizing Child Survival (BASICS) project introduced a new approach to nutrition and health, the Minimum Package for Nutrition, subsequently renamed Essential Nutrition Actions (ENA). The ENA framework represents a comprehensive strategy for reaching 90 percent coverage with high-impact nutrition interventions in order to achieve public health impact. ENA advocated implementation of its activities by health facilities and community groups (Waid et al., 2019).

In 2009, Scaling up Nutrition (SUN) framework was formulated by World Bank which advocated building partnership to achieve greater impact on nutrition indicators (Coile et al., 2021; Kodish et al., 2022). The SUN strategy 2021–2025 (SUN 3.0) envisages coordinated actions of food systems, health systems, social protection systems, actions by the private sector and humanitarian and development actors, and through education, water, sanitation and hygiene (WASH) and climate change adaptation for better implementation of maternal and child nutrition programs (SUN strategy 2021).

Furthermore, with the adoption of the sustainable development goals (SDGs) in 2015, a global push for action and investment was reinforced among the developmental programs. Sustainable Development Goal 2 is specific to nutrition and envisages creating a world free of hunger by 2030 by achieve food security and improved nutrition through multi-sectoral convergence, both at policy and operational levels. (United Nations Development Program, 2015).

National Initiatives. The Integrated Child Development Scheme (ICDS) program of Ministry of Women and Child Development (MWCD) of Government of India, launched in 1975, takes an integrated approach by catering to the health and nutrition needs of pregnant and lactating women and children till six years of age. Since the services offered by the program i.e. in the area of health, nutrition and education, thus the services overlap with other government program such as Reproductive and Child Health (RCH) (Government of India, 2013). The RCH program launched in 1997, also caters to the same target population as the ICDS program, that is pregnant and lactating mothers, children and adolescent girls. The objectives of the ICDS and RCH program are thus intertwined and, so, convergence between the activities of the two programs would thus be mutually beneficial.

The implementation of these two programs at the village level rests on the frontline workers (FLWs) of these two programs – the Anganwadi workers (AWW) from the ICDS programs and Accredited Social Health Activists (ASHAs) and Auxiliary Nurse Midwife (ANMs) from the RCH program. Some of these linkages are recognized in the job descriptions of the FLWs. For instance, AWWs are supposed to provide nutritious food, promote awareness of healthy behaviors among pregnant and new mothers, maintain immunization records, refer sick children to healthcare facilities and encourage mothers to seek antenatal care, while ANMs are supposed to conduct general health check-ups of ICDS beneficiaries, give immunizations, dispense medicines and contraceptives, and provide assistance and guidance to AWWs in the discharge of their health-related duties. However, inspite of the program directives, cross-sector convergence was limited.

An operational research study undertaken in three districts of Odisha (a state in India) to examine the role of intersectoral convergence in delivery of ten select essential nutrition interventions (ENIs) revealed that frontline worker coordination were found to be good for services that are primarily driven by the health department (e.g. ANC and immunization) and are service-specific rather than for services that require more joint planning such as counselling for infant feeding practices, which needs close planning, monitoring and supervision by Department of Health and ICDS. The study states that there exists a need for an integrated approach to ensuring the delivery of all the essential services to the mother-child dyad during the first 1000 days using the continuum of care approach to avoid the current service-specific coordination that prioritizes certain services like immunisation over others (Kim et al., 2017). An exploratory qualitative study among AWWs in Mumbai, Maharashtra, found that due to technical unfamiliarity with "health-sector" issues in the frontline, discomfort with data sharing, and lack of meaningful incentives for joint work were the main factors responsible for lack of systemic convergence with the health department (Ramani et al 2021). The study revealed that current convergences with health sector are more sporadic in nature. Another study undertaken to explore the implementation challenges of the take-home ration (THR) component of the ICDS program revealed that to overcome the supply side and demand side challenges, strong convergence between health and ICDS is necessary (Nair et al 2021).

National Nutrition Mission (NNM) launched in 2018 explicitly recognized the multisectoral nature of the challenge of malnutrition and made "convergence" one of its key pillars. The policy document explicitly states processes of convergence at different levels – from village level to national level through establishment of program coordination committees (Figure 1) **(**Ministry of Women and Child Development 2018). Implementation of program interventions is more prominent at the level of the community. Village Health, Sanitation and Nutrition Days (VHSNDs) is a critical community platform for facilitating convergence among nutrition and health interventions. Although VHSNDs, earlier known as Village Health and Nutrition Day (VHND), was conceptualized under the National Rural Health Mission (NRHM) in 2007, however in most places its implementation was limited to immunization due to lack of convergent actions (Government of India, 2019).

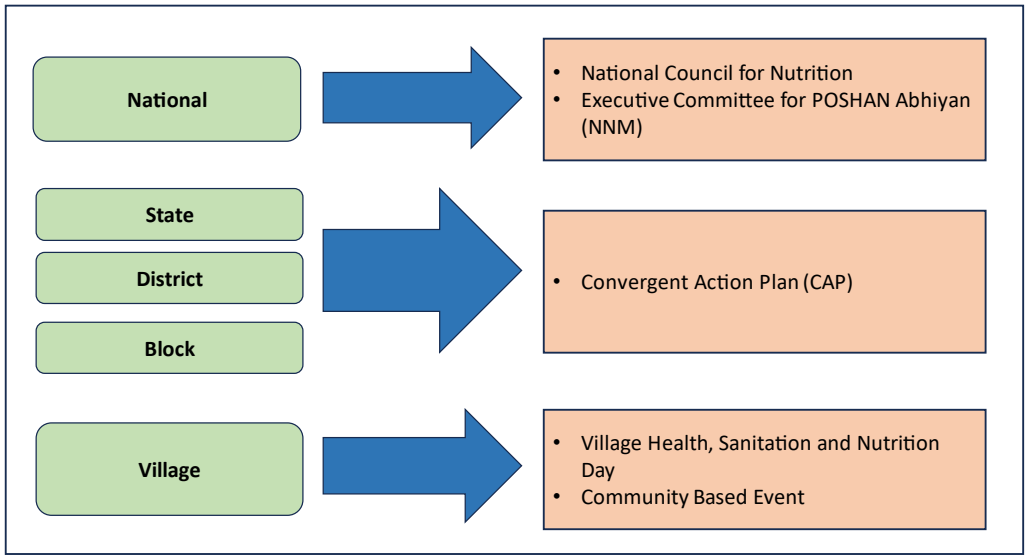

Figure 1. Convergence Platforms of National Nutrition Miss

Transition from 'independent' to 'coordinated' approach in addressing malnutrition. The history of the Indian nutrition and health service system suggests that the idea of inter-sectoral

and inter-departmental coordination was always promoted in Indian policy and planning forums. Since Indias' independence, various health committees that contributed to designing the Indian health service system echoed the fact that nutrition and health outcomes are not only determined by the respective service delivery system alone, but also by multiple factors managed by a range of other sectors, programs and departments. The first such committee-Bhore Committee (1946) identified uncoordinated efforts between the Health, Food and Nutrition and other departments resulting in high infant and maternal mortality and morbidity in India and proposed an integrated, comprehensive primary health care system with inter-sectoral coordination to ensure a healthy society (GOI, 1946). Since then Ministry for Health has proposed coordination of the health sector with other aligned sectors that contribute to public health goals e.g. nutrition, water, sanitation, education and rural development in its policies and programs. With special reference to maternal and child health, it proposed the coordination of the RCH program of the Health department with the ICDS program of DWCD at all levels (MoHFW, 2005). The mechanisms for village level coordination included appointment of selection of Accredited Health Social Activist (ASHA) at every village for mobilizing beneficiaries to uptake the health programs, setting up a Village Health and Sanitation Committee (VHSC) for community level planning and organizing a Village Health and Nutrition Day (VHND) to provide services for mother and child through a single window system. For policy level coordination, National Mission Steering Group was created with Union Minister for Health and Family Welfare as the chairperson (MoHFW, 2012).

Convergence among FLWs – Policy Directives. Frontline Workers (FLWs) are those who take services directly to communities, where access is often limited. India has three types of FLWs - Anganwadi workers (AWWs), Accredited Social Health Activists (ASHAs) and Auxiliary Nurse Midwife (ANMs) - that fall within the purview of two ministries, the Ministry of Health and Family Welfare (MoHFW) and the Ministry of Women and Child Development (MWCD), and are the main pillars for implementing nutritional programs, especially in rural areas. The understanding, communication skills, and approach of FLWs make them the most important component in any government intervention for the health of women and children.

Historically, in India, a major challenge has been in bringing sectors together to deliver for a common goal (Ved and Menon, 2012). However, in recent times, India has displayed a strong commitment to integrate multisectoral convergence into its development agenda, particularly on nutrition, health and well-being. With the formulation of the NNM, VHSNDs are made an important mechanism in implementing nutritional interventions through horizontal coordination among FLWs. The policy document 'National Guidelines for Village Health, Sanitation & Nutrition Day (VHSND)' formulated in 2019 states that "VHSNDs are a powerful initiative that has the potential to expand the reach of these integrated services to millions of households and contribute towards their well-being" (2019, Foreword). An Anganwadi Centre (AWC) established for every 1000 population, under the Integrated Child Development Services Scheme was envisaged to be the center of service delivery to conduct VHSND at the village level, where the FLWs would interface with the community on the designated day. VHSNDs are supposed to act as a single window point of service provision of government programs related to health, early childhood development, nutrition and sanitation services and promote community engagement for improved health and wellbeing. The policy document on VHSND states that it is to be organized atleast once a month in every village and that all the three FLWs are to be present during the VHSNDs. It also lists down roles and responsibilities of the FLWs for organizing the VHSND (2019, p. 24) as mentioned in Table 1.

Table 1. Roles and Responsibilities of FLWs in organizing VHSNDs under the NNM

Phases of VHSND	Anganwadi Worker (AWW)	Accredited Health Social Activist (ASHA)	Auxiliary Nurse Midwife (ANM)
Before VHSND	• Make a list of service users • Prepare the VHSND site • Keep growth monitoring records readily available	• Prepare due list • Match lists of service users with AWW • Mobilize the listed service users, especially those who live in remote parts of the village and marginalized households	• Prepare monthly VHSND plans • Keep all the medicines, vaccines, contraceptives and other supplies
During VHSND	• Ensure weighing of all service users • Individual counseling for growth faltered children • Referring severely malnourished children to the ANM • Counseling on early childhood development	• Check if identified service users attend VHSND • Ensure that malnourished or growth faltered children go for consultation with the ANM	• Provide services – ANC services, immunization, family planning services, adolescent health services • Document all services provided • ANM will help counseling to malnourished child, on common diseases, etc
ANM, ASHA and AWW will jointly provide nutrition and health education and conduct group counseling sessions as per monthly theme			
After VHSND	• AWW updates her records and reports to her supervisor	• Ensure regular follow-up of dropout service users and high risk pregnancies • Convening meeting to review and plan for next VHSND	• Ensure reporting of the VHSND to the Medical officer in charge of the block • Proper disposal of medical waste as well as proper storage of vaccines and medicines

ASHAs and AWWs are selected from the local community through a participative process, thus they act as a link between the formal program delivery mechanism and the community, resulting in better acceptance of their services, as well as they are better positioned to conduct home visits and counsel service users on behavior change related to nutritional habits and norms, enabling them to deliver program objectives. Convergence among FLWs thus have an essential role to play in India's strategy to attain the 2030 Sustainable Development Goals (SDGs), particularly Goal 2 (Zero Hunger) and Goal 3 (Good Health and Well-Being) and it can only happen with effective convergence among FLWs.

2.2 Malnutrition among tribals in Maharashtra

Maharashtra is one of the economically developed states of India, however in recent years it has shown little to no improvement in key nutrition indicators. National Family Health Survey (NFHS), conducted every 5 years in the country shows an upsurge hinting towards reverse in gains made in the past with regard to nutritional status (Figure 2). The prevalence of stunting or low height for age, a symptom of chronic undernutrition, shows an increase from 34.4 percent in 2015-16 to 35.2 percent in 2019-20 among children under the age of five years. Anemia among children (6-59 months) in Maharashtra recorded a jump of over 15 percent moving to 68.9 percent in 2019-21 (IIPS & ICF, 2021). These dismal nutritional status of the children of Maharashtra becomes even more alarming when the data is disaggregated by social groups.

In Maharashtra, about 10 percent (9.35%) of its population belongs to the tribal community (Office of the Registrar General & Census Commissioner India 2011), who have been subjected to centuries of exploitation, marginalization and neglect. The tribals mostly live in difficult-to-access terrains, facing a range of inequalities in terms of land alienation, access to health care, nutritional services, educational facilities and other social sector schemes due to poor policy responses, resulting in disparities in their nutritional, health, social and economic status (Xaxa, 2014; Subramanian & Joe, 2023). Nearly half (47%) of tribal children in Maharashtra under the age of 5 are underweight and more than 75 percent are anemic. Forty one percent of tribal children are stunted and 32 percent are wasted, reflecting the cumulative effects of undernutrition and poor health in-utero and early childhood (IIPS & ICF, 2021). Figure 2 shows the dismal status of tribal children in Maharashtra from the periodic NFHS surveys undertaken by the Government of India. It is alarming to notice that in the last 5 years, status of nutrition among children aged less than 5 years in the worst case has deteriorated as in the case of anemia, or at the most have not improved, inspite of targeted interventions by the government to improve nutritional status of tribal children and women through schemes like APJ Abdul Kalam Amrut Yojana and Integrated Child Development Scheme (ICDS). APJ Abdul Kalam Amrut Yojana launched in 2015 by the Tribal development department of Maharashtra Government which provides one nutritious meal to pregnant and lactating women at the Anganwadi centre (Narnaware, 2021).

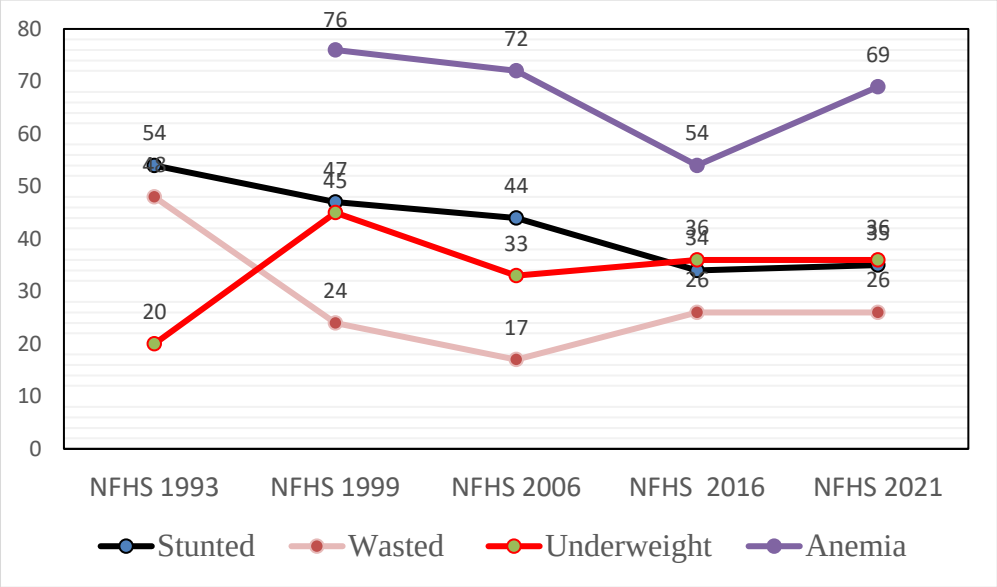

Figure 2. Trend in Child Undernutrition in Maharashtra

With regard to health status of tribal women, there is no large-scale data available on maternal mortality of tribal women. However, it is a well-known fact that early child birth, low body mass index (BMI) and high incidence of anemia are critical reasons for high maternal mortality (Nair et al., 2016), which unfortunately have high prevalence among tribal women. According to NFHS 5, 9 percent of teenage tribal girls had begun childbearing- the highest among all social groups, with 11 percent (6% for other group) and 65 percent tribal women (56% for other group) having low BMI and anemia respectively. World Health Organization (WHO) and national policy documents emphasize on 'continuum of care', however data shows that significant gap remains in delivering services to tribal women especially in terms of antenatal care (ANC), which involves both advice on nutrition as well as services which impacts the health status of the children and mother. WHO recommends a minimum of 4 ANC (Tizazu, 2020) visits in order to ensure effective antenatal care, critical to reduce maternal and child mortality, especially for vulnerable groups, for whom community outreach programs are the

only source of health care. For tribal population in India, this critical care is unreachable for more than 40 percent of tribal women (IIPS & ICF, 2021).

Literature review indicate that while the policy documents and program guidelines recognize the importance of intersectoral convergence and coordination for effective service delivery of nutritional services, at the implementation level there exists significant gap as is evident from the poor service coverage of nutritional interventions.

2.3 Rationale and Objective

While the theoretical underpinnings of convergence in delivering effective nutritional services are compelling, the practical challenges in implementation must be addressed. It is essential to understand the processes of implementation of nutritional and health interventions, as well as identify the mechanisms for convergence and its associated challenges. In this context VHSNDs, a village level platform for convergent actions under the National Nutrition Mission is an important mechanism to address undernutrition. Maharashtra having high level of child and maternal undernutrition among tribal population, including deaths (Rahman 2016; Gangan 2020; Saigal 2022), makes it important to study the existing state of frontline coordination during VHSND to identify the enabling factors for better implementation of nutritional interventions in tribal areas of the state. To fill this gap and gain insights into the convergence mechanism in organizing VHSNDs, a qualitative study was undertaken.

The aim of the study is to gain an understanding of

1. the coordination between the three groups of FLWs - ANMs, ASHAs and AWWs for creating an enabling environment for addressing nutritional interventions through VHSNDs in selected tribal areas of Maharashtra.
2. To identify the challenges faced by FLWs in delivering nutritional services during VHSNDs.

3. Materials and Methods

3.1 Selection of Study Area

Maharashtra is one of the states having high proportion of tribal population (9.35%), more that the national average (8.61%). Maharashtra has 36 districts which is divided 6 administrative divisions. Nashik division is selected as it has the highest proportion of tribal population as per Census 2011(Table 2), and makes it a perfect locale for understanding the importance of convergence in addressing malnutrition in tribal areas.

Table 2. Administrative Divisions of Maharashtra

Administrative divisions	Tribal Population
Amravati division	10.87
Aurangabad division	3.98
Konkan division	7.01
Amravati division	14.42
Nashik division	23.33

Nashik division has 5 districts and of these, two districts – Nashik and Ahmednagar are selected randomly for the study. From each of these two districts, the blocks[1] having the highest proportion of tribal population as per 2011 census were selected for the study. The two blocks

[1] In Indian administrative context, districts are further divided into talukas or blocks

selected for the study are – Peth in Nashik district having 96 percent tribal population and Akole in Ahmednagar district having 48 percent tribal population.

3.2 Sample Selection

This being a qualitative study research participants for interview were purposely selected. As per the government criteria, each village has atleast one AWW and one ASHA (there is 1 AWW and 1 ASHA for every 1000 population), and one ANM for every 5 village. By contacting the supervisors of the FLWs, profile of all FLWs and contact details were gathered. The profiles contained information about age, education, and number of years of working as FLW. The selection of FLWs were purposive as it is a qualitative study, however certain criteria was used i) years of working as a FLW and ii) remoteness of the village from the nearest health facility, a criteria which might influence health care service utlisation for health problems. While selecting FLWs for interview, we ensured that they are able to elucidate different perspectives on the study subject and heterogeneity in the context of service delivery. This was done by meeting the FLWs in groups after shortlisting them from their profiles. We met 3 groups of AWWs and ASHAs and selected 10 AWWs and 10 ASHAs from each block. The selection was done by the researcher, whom she felt will be able to provide rich insights (Table 3 for details of sample selected). The researcher felt that these many interviews from each type of FLWs (AWWs and ASHAs) are enough to achieve data saturation. At the end of each day during fieldwork, the audio files were replayed and a basic categorisation was done and at times the interview guide was revised based on the emerging theme.

For interviewing ANMs, those ANMs were chosen for the study who are posted in the villages of the selected AWWs and ASHAs. This is because it will help to understand the process of convergence between the FLWs. For the same reason VHSNDs of those village were observed. FGDs with service users were also conducted in the villages where it was convenient to gather them for discussion. As interaction with users was only to understand their perspective on convergence among FLWs, so only 2 FGDs in each block was conducted. From each of the selected block in each district, the department heads of both ICDS and Health department were interviewed as they are responsible for planning and monitoring the implementation of programs.

3.3 Data Collection

The data was collected between November 2023 and September 2024. Data from multiple sources was obtained to triangulate the findings. Semi-structured interview guide was used to conduct the interview with the FLWs and officials from the health and ICDS department. The overarching aim of the interviews with FLWs was to understand their role in organizing VHSNDs, role VHSNDs play in delivering nutritional interventions and challenges they face in delivering their role. Interviews with officials were held to understand their perspective on how they view VHSND as a platform for convergence for FLWs for effective service delivery.

Focus group discussions (FGD) were held with the service users using FGD guide. Any women who have a child less than 2 years were selected for the study, as these young mothers interface with FLWs most as part of the ICDS and health programs. The participants were explained about the purpose of the study. Discussions with service users were held to understand their perception about VHSNDs as a service delivery platform. Observation of VHSNDs were undertaken by the researcher to familiarize the natural work setting of the FLWs during VHSNDs and how they interact with the service users.

The interview guides were piloted in the field before finalizing. Interviews were scheduled after consultation with them for their convenience in terms of location and time. All study participants consented to participate in the study and agreed to be quoted. Interviews were

conducted in the local language (Marathi) by the first author, who has a strong background in qualitative research. Interviews were audio-recorded as well as field notes were taken. On an average each interview took about an hour, and were usually conducted in the Anganwadi center or at the block office. FGDs were conducted in the village, mostly in the courtyard of one of the participants. Ethical guidelines of voluntary participation, confidentiality, privacy and voluntary withdrawal were adhered to during the data collection process. Details of data collection process is given in Table 3.

Table 3. Details of data collection process

Department	Type of respondent	No of interviews		
		Peth	Akole	Total
Department of Women and Child (ICDS)	Anganwadi worker (AWW) (every village has atleast one AWW)	10	10	20
	Anganwadi supervisor (Each supervisor has around 30 AWWs)	3	3	6
	CDPO (Child Development Project Officer -Block level head)	1	1	2
Department of Health and Family Welfare	ASHA (every village has atleast one AWW)	10	10	20
	ANM (On an average 1 ANM provides services to 5 villages)	5	5	10
	Taluka health officer (Block level head)	1	1	2
	TOTAL interviews	30	30	60
Service users	No. of FGD with service users (9-10 participants each)	2	2	4
VHSNDs	Observation of VHSNDs	5	5	10

3.4 Data Analysis

The audio records and field notes were anonymized, transcribed verbatim and translated into English. Content analysis of transcripts was undertaken to identify the emerging themes related to convergence among health and ICDS department. The data (notes) was entered in an Excel matrix. Thematic analysis was chosen to analyze the data as due to its flexibility it helps to identify new patterns of practice. Subsequently themes were summarized, coded and findings were presented under appropriate domains. While presenting the data, quotes are presented to illustrate various insights and patterns noted during analysis.

3.5 Limitations

The study was a qualitative study and therefore the conclusions may not be representative of other tribal blocks in the state. The sample for the study being small and purposive, its findings may have selection bias. However, the in-depth nature of the interviews yields key insights into areas of convergence among FLWs at the community level. These insights and concerns can be validated through a large study to guide and address issues of convergence among social sectors delivering nutritional interventions.

4. Findings

4.1 Profile of the FLWs

The FLWs (ASHAs and AWWs) had at least primary education (most had secondary), and were usually residents in the village as was mandated under the government guidelines. ANMs usually stayed in the village of the sub-centre health care facility she is associated with, as is mandated in the government guidelines. Average age of FLWs were 41 and work experience

of 17 years. Except few ANMs, all the other 2 categories of FLWs were from the tribal community.

4.2 Organizing VHNSDs

National guidelines (Government of India, 2019) states that FLWs are supposed to have meeting with mandated village level structures like Village Health, Nutrition and Sanitation Committee (VHNSC)[2], in which the ASHA is the secretary of the committee, and AWWs are members, for planning the forthcoming VHSND. However, in most of the study areas, no regular meetings were held among VHNSC members., Most of the AWWs were in fact not even aware whether meetings happen or not, or who the other members are. Interviews with ASHAs revealed that sometimes when they need to spend money for any activity during VHSND or for any nutritional activity in the village, they contact the chairperson of the VHNSC, who is usually a woman gram panchayat member and discuss the details. An untied fund of Rs. 10,000 is given annually to the VHSNC, which is used for the nutritional or any other health related service. A few AWWs shared that sometimes they approach the ASHAs if they need any food items to be distributed to ICDS service users.

"*I call ASHA when laddoos (sweet made from millets) are to be distributed to the pregnant and lactating mothers. ASHA then buys and gives it to us and then we distribute…"*
a 32-year-old AWW

Although VHNSC as a mandated body is not active, in all the villages, the FLWs coordinate with each other on a regular basis before organizing VHSNDs. Sometimes they meet physically and discuss about the beneficiary lists, division of responsibility, and in other times they coordinate among themselves through mobile phones. ASHAs and AWWs match their service user's lists among each other and coordinate the mobilization. The due lists made by the FLWs are shared among themselves to bring about uniformity and any issues faced in previous VHSNDs were discussed.

Another important activity before VHSND is to inform the service users about date and time and the services they are supposed to get and motivate them to come to the VHSND. With regard to mobilization, ASHAs ensure that all service users in the lists are informed. AWWs also help her in this. Many times, informing service users about the date and time is done through phone one day prior to VHSND. But there are some households, especially those households who are poorer and live on the outskirts of the village or near the agricultural fields where they work as labourers, and in those areas mobile phone networks are poor, ASHAs visit them at their homes to tell them about the time and venue of the VHSND and also the services they are entitled to. FGDs with service users revealed that usually the date and timings of VHSND are fixed in this block, but still as most of tribal households are poor agricultural labourers, for them their daily work and household chores remain the first priority rather than immunization of the child or advise on nutritious food, and so remembering the date of VHSND is not a priority for them. So, when ASHA or AWW reminds them about their entitlements related to nutrition or health, and how counseling sessions can help them to fall less sick, they are motivated to come for the VHSND. Many times, on the day of VHSND, ASHAs accompany many service users who are reluctant to come. One of the major reasons for current success of VHSNDs in the study area is because of their rapport with the community and

[2] VHNSC is a 15-member village level body comprising of gram panchayat (village level statutory institution) members, ASHA, AWW, service users, SHG members and other key members of the village, and 50% of the membership reserved for women and adequate representation from marginalized social groups of the village

increased home visit since the inception of NNM. This encourages women including their family members to accompany them to VHSNDs.

"*ASHAs provide information regarding the date and time of VHSND sessions. The information given during VHSND sessions is very helpful for us. We are told what to do and what not to do*….." – A tribal pregnant mother during FGD

"*ASHAs also assist us to avail our entitlements as per the government schemes* …" A mother with a 2-year-old daughter

VHSND national guidelines states involvement of VHNSC, gram panchayat and self-help group (SHG) members in ensuing promoting VHSND and other community-based nutrition events in the villages, nevertheless the interaction with various stakeholders reveal limited to no involvement of them in VHSND activities in most villages, either in organizing or during VHSND.

4.3 Services delivered during VHNSDs

All the three types of FLWs shared that since the last few years VHSNDs are given lot of importance. VHSNDs are found to be held once a month in all the villages, and in bigger villages twice a month. As VHSNDs were usually held in the AWC, it is the AWW with help from her helper (sahiyika) who prepares the site.

"*My job on VHSND day includes arranging the session site, weighing children*" ……. an AWW from a tribal village.

Observation of VHSND sites, which mostly is the Anganwadi centre, basic amenities like electricity, toilets, and drinking water were available. One VHSND was held in a sub-centre health facility. However, space was an issue in most of the VHSND sites, which is essential to ensure comfortable and quality service delivery. So, in certain instances where many mother and children arrived together, some of them had to sit outside the AWC, which is uncomfortable and difficult, especially in summer and rainy seasons.

FLWs reported that unlike few years back when only immunization was usually the only service rendered through VHSNDs, at present in most of the VHSND more types of services are delivered (Box 1). While importance to counseling regarding nutrition, diet diversity, micronutrient supplementation using audio-visual aids are stressed during VHSNDs, yet during VHSND, providing services becomes the most frequently offered activity.

Box 1. Nutritional and related key health services given during VHSNDs in study area

1. Immunization of children
2. Growth monitoring of children
3. ANC services – Hb testing, weight measurement, TT injections
4. Vitamin A supplementation
5. Deworming
6. Supplementary nutrition (Take home ration)

ANMs and ASHAs said that doctors from the Primary Health Facility or sub-centre sometimes visit VHSNDs.

"*Sessions are planned regularly; VHSNDs are now given lot of importance, unlike earlier when it was mostly limited to immunization sessions.* …" 29 year old AHSA

"*During VHSND we provide health check- up and weight measurement, along with immunisation. Also we give health education*"……. An ANM

Counseling sessions during VHSND: VHSNDs are supposed to have atleast 1 hour of dedicated groups counseling sessions on nutrition (promotion of breast feeding, diet during pregnancy, child nutrition, promotion of local food to improve diet diversity) or on health topics (like importance of IFA tablets, vaccination, institutional delivery, government entitlements etc). However, in all the 10 VHSNDs observed, there was no organized group counseling. In some instances, however, FLWs were seen individually talking to women based on their need like one ASHA was speaking to a young mother about breastfeeding. And in another instance, AWW was seen explaining 2 pregnant women about how to cook green leafy vegetable for better absorption of iron content. In two VHSNDs it was observed that while distributing IFA tablets, the ANM was clarifying how to consume it for better results. During the VHSNDs, it is generally observed that nutrition related information like diet of children, or how to cook the ration that they are getting as part of their entitlement, were given by AWWs only and not by all the 3 FLWs. During interaction with women none of the FLWs were seen using communication materials, although the walls of the AWC have many posters stuck on it containing nutrition and health related information, but FLWs were not seen explaining these posters while giving counseling. However, discussions during FGDs revealed that all FLWs during their individual interactions with service users, especially pregnant women, advice about nutritious diet to them.

"*Anganwadi tai (AWW), ASHA tai and Nurse madam (ANM) tell us what to cook and how to cook for better nutrition during pregnancy. We are benefitted from their advice…"* Service users during FGD

"*Earlier we did not have much information about this (diet and breastfeeding), there were certain myths which were not good for us or our children. For example, we have seen our elder sisters or women in the village not initiating early breastfeeding of the new born child, but now we know that we should quickly start breastfeeding after birth….."* a young mother of 1 year old girl

Attendance during VHSND: With regard to attendance of service users, FLWs were of the view that over the years participation of women from the disadvantaged sections of the society like the tribals has improved. Most of the tribals from the study area are poor and work as daily wage workers. VHSNDs are conducted in the morning hours, thus making it difficult for wage earners to attend them as they will then lose out on their daily wage.

"*I had never bothered much about my health until I attended the VHSND for the immunization of my son. And, when I went there, I was told by the AWWs about the kind of food I should take, where I can get that and what I should do to maintain my own health*," A young mother of a 3-year son from a tribal community

"*Earlier I was reluctant to go to VHSND because I believed that weighing my child will reduce his weight. But when sister didi (ANM) explained to me the importance of getting my children weighed, I was ready to do it…..*" A mother of 2 children from tribal community

Expectation of service users from VHSND: However, not all service users find the services of the VHSNDs satisfactory. This is because of the fact that more importance is given to pregnant mothers and children under two years (in terms of immunization and growth monitoring), so mothers of children who are more than 2 years feel neglected.

"*Importance is not given regarding counseling of mothers of older children……counseling is mostly given to pregnant mothers and those who are breast-feeding"* as revealed by a mother of a 3 years old child.

"During VHSND, adolescent check-ups are hardly done, neither do they give iron pills…… sanitary pads are also not distributed……" a mother of 14 year old out-of school tribal girl

Some service users said that presence of a doctor during VHSND session would be helpful.

"*It will be better if complete examination is done for pregnant mothers, because due to agricultural and household work we don't get time to visit the sub-centre, which is far from our house. Presence of a doctor in the VHSND session would be helpful……*" 23-old pregnant mother said in an FGD session.

4.4 Post VHSND Convergence

FLWs reported that once a VHSND session is over, they match their list of beneficiaries to identify those who did not attend the session. They then decide how to reach out to them, although due to heavy reporting workload, most of the times ASHA and AWW try to reach out to them through phone without actually paying them a home visit. In cases where they notice a particular service user is not attending VHSND for more that 2-3 sessions, they give a home visit sometimes jointly or by ASHA alone. After the session AWW and ANM get busy in filling their reporting formats, which involve both software app (POSHAN tracker for AWWs) and writing report in their file registers, which they then submit to their respective department supervisors.

"*ASHA and AWW came to visit me as I did not go the session. They told me that my child's name was there in the register. They weighed my child, told me how and what complementary food I should give him. They also gave me the ration (food) for my child. They also told me to come to the VHSND next month for immunization and the importance of regular check-up given the fact that he is underweight. I am grateful to them for their services……*"

recollected a mother of an 8-month old tribal child.

4.5. VHSND – A platform for multisectoral collaboration

Even though representatives from departments of including Health and Family Welfare (DHFW), Women and Child Development (DWCD), Social Welfare (DSW), Panchayati Raj Department, Rural Development (RDD), Drinking Water and Sanitation Missions are supposed to be present along with members from VHSNC, self-help groups (SHGs), yet it is observed that in none of the 10 VHNSDs any member from these community structures were present. All three types of FLWs cited that heavy workload and different program priorities are challenges for their effective convergence.

"AWWs are more involved in pre-school activity and preparing cooked meals for children aged 3-6 years, and don't give much time in providing information about improving diet among children aged 0-2 years and pregnant women….." ANM.

In none of the 10 VHSND sites, no supervisor from any department visited the sessions. However, AWWs said that if there is any special program or any special day then the supervisors come to the session. Once the VHSND is over, the AWW and ANM prepare a report and both of them also enter the service data like number of immunizations, number of ANC check-ups, growth monitoring data into their reporting formats and submit it to their supervisors. There are monthly sector (health and ICDS) meetings, where AWWs, ANMs and their respective supervisors along with doctors have meetings to discuss various nutrition and health issues. If there are severe cases of malnutrition that are detected during VHSND sessions, doctors also visit the houses of those children along with the FLWs. This process helps in evidence-based decision making and creates an enabling environment for FLWs to

take suitable actions. Any gaps identified through these data are also discussed at monthly meetings at district and block level. This process of fact find and subsequent action on the feedback have created an enabling environment and have strengthened VHSNDs in terms of service delivery, quality and coverage.

5. Discussion

Historically, the DHFW and DWCD worked toward a common goal to reduce infant mortality, which facilitated coordinated action and effective program implementation. VHSNDs are envisaged based on three important principles: (1) comprehensiveness and integrated service delivery: VHSNDs bring together services related to health, nutrition, and sanitation in a single location; (2) regularity and geographic proximity: on a fixed day every month within the village; (3) financial accessibility: all services offered at the VHSND are provided free of charge. VHSNDs have an essential role to play in India's strategy to attain the 2030 Sustainable Development Goals (SDGs), particularly Goal 2 (Zero Hunger) and Goal 3 (Good Health and Well-Being). (Johri et al., 2019).

Close collaboration among FLWs was observed in planning, conducting and follow-up of VHSNDs and in addressing undernutrition at village level. Mutual understanding of roles and responsibilities were observed. However, except specific cases, meetings between FLWs (Triple AAA meeting) or inter-departmental meeting between ICDS and health department at sector and block level are mostly limited to data sharing and reporting. Poor communication and heavy workload were identified as barriers for convergence in planning and supervision at block level. The study provides evidence-based practices of convergence among health and nutrition department and assess the applicability of the strategies formulated under the NNM related to conduction of VHSND. It also helps identify creative methods of engagement with the community, identify different views, interests and needs of the various stakeholders, and informs the policy makers and program managers to effectively implement nutritional interventions. Some of the enablers and inhibitors of convergence during VHSND is summarized in Table 4

Table 4. Summary of Enablers and Inhibitors of Organizing VHSNDs

Enablers	**Inhibitors**
▪ SDG targets created political will for intersectoral coordination resulting in designing of NNM ▪ Protocol and clear guidelines for FLW roles in NNM documents ▪ More range of services provided leading to better utilization ▪ Demand for services generated and lessening of harmful myths regarding child care practices ▪ Presence of all 3 FLWs – better coordination and convergence of services ▪ Beneficiary mobilization ▪ Skills set – through training on better communication ▪ Clarity in roles – through policy guidelines ▪ Supportive supervision	▪ Timing of VHSND for agricultural labours – not conducive ▪ Emphasis on immunization and ANC - Beneficiary non-attendance / not satisfied ▪ Lack of involvement of VHSNC, PRI and SHG members in ensuring mobilization and better service utilization of VHSND services ▪ Lack of joint training of AAAs ▪ Lack of joint supervision – due to lack of adequate personnel ▪ Lack of joint reporting and monitoring of data – so tensions created when data gathered by the FLWs do not collate

5.1 Lessons Learnt

Promoting nutrition as a development priority among a wide range of stakeholders creates openings for action and sustained attention to nutritional interventions and encourages convergence among concerned departments. The study highlighted mutual understanding of

roles among the FLWs as well as in the policy document, but different priority actions, lack of joint training and planning and review led to challenges in convergent action at the implantation level. An important aspect of creating an enabling environment is to promote accountability to community through local partnership in designing and planning. For instance, NNM guidelines says about promoting kitchen garden (Poshan vatika) to improve diet diversity, however many villages in the study area faces acute water shortage, so there is a need to have local partnerships with civil society, agriculture department and others to create the possibility of putting that idea into action.

Another aspect that needs consideration is the fact that a program whose main objective to improve mother's and child's nutritional status, cannot be gender blind and therefore needs to include the decision makers at the household level as their target population also for effective implementation. It is also critical to revive the VHNSCs to provide oversight and regular guidance to various services delivered through VHSND as per the local context.

FLWs must ensure targeted counseling for each beneficiary through jointly developed awareness material. It is essential to streamline the record keeping and data sharing between the departments to deal with double data entry of the same service user for ICDS and health department. This mechanism will not only reduce the data entry workload of the FLWs, but will also ensure joint monitoring of the data.

India's effort to address undernutrition is undergoing major transition. With the launching of NNM, there has been a high expectation that the reforms undertaken, particularly in terms of improved convergence and participatory strategies, will lead the country in the right direction in its fight against undernutrition. The implementation of VHSNDs in tribal areas of Maharashtra reflects new understanding on how to create an enabling environment to address complex social problems like undernutrition among children and women. Despite its limitations, this in-depth study sought to address the critical gap in development literature in generating evidence of convergence among FLWs in the context of the implementation of nutritional interventions in resource poor settings.

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