Barriers in Management of Malnutrition During COVID-19: Among Children Aged 6 to 71 Months in Buldhana District of Maharashtra in India

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Abstract

Background

The management of moderate acute malnutrition (MAM) in children is crucial to prevent the progression to severe acute malnutrition (SAM). This study aimed to identify the barriers to managing MAM in children aged 6 to 71 months in the Buldhana district of Maharashtra, India.

Method

The research followed a descriptive phenomenological design and involved six focus group discussions with mothers or caregivers of children aged 6 to 71 months, along with 20 in-depth interviews with nutrition rehabilitation services provider.

Result

Several themes emerged from the analysis, causes of child malnutrition such as a low child-caring time for the mother, lack of awareness, cultural beliefs, and poor maternal health. Difficulties were faced during identification, such as multiple rounds of child screening, inadequate treatment during screening, nutrition counselling issues, reduced follow-up visits, and effectiveness of services. Maternal-level barriers encompassed food insecurity, lack of food choice, mismanagement of self-grown food grains, and cultural barriers. The study also identified barriers and suggestions to improve the service, including feelings of shame associated with having children with malnutrition and obstacles in managing MAM. The COVID-19 pandemic had a severe impact on malnutrition management. Providing nutrition counselling to mothers of children with MAM without food supplementation increased the risk of negative outcomes for these children.

Conclusion

The study revealed that both maternal-level and service provider-level barriers negatively affect the management of malnutrition in study area. The government should prioritize and facilitate the integration of supplementary food into existing MAM management practices.

Introduction

The global COVID-19 pandemic has had significant repercussions on numerous nations, especially those already grappling with the challenge of child undernutrition [1]. In India, the primary cause of malnutrition is widely linked to inadequate introduction of complementary foods, particularly in the initial year of a child's life [2]. Failure to adequately address underweight cases in children could potentially lead to severe malnutrition, a life-threatening condition [3]. However, malnutrition has not received adequate attention as a critical public health concern [4].
The supplementary feeding program, a component of the larger ICDS initiative, is tailored based on children's individual backgrounds. Under this umbrella approach, ICDS provides supplementary food to all eligible children, regardless of whether they fall into the Moderate Acute Malnutrition (MAM) or Severe Acute Malnutrition (SAM) category. The impact of COVID-19, such as reduced household income and increased food insecurity, has disproportionately affected children, leading to a heightened risk of undernutrition [5]. The sudden imposition of COVID-19-related lockdowns resulted in the suspension of child supplementary nutrition services, exacerbating children's vulnerability to undernutrition [6].

Nutrition counselling plays a pivotal role in promoting proper feeding practices, diverse diets, and hygiene and sanitation habits [7]. The effects of COVID-19 have contributed to an alarming rise in child malnutrition due to disruptions in dietary diversity, nutrition services, and other essential support systems [8]. Government-enforced lockdowns and stringent quarantine measures have triggered notable shifts in food industry dynamics and dietary behaviours [9–10]. The overwhelming focus on managing the COVID-19 crisis, including healthcare strain and travel restrictions, has further aggravated child malnutrition [11].

Several challenges hinder effective undernutrition management, such as lower food production output and discrepancies in undernutrition definitions and assessment methods, which lead to confusion regarding the inclusion or exclusion of children [12–13]. In India, governmental bodies and numerous non-governmental organizations (NGOs) are implementing various initiatives to combat child malnutrition. Nevertheless, a key strategy akin to the Nutritional Rehabilitation Center (NRC) approach is necessary [14–15]. The Community-Based Management of Acute Malnutrition (CMAM) is crucial for effectively treating all children with Severe Acute Malnutrition (SAM) [16]. The Integrated Child Development Services (ICDS) program offers take-home rations as supplementary nutrition for children under six years of age, pregnant women, and lactating mothers [17]. The poor quality of ICDS, lack of expertise among Anganwadi workers, and inadequate infrastructure constrain the program’s effectiveness [18–19]. The insufficiency of training in malnutrition identification and management remains a major obstacle in malnutrition rehabilitation [20]. Significant weaknesses at the center level, including limited inpatient capacity and an inadequate number of skilled staff in hospitals to treat the high volume of children requiring assistance, further compound the issue [21]. Socioeconomic factors, such as poverty and the exclusion of women from health and education services, contribute to delayed intervention and malnutrition [22]. Additionally, the lack of accessible and nutritious food exacerbates the problems of hunger and malnutrition [23].

**Methods**

**Need for the Study**

The COVID-19 has restricted all the essential services including health services worldwide and very few literature are paying attention to rural maternal health services. However, in the Indian context, limited studies have been conducted on nutrition management services during COVID-19. Worldwide evidence shows that COVID-19 has put a limitation on child malnutrition management. Therefore, this study aims
at understanding the factors contribute as barriers to the child malnutrition management services during the COVID-19 pandemic.

**Study Area**

This study was carried out in the Buldhana district of Maharashtra, situated within the Vidarbha region of the state. The district is divided into 14 administrative blocks, and for this study, the Buldhana, Chikhali, and Sangarmapur blocks were specifically chosen. The topography and population distribution within Buldhana district exhibit significant disparities, with some areas grappling with food security issues primarily due to the rainfed nature of agriculture. The local population is largely engaged in cultivating cash crops such as soybean, cotton, and corn. Employment opportunities in the district are limited due to low levels of industrialization, leading to seasonal migration for activities like sugarcane farming and brick kiln work. The management of malnutrition among preschool children in Buldhana district falls under the ambit of the Integrated Child Development Services (ICDS) program, overseen by the Ministry of Women and Child Development. Anganwadi workers play a crucial role in addressing preschool child malnutrition, including tasks like nutrition counselling and child screening.

**Study Design**

This study used descriptive qualitative design to understand interest of participants such mother or caregiver and AWWs. The study also highlights the perception and barriers of service provider and during the management of child malnutrition during COVID-19 pandemic. Through this approach live experience of study participants have explained with help of thoroughly discussion.

**Study population and sampling procedure**

A total of six focus group discussions (FGDs) were conducted, each comprising 8 to 9 mothers or caregivers with total participation of 55 individuals. To support of FGDs, 20 in-depth interviews (IDIs) were carried out. The primary aim was to gain insights into the current practices of managing child malnutrition at both local and household levels, as well as to assess the impact of the COVID-19 pandemic on child malnutrition management. Participants for the study were selected from the community, specifically ICDS beneficiaries who were mothers or caregivers of children aged 6 months to 71 months. The assistance of AWWs was sought to identify and enroll these participants. The selection of respondents followed a purposive sampling approach, chosen to gather comprehensive and detailed information from the participants. The criteria for selecting respondents were mothers or caregivers of children within the specified age range who were currently experiencing or had previously experienced malnutrition and were actively involved in the state nutrition management program.

**Ethical Consideration**

Study received ethical approval from the Student Research Ethic Committee of International Institute for Population Sciences. Written consent was taken from participants before the interview. All the personal information concerning their consent is guaranteed to be confidential as per ethical considerations.

**Data Collection**
The data was collected from three blocks of Buldhana district, such as Buldhana, Chikhli and Sangrampur. A semi-structured open-ended questions interview guide prepared based on the literature review; was used for data collection. All COVID-19 protocol was followed while conducting the interview and obtaining information from participants.

Data Management

The collected data in form of audio recordings and written notes were used for transcription. Individually researcher completed all transcription in MS Word 2016 for each participant. The process of repeated reading and listening to recording is performed to ensure data cleaning and accuracy. After the transcription and data cleaning for every participant, the final transcripts were used for analysis.

Data Analysis

The interviews were conducted initially in the Marathi language, and all the interviews were translated into English. The data was coded based on the repeated word in the transcript; based on the repetition of the word, various themes were extracted and main themes were further divided in sub-themes. The whole data set themes took place on two level, first ensured that coded data ensuring they performed coherent patterns and second, subthemes were considered about data set as whole. Themes and subthemes ensured that themes accurately reflect the evidence found in the whole data set. Supplementary coding was also done at this stage to ensure no codes had been missed in the earlier stages. Once the idea of the various themes and how they fit together emerged, the next step of analysis was performed.

Result

The Table 1. Illustrate the demographic characteristics of the study participants, average age of the participants was 31 years, approximately 89% of them were in married reaming 11% were unmarried. Regarding their educational background, more than eight out of ten participants (86.2%) had received secondary education or higher. The majority, or 80%, were engaged as housewives, while the remaining 20% were employed in various occupations.
Table 1
Demographic Characteristics of Focus groups discussion (FGD) participants.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Number</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
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<tr>
<td>19–25</td>
<td>9</td>
<td>16.4</td>
</tr>
<tr>
<td>26–30</td>
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<td>43.6</td>
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<tr>
<td>31–35</td>
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<tr>
<td>&gt;35</td>
<td>12</td>
<td>21.8</td>
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<tr>
<td>Marital status</td>
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<tr>
<td>Married</td>
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<td>89</td>
</tr>
<tr>
<td>Unmarried</td>
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<td>11</td>
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<tr>
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<tr>
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<td>12.8</td>
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<tr>
<td>Secondary</td>
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<td>21.8</td>
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<tr>
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<td>65.4</td>
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<tr>
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<td></td>
</tr>
<tr>
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<td>80</td>
</tr>
<tr>
<td>Service</td>
<td>11</td>
<td>20</td>
</tr>
</tbody>
</table>

Causes of malnutrition

The study outlined the possible factors contributing to malnutrition within the study area, establishing a basis for addressing malnutrition among children enrolled in ICDS program. These identified causes of malnutrition lay the groundwork for comprehending malnutrition management amidst the challenges posed by the COVID-19 pandemic. Notable factors included limited childcare time, insufficient awareness and adherence to cultural beliefs, and inadequate maternal health, all of which emerged as significant drivers of malnutrition. Table 2 presents the primary themes and underlying sub-themes that surfaced concerning child malnutrition management within the study area. Prominent issues such as limited maternal childcare time, insufficient awareness, cultural beliefs, and maternal health challenges emerged as major contributors to child malnutrition. Challenges in effectively identifying malnutrition included the need for multiple rounds of child screening and inadequate involvement of parents in treatment. Malnutrition management was impeded by barriers like inadequate nutrition counselling, reduced follow-up visits, and suboptimal service effectiveness. Additionally, challenges encountered by both caregivers
and service providers during malnutrition management encompassed food insecurity, restricted food choices, and mismanagement of self-produced crops.

<table>
<thead>
<tr>
<th>Major Themes</th>
<th>Sub-themes</th>
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<tbody>
<tr>
<td>Causes of Malnutrition</td>
<td>Low child caring time to mother</td>
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<td></td>
<td>Lack of awareness</td>
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<td>Cultural beliefs</td>
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<td></td>
<td>Poor maternal health</td>
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<tr>
<td>Difficulties in child Identification</td>
<td>Multiple rounds of child screening</td>
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<td>Poor treatment from child parents</td>
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<tr>
<td>Difficulties in management</td>
<td>Nutrition counselling</td>
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<td></td>
<td>Reduced follow-up visits</td>
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<td></td>
<td>Low effectivity of services</td>
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<tr>
<td>Difficulties faced by mothers or caregivers</td>
<td>Food insecurity and lack of food choice</td>
</tr>
<tr>
<td>Difficulties faced by service providers</td>
<td>Mismanagement of self-produced crops</td>
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<tr>
<td></td>
<td>Cultural Gaps</td>
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**Low child-caring time to mother**

The dual burden faced by mothers hampers their capacity to adequately care for their children. Moreover, the daily earnings of laborers constrain the amount of time they can dedicate to childcare.

“As a mother of two children, I find myself juggling dual responsibilities within my family. As a daily wage labourer, I need to leave home around 9:30 to 10:00 AM and return between 6:00 to 6:30 PM, taking on the responsibility of caring for my children and other family members. On top of this, I am also tasked with preparing meals, going to the market, collecting firewood, and fetching water. These multiple tasks significantly restrict my capacity to adequately provide nourishment to my child.” (Mother, 27 years old).

Additionally, AWW has reported instances where mothers overlook the counseling sessions offered by the AWW.

“The majority of mothers are occupied during the morning hours as they engage in various responsibilities like preparing breakfast, bathing their children, and collecting water. Unfortunately, the timing of most counseling sessions does not align with their availability, leading to inadequate
participation or disregard from the mothers. Consequently, these constraints limit the mothers' ability to fully engage in childcare and feeding activities for their children." (AWW 35 years old).

Lack of awareness

Certain participants highlighted that the susceptibility of child malnutrition grew due to insufficient knowledge regarding child feeding, nutritious food, hygiene, and sanitation.

"The primary concern for many mothers focus on the quantity of food rather than its nutritional value, leading to deficiencies in essential nutrients and calories. This, in turn, contributes to persistent hunger and malnutrition" (Anganwadi workers 45 years old).

"The majority of children play in open spaces with poor sanitation and unhygienic regularly since no one is there to look after them. As a result of that, in turn, increases kids vulnerability to infectious disease and contributes to child malnutrition" (Mother 22 years old).

Cultural belief

In society, there has been a longstanding belief that malnutrition is not considered an illness but rather a sign of weakness in children. However, when a child's vulnerability escalates into a serious problem, it becomes a matter of significant concern.

"AWWs informed me that my girl is malnourished, but she is behaving like a normal girl in all activities." (Mother, 33 years old)

"Cultural norms discourage mothers from seeking and receiving counseling. Traditionally, it is considered taboo for anyone other than close relatives or immediate family to meet the child's mother during the initial two weeks after childbirth, as outsiders are believed to bring negative influences (referred to as "Upshagun") to the child." (AWW, 43 years old).

Poor Maternal health

Most AWWs emphasize that child malnutrition often stems from maternal health issues and early marriage, a viewpoint shared by specific AWWs.

"During the course of a child nutrition study, a 20-year-old woman who already had two children was expecting her third child. I attempted to communicate to her husband the possible implications of having a third child. Regrettably, he did not regard the matter seriously, and as a result, the newborns arrived with a weight of merely 1700 grams." (AWW 29th years old).
Difficulties faced in identification of child with malnutrition during COVID-19

Findings from the study, as reported by both AWWs and participating mothers, indicate that AWWs monitor children's growth up to two years of age or until the child reaches a length of 82 centimetres. This involves regular measurements of child weight and height on a quarterly basis during the first year, and subsequently, for children above two years of age or those exceeding a height of 82 centimetres, measurements are taken semi-annually. However, AWWs and mothers encountered difficulties in identifying malnourished children during the COVID-19 pandemic. These challenges encompassed the disruption of several rounds of growth assessments conducted at Anganwadi centers’ (AWCs), limitations on home visits for children, and inadequate cooperation from children's families in the management and treatment of malnutrition.

Multiple rounds of screening in Anganwadi centres (AWCs)

Due to the limitations imposed by COVID-19, AWWs noted that they were compelled to conduct multiple iterations of child screening within AWCs.

"Child screening predominantly involves a monthly assessment of the child's weight, and subsequent categorization as either underweight or within the normal range. This classification is determined using the ICDS growth chart or the POSHAN Tracker application." (AWW 33 years old.)

Many participants observed that the impact of the COVID-19 pandemic led to reduced functioning of AWCs, resulting in the need for multiple screening rounds for children. Moreover, parents displayed reluctance to leave their children alone at AWCs, leading them to attend child screenings whenever it was convenient for them or their caregivers. A significant proportion of AWWs disclosed that the frequency of child screening had decreased due to the pandemic. Furthermore, all AWWs were assigned additional duties related to COVID-19 containment measures, such as organizing awareness camps, conducting screenings for COVID-19 symptoms, and facilitating vaccination drives in their respective service areas. Consequently, most parents were reluctant to send their children for regular screenings at AWCs. Periodic child screening is sometimes conducted by charitable trusts or non-governmental organizations (NGOs); however, it occurs only once or twice a year, and the reliability of the results is not assured. Service providers AWWs also undertake regular visits to children's homes for nutritional health assessments. These visits occur at the request of the child's parents or caregivers.

“I conduct nutritional assessments for children below the age of two by visiting households directly. In cases where children are severely malnourished, I make weekly visits to their homes to monitor their nutritional well-being.” (AWW, 29th years old).

Poor treatment during child screening
Due to concerns related to COVID-19, certain AWWs noted instances of mistreatment by family members of the children, especially during the door-to-door visits for child screening.

“My task involves conducting weekly growth assessments of children and providing updates to my supervisor, particularly for children classified as SAM. However, some parents or caregivers expressed dissatisfaction with the recurrent home visits for screening. The COVID-19 pandemic heightened parents’ concerns about the potential increased susceptibility of children to COVID-19 infection. Although initially, a family member allowed me to enter their home, their sentiment changed over time, and they became discontented with my frequent visits.” (AWWs 39 years old).

“During the child screening process, the AWW encountered mistreatment from my father-in-law. This occurred as he had asthma and was concerned about potential COVID-19 infection due to the screening.” (Mother 26 years old).

Difficulties faced in management of child malnutrition during COVID-19 pandemic

Most participants displayed a lack of comprehensive understanding regarding malnutrition, citing a range of symptoms such as low weight, dry skin, distended abdomen, and frail physique. Additionally, they recognized that AWCs offer nutritional supplements in the form of sweet balls (Ladu). One mother shared her child's existing malnutrition care measures, which included counseling sessions and subsequent follow-up visits. It was also noted that in cases of severe malnutrition, a child should be referred to a Nutrition Rehabilitation Center (NRC) at the district level. The participants also addressed gaps in malnutrition management services. Mothers or caregivers perceived challenges, particularly during the COVID-19 pandemic, in accessing counseling and other necessary resources for effective malnutrition management.

Nutrition Counselling

As per accounts from mothers or caregivers, counseling stands as the foremost approach to managing malnutrition. This counseling encompasses imparting knowledge about nourishing feeding practices and techniques for preparing different food components in ways that preserve their nutritional content. The counseling sessions also encompass guidance on maintaining proper child health, sanitation, and hygiene practices. Mothers or caregivers of children detailed their experiences of receiving counseling services during child immunization, the Poshan Abhiyan campaign in September, as well as home visits by AWWs. However, the advent of COVID-19 has markedly affected malnutrition counseling initiatives.

"Prior to the onset of COVID-19, I would seek guidance from AWW regarding topics like sanitation, hygiene, and child feeding. AWWs would also personally visit my home to offer advice. However, owing to
the impact of COVID-19, AWWs have transitioned to providing tele-counseling exclusively. On occasion, she shares instructional videos pertaining to nutrition." (Mother 24th years old).

“As per the government COVID-19 guideline all the counselling services are being conducted through either mobile phone or video link, as result of that some of the essential counselling services such exclusive breastfeeding, food and nutrition counselling are disrupted” (Anganwadi Worker 34th years old).

Likewise, the AWWs elaborated on their practice of conducting monthly home visits to nursing mothers, delivering dedicated counseling. These visits encompassed guidance on nutritional food preparation, sanitation, hygiene, child health, and family planning services. However, challenges were encountered by all participants in effectively managing malnutrition services, particularly in relation to the absence of adequate provisions for MAM. Notably, not all children received additional THR or nutrition supplement powder from the AWCs. Even if a child qualified for extra rations, they had to wait until the subsequent cycle of ration distribution.

Reduced follow up visits

All mothers or caregivers concurred that there has been a decrease in the frequency of home visits by AWWs, particularly those related to counseling and monitoring child growth, owing to the restrictions imposed by COVID-19.

“The most recent instance when the AWW visited my residence, she contracted COVID-19 within three days. Following this incident, my husband prohibited further visits from the AWW to our home. As a consequence, this situation has indirectly impacted the counseling services and growth monitoring for my underweight child.” (Mother 27th years old).

A significant proportion of AWWs indicated that they make an effort to minimize home visits for malnourished children due to their responsibilities related to COVID-19. Conducting home visits for malnourished children might potentially elevate their susceptibility to COVID-19 infections. Several mothers also expressed their apprehensions about COVID-19 and hence refrained from permitting AWWs to visit their homes for counseling.

Low Effectivity of Services

Mothers and caregivers conveyed their dissatisfaction with the efficacy of child malnutrition management. Some noted challenges in implementing virtual counseling, finding it less effective compared to the prior face-to-face interactions facilitated by AWWs.

Another noteworthy obstacle was the closure of weekly markets due to COVID-19 restrictions, preventing access to vital items like green vegetables and other essential foods. The pandemic has, to some extent,
curtailed household consumption due to reduced family incomes and uncertainties about the future.

"I adhered to the guidance provided by AWWs for a month, yet there was no noticeable enhancement in my child's weight. At times, I find myself questioning the feasibility of the counseling provided by AWWs; however, my options are limited due to COVID-19 restrictions on public transportation. Furthermore, the inability to hire a private vehicle hinders our ability to visit a private hospital." (Mother 34th years old).

Another issue reported by AWWs is that children who are moderately thin or underweight are being ignored by their parents. It does not become a serious concern for them until they reach a frightening degree of malnutrition.

"A four-year-old child was in the MAM category, I gave them correct counselling and AWC nutrition supplements, but they ignored it now that the girl's weight is only 11kg and she falls under SAM" (AWW, 43rd years old).

Some AWWs noted that nutritional content was lost due to cultural beliefs and various food preparation procedures.

"Every September month, we organised Poshan Abhiyan and demonstrated how to create nutritious meals without sacrificing nutritional content. However, regarding the applicability, relatively few people use it" (AWW 27th years old).

**Difficulties face by Mother or Caregiver**

As per insights from AWWs, mothers, and caregivers, the most challenging aspects of addressing child malnutrition encompassed issues related to food security, limited food choices, and improper handling of available food resources. These significant hurdles hinder mothers and caregivers from effectively addressing infant malnutrition.

**Food insecurity and lack of food choice**

Amid the COVID-19 pandemic, ensuring access to food has emerged as a pressing issue, particularly for families relying on daily wage labor. Although the Indian government distributed free grains via the Public Distribution System (PDS), it proved inadequate to fully shield certain households from the grip of food insecurity.

"Our family consists of seven members, with only my spouse and myself being the sole earners. My husband used to work as a security guard in a mall, but the abrupt COVID-19 lockdown forced him to return to our village, resulting in the loss of his job. Presently, we are grappling with food insecurity and financial difficulties as neither of us is employed. Consequently, I am unable to provide nourishing food for my child and the other members of our family. " (Mother of 23rd years old).
As stated by AWW, the counseling offered to seasonal migrants tends to be ineffective, as many of them prioritize tangible services such as dry rations and nutritional assistance over counseling.

“The majority of families with limited income in my village are comprised of seasonal migrant laborers, which leaves them without any reliable food security. As they typically do not carry extra food and rely on purchasing it at the weekly market instead.” (AWW 41st years old).

Numerous participants asserted that the COVID-19 lockdown had curtailed their choices for food and had constrained the variety in both their family’s and children’s dietary routines. The suspension of the village’s weekly market in adherence to COVID-19 guidelines over the past year has inadvertently led to a rise in the prices of items like green vegetables, legumes, and non-vegetarian foods due to disruptions in the supply chain.

**Mismanagement of self – produced crops**

A significant portion of the agricultural activities in the region relies on rainfed methods, and land is often left uncultivated for two seasons following the Kharif season. The preference among a majority of farmers is for cash crops, with soybean being a prominent choice. However, the cultivation of cash crops limits families’ capacity to grow food crops, even when they have a substantial yield of cash crops. Many farmers wait for food crop prices to drop before making a purchase, as uncertainty deters them from buying even when they are in need. For instance, the COVID-19 pandemic accentuated food insecurity for many parents due to challenges in effectively managing their self-produced crops.

**Cultural gap**

Mothers and caregivers encounter an additional obstacle stemming from a cultural disparity, as many AWWs deliver counseling without taking into account the educational background of both the mother and child. Traditional beliefs hold more sway among scheduled tribes (ST), causing them to be less inclined to swiftly adopt external recommendations. As recounted by an AWW, the mother of a SAM child hesitated to bring her child to NRC due to fears of potential COVID-19 infection. Furthermore, a substantial challenge arises from the limited autonomy women have in making food choices, thereby constraining their ability to offer appropriate and healthy nourishment to their children.

"On a daily basis, I am compelled to consult my mother-in-law about the meals she has prepared for lunch and dinner, and I find myself obliged to feed those meals to my child regardless of whether they are suitable for her or not." (Mother 23rd years old).

The majority of AWWs emphasized that cultural taboos surrounding the acknowledgment of child malnutrition pose a significant impediment for mothers and caregivers in seeking services. As reported by the child’s parents, disclosing malnutrition is perceived to diminish the child’s dignity.
"In my Anganwadi Center (AWC), there was a child classified as MAM, but the parents declined to have the child’s health assessed by doctors. Their reluctance stems from the belief that if the community becomes aware of the child’s malnutrition, it will draw attention to the child’s severe malnourished condition. Additionally, child malnutrition has transformed into a topic of gossip, which in turn undermines the household’s reputation." (AWW is 35 years old.)

Difficulties faced by service provider

AWWs noted that they had resorted to follow-up activities due to the COVID-19 restrictions that prevented them from conducting house visits. As a result of being primarily engaged in follow-ups, a notable challenge arose: their primary objective of child development had been undermined due to the additional COVID-19-related responsibilities. Integrated Child Development Services (ICDS) mandated AWWs to monitor and report the child’s weight to their supervisors, but the outbreak impeded their ability to fulfill this monitoring duty. The suspension of nutritional rehabilitation centres at the district level had a substantial impact on the rehabilitation process for severely malnourished children.

"Two children from my centre was admitted to the Buldhana NRC, but a sudden COVID-19 lockdown forced them to return home. Both children have been suffering from SAM for the past year because their parents cannot provide them with enough nutritious food due to poverty. When I visit them, they always inquire when the NRC would open and they can admit their child in NRC" (AWWs 56 years old).

The limited awareness of malnutrition among mothers and caregivers creates challenges for AWWs in addressing malnutrition and raising concern about the child’s well-being. Many mothers in my AWC view hunger as a sign of weakness rather than a health issue. Consequently, they tend not to take my advice seriously, and while they listen when I explain, they often do not put the recommendations into practice. A significant number of AWWs expressed that insufficient support from higher authorities hampers their ability to carry out their responsibilities effectively. The ever-evolving nature of their tasks, with increased involvement in COVID-19-related duties, often leads to neglect of their core responsibilities. Moreover, the lack of local financial support prevents AWWs from efficiently implementing initiatives. For instance, during the Poshan (nourishment) month, participants do not receive any incentives, resulting in low participation in the Poshan Abhiyan campaign. Furthermore, the limited education and inadequate skill levels of AWWs pose additional barriers to effectively managing malnutrition in their service areas.

Discussion

The study aims to evaluate challenges associated with addressing malnutrition among preschool children in the Buldhana district of Maharashtra, India. The study’s results identified potential factors contributing to child malnutrition, such as inadequate child screening, obstacles faced by mothers or caregivers, and challenges encountered by service providers. Factors like limited maternal childcare time, lack of parental comprehension, cultural traditions, and maternal health problems were highlighted as drivers of child malnutrition [24–25]. The study’s findings, akin to underscored the adverse effects of
limited maternal childcare time on child health [26]. Our research also underscores that maternal knowledge gaps contribute to child malnutrition. Additionally, the study's observations from NHFS-5 data for India suggest that insufficient awareness could hamper child development and subsequently affect a child's nutritional well-being. Cultural beliefs and the poor health status of young mothers are especially pronounced in economically disadvantaged households. Addressing this issue could involve gradual reduction through community leader support, regular counseling, awareness campaigns, and the provision of appropriate nutritional supplements to pregnant women.

Detecting malnourished children during the COVID-19 pandemic has involved multiple rounds of child screening at AWCs, yet inadequate parental participation has hindered effective treatment during these screenings. Typically, children would undergo monthly assessments; however, due to the pandemic, several screening rounds were rendered less effective as concerns over COVID-19 led to hesitancy among parents. Moreover, children belonging to scheduled tribes faced challenges in reaching AWCs, given their relative isolation from mainstream society. The identification of underweight children became a challenge amid COVID-19, but home visits conducted as part of child immunization campaigns provided an opportunity for identification [27].

The pandemic also significantly disrupted family-initiated child health check-ups, leading to a reduction in hospital visits for children. The revised guidelines from the Indian government dictated the use of child weight and height for identification purposes. Notably, Anganwadi workers encountered difficulties and reluctance from parents during child screenings due to the COVID-19 crisis, even as they took substantial risks to conduct these screenings for a potentially life-threatening condition. The study further revealed that mothers or caregivers of malnourished children received counseling on exclusive breastfeeding, nutritious meal preparation, hygiene, and cleanliness. This counseling was delivered through tele-counseling sessions, child immunization schedules, and the Poshan Abhiyan month. However, the study highlights that merely providing counseling does not fully achieve its intended goals due to various factors, including food insecurity, unemployment, cultural differences, and limited access to education.

In India, the Public Distribution System (PDS) provided free food grain to beneficiaries until December 2020; however, some families continued to face food shortages despite this effort [28]. Another challenge emerged as the COVID-19 pandemic limited Auxiliary Nurse Midwives (ANMs) in conducting follow-up visits to children's homes, thereby impeding their ability to effectively address child health and malnutrition. This situation led to some children developing SAM due to insufficient monitoring by ANMs. Our study highlights that the services provided during the COVID-19 pandemic proved inadequate in addressing children's nutritional needs, as evidenced by the lack of improvement in their nutritional status despite receiving treatment. The disruption in nutrition management services was compounded by parental unawareness and transportation difficulties. It is important to note that relying solely on counseling sessions does not significantly enhance the effectiveness of services, especially when mothers or caregivers do not respond adequately. Immediate dietary interventions are necessary to complement counseling efforts [29].
Our research findings unveiled several challenges encountered by mothers or caregivers of children, encompassing issues of food insecurity, limited dietary choices, mismanagement of self-produced crops, and cultural barriers. The scarcity of food and restricted options can be attributed to factors such as increasing unemployment and government-imposed COVID-19 guidelines [30]. Ineffectual crop management of self-grown produce arose from the sale of food grains without considering future implications. Even when mothers or caregivers possess knowledge about infant nutrition, they struggle to implement it successfully due to the shortage of food resources. This situation exposes children to a higher risk of malnutrition, compounded by cultural disparities between service providers and mothers or caregivers. Such differences have resulted in family members hesitating to enroll their children in NRCs, exacerbating the vulnerability of children to malnutrition. The lack of autonomy for mothers in meal preparation directly compromises the nutritional needs of the child [31]. Societal taboos and nutritional stigmatization contribute to parents' hesitancy in monitoring their children's growth.

Another significant discovery from the study is that reduced home visits during the COVID-19 pandemic and the suspension of NRCs have prolonged the duration of child malnutrition. The assumption that a child's recovery is quicker in NRC than at home underscores the limitations of Village Child Development Centers (VCDCs) in addressing underweight children. These limitations could exacerbate the vulnerability of undernourished children, especially in households experiencing food insecurity. Additionally, the study highlights the lack of motivation for Anganwadi personnel due to the unprofessional nature of their work and the absence of incentives.

**Conclusion**

Child malnutrition among pre-schoolers has been tackled based on the severity of the condition, employing strategies such as counselling, double THR, and operating nutrition rehabilitation centres. However, the ongoing COVID-19 pandemic has significantly disrupted all facets of child malnutrition management. It is imperative to place greater emphasis on child feeding practices and food security in order to effectively combat child malnutrition. The government's intervention is crucial during these challenging times to address the multifaceted obstacles that stakeholders encounter in managing malnutrition. Enhancing the skills of healthcare workers and providing incentives for increased effort could be complemented by government engagement, potentially leading to improved outcomes. Urgent attention is required for the NRC to resume full-scale operations in accordance with COVID-19 guidelines.

**Abbreviations**

ANM
Auxiliary Nursing Midwives
ASHA
Accredited Social Health Activist
ASHA
Accredited Social health Activist
Declarations

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Ethics approval and consent to participate

This study was approved by the Student Research Ethics Committee of International Institute for Population Sciences Mumbai India to which the authors are affiliated. Informed consent was obtained from all participants during the data collection. The study only interviewed participants who gave their consent willingly. All methods were carried out in accordance with relevant guidelines and regulations.

Consent for publication

Not applicable

Availability of data and materials

The datasets created and/or analysed during the current study are not publically accessible since the first author only used them for a small portion of the research; however, they are available from the corresponding author on reasonable request.

Competing interests

The author declare that they have no competing interests

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Authors' contributions

Sagar Dhirasrao Ingle conceptualised the study and prepared draft of the manuscript.

Dewaram Nagdeve critically evaluated and revised the manuscript. Both authors read and approved the final manuscript.

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References


