Perceptions of healthcare providers and mothers on management and care of severely wasted children: a qualitative study in Karnataka, India

Madhu Mitha Manivannan,1 Manjulika Vaz,2 Sumathi Swaminathan

ABSTRACT

Objectives To explore perceptions of healthcare providers and mothers of children with severe wasting on the perceived reasons for severe wasting, constraints on the management and barriers to caregiving and care-seeking practices.

Design In-depth qualitative interviews conducted with healthcare providers and mothers of children with severe wasting.

Setting Urban and rural locations in Karnataka state, India.

Participants Healthcare providers (anganwadi workers, accredited social health activists, auxiliary nurse midwives, junior health assistant, medical officers, nutrition counsellors) from public healthcare centres and mothers of children with severe wasting.

Results Forty-seven participants (27 healthcare providers, 20 mothers) were interviewed. Poverty of households emerged as the underlying systemic factor across all themes that interfered with sustained uptake of any intervention to address severe wasting. Confusion of ‘thinness’ and shortness of stature as hereditary factors appeared to normalise the condition of wasting. Management of this severe condition emerged as an interdependent phenomenon starting at the home level coupled with sociocultural factors to community intervention services with its supplemental nutrition programme and clinical monitoring with therapeutic interventions through an institutional stay at specialist referral centres. A single-pronged malnutrition alleviation strategy fails due to the complexity of the ground-level problems, as made apparent through respondents’ lived experiences. Social stigma, trust issues between caregivers and care-seekers and varying needs and priorities as well as overburdened frontline workers create challenges in communication and effectiveness of services resulting in perpetuation of severe wasting.

Conclusions To ensure a continuum of care in children with severe wasting, economic and household constraints, coordinated policies across the multidimensional determinants of severe wasting need to be addressed. Context-specific interventions are necessary to bridge communication gaps between healthcare providers and caregivers.

INTRODUCTION

Malnutrition remains a global public health problem impairing growth and development of around 47 million children under 5 years of age, two-thirds of whom are from Asia.1 It is associated with critical consequences such as faltered growth, susceptibility to diarrhoea, other infectious diseases, poor cognitive development2 3 and in severe cases, leading to mortality.4–6 Wasting, particularly, severe acute malnutrition (SAM), remains a national concern in India with a reported prevalence of 7.5%, one of the highest in the world.7 8 At the present rate of reduction, the WHO’s target to reduce and maintain childhood wasting to less than 5% by 20259 (an almost 40% reduction) and the United Nations Sustainable Development Goals Target 2.2 to end all forms of malnutrition by year 203010 may be unattainable. There is a pressing need to understand and tackle the problem through evidence-based locally relevant research.11–13

Severely wasted children aged 6–59 months are primarily diagnosed based on one of the following criteria: weight-for-height/length Z-score <-3 SD of the median WHO growth standard or mid-upper arm circumference.
<115 mm or using clinical signs of bilateral pitting oedema or visible wasting. Among them, those with complications, that is, with classic clinical features of intercurrent infections, diarrhoea and severe dehydration with no appetite, are treated via admissions to health facilities. In India, such children are admitted to the nutritional rehabilitation centres (NRCs) (ie, specialist referral centres) set up by the National Health Mission within districts in each state where children are initially provided with Formula 75 during stabilisation, Formula 100 during rehabilitation (as per the WHO protocol) followed by transition to local foods at the time of discharge. Children with no complications (clinically well and active with good appetite) are managed in the community, specifically through Anganwadis under the Integrated Child Development Services (ICDS) where supplementary nutrition (800 kcal of energy and 20–25 g of protein/day) is provided. Despite these interventions, there has been no significant reduction in SAM.

Internationally, children with uncomplicated SAM are managed as outpatients in the community using ready-to-use therapeutic foods (RUTFs) or locally prepared foods. In India, apart from small-scale regional studies under the community-based management of acute malnutrition (CMAM) programme, provision of RUTFs has neither been implemented nor accepted well in the treatment of SAM.

Involvement of both healthcare providers (HCPs) and mothers or caregivers is vital in the treatment and management of children with SAM. In India, HCPs, largely medical personnel in the primary healthcare centres (PHCs) (referral units for a population of 30,000 in the plains and 20,000 in tribal and hilly areas) and/or district hospitals, and frontline workers (FLWs) in the community are responsible for management of children with SAM (online supplemental figure 1).

In general, health and nutrition education for mothers and caregivers is considered essential as sociocultural beliefs and ignorance impede improvement in health status of children. Higher maternal literacy level has been linked with improved child health and nutritional status (p=0.011). Caregivers of severely malnourished children in Zambia were unable to correlate malnutrition with poor feeding practices, believed that higher expenses were related to treatment and access to healthcare and quoted unavailability of free feeding schemes as barriers to care-seeking behaviour. In non-Indian settings, management and treatment practices for SAM and challenges faced by caregivers in accessing healthcare services have been explored. However, only two studies in India evaluated the acceptability and performance of the CMAM programme by examining views of service providers and mothers on knowledge, attitude and practices related to management practices and care-seeking behaviour. Factors disrupting the continuum of care can result in ineffectiveness of management and perpetuation of SAM. We, therefore, aimed to gain ground-level insights from both HCPs and mothers into perceived reasons for severe wasting, management practices experienced, barriers to care-giving and care-seeking behaviour, and to expose gaps that need to be addressed.

Methods

In-depth, semistructured interviews were used to collect data. The Consolidated criteria for Reporting Qualitative research guidelines were followed.

Study setting

The study was conducted in two districts, Raichur and Bengaluru of Karnataka state, India, largely because prior to the study, the prevalence rates of severe wasting reported in National Family Health Survey 4 were 18.1% and 11.7% in Raichur and Bengaluru, respectively. In Raichur, both slum settlements and peri-urban areas were selected in Bengaluru, as a higher prevalence of malnutrition was expected in comparison with non-slum settlements. Further disparity in earning capacity and occupational mobility between these districts results in increased rural-to-urban migration.

Study participants

HCPs involved in management of SAM were recruited through snowball sampling and included Anganwadi workers (AWWs), accredited social health activists (ASHAs, the interface between the community and the government health services), auxiliary nurse midwives (ANMs) (all clubbed as female FLWs) and medical personnel from public hospitals (medical officers, nutrition counsellors, junior health assistant (JHA)). They were contacted to confirm the time and location for in-person interviews. All those contacted gave their voluntary consent and there were no refusals or dropouts. Mothers of severely wasted children were recruited through purposive sampling. Face-to-face interviews were conducted after ascertaining availability of mothers who were either working or were homemakers. FLWs established rapport with mothers, and helped to recruit them and schedule interviews. Data saturation determined the final sample size.

Data collection

In-depth, in-person interviews were conducted between June 2018 and March 2019 in English or in one of the local languages/dialects (Kannada, Tamil, Telegu or Urdu) spoken in the two districts. Follow-up telephonic interviews were held to seek clarification and address gaps. The semistructured interview guide was developed...
by the first author, a doctoral scholar in nutrition. The guide was based on previous literature available and included probes on perceived causes for developing SAM, identification and management of a severely wasted child, barriers to caregiving/care-seeking and their perceptions on narrowing gaps between provision of healthcare and benefits to beneficiaries. All interviewers were women trained by a qualitative research consultant over 1 week. No investigator had any prior relation with the participants. Prior to the interview, the corresponding author assessed the content validity of the interview guides. Guides were pilot tested on two participants from each location to check participants’ comprehension of questions. The first author moderated most interviews, except where she lacked language proficiency. HCP interviews were conducted in a separate room at the health facilities or community centres. Except for one mother who sought the help of the child’s father, all mothers were interviewed alone in their homes. On average, interviews lasted 41±20 min (range 20–120 min). Field notes and observations, and non-verbal cues (gestures, body language) were documented. Additionally, sociodemographic data and the child’s food preferences were collected from mothers. With prior consent of participants, interviews were audio-recorded, translated into English and transcribed verbatim. Nuances of language translation were clarified with the respondents at the time of the interview itself. To verify accuracy and completeness of the translation, all recordings were repeatedly listened to and revisions made.

**Patient and public involvement**

The focus was on interviewing HCPs and mothers. Patients and/or the public were not involved in the study design, conduct, reporting or dissemination of this research. However, as interviews progressed, the guide was refined based on the respondent’s feedback. This was in line with the evolving process of qualitative data collection.

**Data analysis**

The framework analysis method with iterative steps was adapted to analyse interview transcripts.32 Data familiarisation and immersion were attained by repetitive reading of the transcripts by all authors and subsequent development of a thematic framework to identify potential themes and subthemes. Using the software package NVivo V.12.0, a codebook was created by two independent data coders (first and second authors) and rechecked by them to ensure intercoder reliability. This process addressed the possible biases of the primary investigator as the second author brought in a social science, ethnographic and grassroots perspective. Codes were preliminarily generated within each of the participant’s data. Transcript coding into a priori themes was performed followed by a sequential method to integrate emerging themes. Routine author discussions were held to refine categories and themes. Charting was completed by iteratively arranging summarised data in accordance with the thematic content listed for each participant category. A three-theme framework with subthemes was finalised. The final step of mapping and interpretation explored inductive and deductive patterns through comparison within and between participant data and elicited nuanced explanations. In the results, illustrative quotes are tagged with a unique ID denoting location (U—urban, R—rural) and respondent category (M—mother, AWW, ASHA, ANM, JHA, NRC medical officer, NRC nutrition counsellor).

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**Table 1 Demographic characteristics of households with severely wasted children**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Urban (n=11)</th>
<th>Rural (n=9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of mother, mean±SD</td>
<td>26.0±3.4</td>
<td>27.8±4.8</td>
</tr>
<tr>
<td>Mothers’ education level, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>1 (9.1)</td>
<td>3 (33.3)</td>
</tr>
<tr>
<td>Up to 10 years of schooling</td>
<td>7 (63.6)</td>
<td>5 (55.6)</td>
</tr>
<tr>
<td>Beyond 10 years of schooling</td>
<td>3 (27.3)</td>
<td>1 (11.1)</td>
</tr>
<tr>
<td>Mothers’ occupation, n (%)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not working</td>
<td>9 (81.8)</td>
<td>5 (55.6)</td>
</tr>
<tr>
<td>Agriculture/unskilled</td>
<td>1 (9.1)</td>
<td>3 (33.3)</td>
</tr>
<tr>
<td>Semiskilled</td>
<td>1 (9.1)</td>
<td>1 (11.1)</td>
</tr>
<tr>
<td>Fathers’ occupation, n (%)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture/unskilled</td>
<td>3 (27.3)</td>
<td>5 (55.6)</td>
</tr>
<tr>
<td>Semiskilled/skilled</td>
<td>6 (54.5)</td>
<td>4 (44.4)</td>
</tr>
<tr>
<td>Professional</td>
<td>2 (18.2)</td>
<td>–</td>
</tr>
<tr>
<td>Religion, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hinduism</td>
<td>8 (72.7)</td>
<td>6 (66.7)</td>
</tr>
<tr>
<td>Christianity</td>
<td>2 (18.2)</td>
<td>–</td>
</tr>
<tr>
<td>Islam</td>
<td>1 (9.1)</td>
<td>3 (33.3)</td>
</tr>
<tr>
<td>Number of children under 5 in the household, mean±SD</td>
<td>2.6±1.3</td>
<td>2.0±1.0</td>
</tr>
<tr>
<td>Age group of severely wasted children, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6–24 months</td>
<td>2 (18.2)</td>
<td>1 (11.1)</td>
</tr>
<tr>
<td>25–59 months</td>
<td>9 (81.8)</td>
<td>8 (88.9)</td>
</tr>
<tr>
<td>Birth order of the severely wasted child, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only child</td>
<td>1 (9.1)</td>
<td>3 (33.3)</td>
</tr>
<tr>
<td>Youngest child</td>
<td>6 (54.5)</td>
<td>1 (11.1)</td>
</tr>
<tr>
<td>Middle child</td>
<td>2 (18.2)</td>
<td>–</td>
</tr>
<tr>
<td>Oldest child</td>
<td>2 (18.2)</td>
<td>5 (55.6)</td>
</tr>
<tr>
<td>Anthropometry of severely wasted children, mean±SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height (cm)</td>
<td>82.6±10.9</td>
<td>83.8±7.8</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>8.2±1.9</td>
<td>8.4±1.5</td>
</tr>
<tr>
<td>Weight-for-height Z-score (SD), median (IQR)</td>
<td>−3.6 (−4.5, −3.1)</td>
<td>−3.6 (−4.1, −3.3)</td>
</tr>
<tr>
<td>Type of toilet facility, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open space</td>
<td>0</td>
<td>2 (22.2)</td>
</tr>
<tr>
<td>Pit latrine</td>
<td>11 (100.0)</td>
<td>7 (77.8)</td>
</tr>
</tbody>
</table>

*Occupation (mother/father)—unskilled: daily wage work, construction worker, watchman, waste collector; semiskilled: shop owner, presser; skilled: driver, painter, garage worker, social activist; professional: engineer, lawyer.
RESULTS
Of the 47 participants interviewed, 27 were HCPs (6 medical staff, 21 FLWs) and 20 were mothers of severely wasted children. The average age of the HCPs was 32.3±2.1 years with work experience ranging from 1 to 18 years. Educational level of FLWs ranged from completion of 10 years of schooling until graduate education (9/21—<12 years of education; 11/21—undergraduate degree (including nursing); 1/21—graduate degree). Information on the caste of either the HCPs or mothers was, however, not available. Table 1 presents mothers’ household sociodemographic characteristics and anthropometry of their severely wasted children. The interviews are described based on the three-theme framework (perceived reasons for perpetuation of severe wasting, constraints on management of severe wasting and barriers and challenges of caregiving and care-seeking behaviour) arrived at from a priori and inductive coding (figure 1).

Perceived reasons for perpetuation of severe wasting
It is all poverty. All are poor people. If they are going to be with the child full day giving good food, then the entire family must stay hungry without going for work. (R-ANM1)
Deep-rooted poverty was the constant and consistent refrain expressed across all participant categories as to why severe wasting continued to be prevalent despite various interventions. This was linked directly to erratic employment, food insecurity and poor living conditions. The subthemes with supporting data are summarised in table 2.

Economic and sociocultural factors
Cycles of debt, dependence on food handouts, resorting to single meals per day for the child and sharing of the designated food for the child among the whole family were constant features reported. Reasons for delaying visits to the medical centre included familial financial pressures and the need to earn at least the minimum wage compelled both parents to work. Sociocultural factors (local taboos, gender bias towards the child) and environmental factors (open defecation, poor water quality) were also stated.

Maternal factors
Early marriage, maternal malnutrition, home birth as opposed to institutional, short birth spacing, repeated pregnancies mainly due to the desire for a male child, psychological distress and marital violence were among the several factors affecting the health of both mother and child, resulting in SAM.

Feeding habits
Perceptions of low breast milk supply, beliefs of nutritional inadequacy of breast milk, entrenched behaviours of delayed complementary feeding, extended breast feeding beyond 2 years and resorting to cheaper and unhealthy foods such as packaged fried snacks, biscuits and other sugary foods (priced between 2.00 and 10.00 Indian rupees (US$0.024–US$0.122)) due to the unaffordability of fruits and vegetables emerged as key contributory reasons for SAM.

Constraints on management of severe wasting
Interdependencies of various players in the system to manage and treat SAM were evident indicating that a
Table 2  Perceived reasons for the perpetuation of severe wasting

<table>
<thead>
<tr>
<th>Subthemes</th>
<th>Categories</th>
<th>Illustrative quotes</th>
<th>Frontline health workers</th>
<th>Medical staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic and sociocultural factors</td>
<td>Financial considerations</td>
<td>‘From a single man’s salary, we are not able to get foods...Half of our earnings go in loans and the rest, we use for our expenses. And when my child suddenly falls ill, I spend money on autos for travel to PHC.’ R-M8</td>
<td>‘Parents who are working will always go to work early to get extra money. They leave the child in someone’s house, then the child will become SAM as there is no one to take good care of the child...’ U-ASHA1</td>
<td>‘It is poverty. Parents go outside to work and come back only in the evening...Grandmothers who are not able to work will be there. So how can they feed the child? They will not feed.’ R-NRC medical officer</td>
</tr>
<tr>
<td></td>
<td>Superstitious beliefs and social taboos</td>
<td>‘...I give a lot of food for my child, and she eats, but why is she still thin? I think I have done something wrong in my past life, and its come through my child.’ R-M1</td>
<td>‘Before coming to us, they [parents of children with SAM] thought it was god’s curse and used to tie blessed threads on the child.’ U-JHA</td>
<td>‘They [parents of children with SAM] don’t consider severe wasting as a disease. They misinterpret it with something religious. They try all herbal remedies.’ R-NRC nutrition counsellor</td>
</tr>
<tr>
<td>Gender disparity</td>
<td></td>
<td>‘...for boy children they [parents of children with SAM] give more importance than the girl child as they might take care of them when they grow old.’ U-M5</td>
<td>‘Most of the time, it is the girl children who are malnourished here.’ R-AWW5</td>
<td>‘I see more girls than boys who are admitted here. The parents feel by giving good nutrition to the boy as he grows old, he will come with the parent and work in field, but the girl gets married at a very early age here.’ R-NRC medical officer</td>
</tr>
<tr>
<td>Maternal factors</td>
<td>Child marriages and consanguineous marriages</td>
<td>‘I was married off when I was 16 years old. I got pregnant and was still young and weak. I did not know I had to visit the hospital at the time of pregnancy. I did not take care of myself. That’s why my child was born very weak and thin.’ U-M11</td>
<td>‘...mothers of children with SAM get married early, they get pregnant immediately and do not know how to take care of the baby. So that baby again becomes malnourished.’ R-AWW1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maternal malnutrition</td>
<td>‘I feel it is my pregnancy and not eating well could be a big reason. If someone had given me nutritional advice, I would have been aware and made sure I ate well...’ R-M3</td>
<td>‘If the mother does not eat well at pregnancy, the baby will also be weak like the mother.’ R-AWW4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Antenatal care and birth spacing</td>
<td>‘...the first time, I delivered a baby girl, my family was not happy with it. So that is when I had to get pregnant continuously, but my bad luck all my deliveries were all girls.’ R-M3</td>
<td>‘The slum children will not have enough space and in the house itself the mothers will deliver...They will not even know the correct and clean way to cut the umbilical cord. We tell them the hospital will provide special treatment, still, they do not admit themselves in the hospital...’ R-AWW5</td>
<td>‘There could be the mother getting pregnant very soon after [the previous]. So, she will not be able to give attention or breastfeed the child, so that could be the reason.’ R-NRC nutrition counsellor</td>
</tr>
<tr>
<td></td>
<td>Infant and child feeding practices</td>
<td>‘I breastfed him only for a month and started giving him packet milk. I diluted it...doctor said it should not be given directly and told me to add a vessel of water for 250 ml of milk.’ U-M6</td>
<td>‘...they [mothers] do not breastfeed thinking something will happen to their breast.’ U-ANM2</td>
<td>‘...after 6 months they [mothers] do not start complementary feeding. Beyond one year they will be only breastfeeding and do not give complementary feeds. It is impossible that nutrition needs are met...’ R-NRC medical officer</td>
</tr>
<tr>
<td></td>
<td>Influence of media</td>
<td>‘They show in the television advertisement, that after the child has biscuit, he becomes tall. So, I give him biscuit, and he likes biscuit more than rice and dal [lentil gravy];’ R-M7</td>
<td>‘He [severely wasted child] eats a lot of chips and kurkure. How much ever I shout at him, he will not eat Anganwadi food. We should blame all these advertisements.’ U-AWW4</td>
<td>‘They [mothers of children with SAM] just give biscuits. They see advertisements and feel that it completes the food...They do not know the importance of complementary feeding.’ U-NRC nutrition counsellor</td>
</tr>
</tbody>
</table>

ANM, auxiliary nurse midwife; ASHA, accredited social health activist; AWW, Anganwadi worker; JHA, junior health assistant; M, mother; NRC, nutritional rehabilitation centre; PHC, primary healthcare centre; R, rural; SAM, severe acute malnutrition; U, urban.

continuum of care is essential. Care commences at home and then in the community with the provision of nutritional therapy. If a child fails to thrive, the child is clinically managed primarily through PHCs followed by the NRC or district hospital. At each stage, difficulties faced by participants delayed the treatment process, at times escalating to the relapse of SAM (tables 3 and 4).

At home, mothers recognised early signs of severe wasting based on physical appearance and activity of the child. Malnutrition was commonly termed ‘apoushika’ in the local language. A child’s weakness was associated with thinness and largely attributed to family genetics. Mothers stated home remedies such as massages or cultural practices, as suggested by family elders, well-wishers and traditional/faith healers, can improve their child’s health. FLWs reached out to caregivers and their families and counselled on broader health and hygiene practices. Besides counselling, children were screened for SAM at
Table 3: Constraints on management of severe wasting: home level and community level

<table>
<thead>
<tr>
<th>Subthemes with categories</th>
<th>Categories</th>
<th>Illustrative quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home level</td>
<td>Visible signs</td>
<td>‘She [severely wasted child] will be very weak and her eyes will be sunken and red. Sometimes she used to get fever.’ R-M1</td>
</tr>
<tr>
<td></td>
<td>Activity level and heredity</td>
<td>‘He [severely wasted child] will always feel tired and sleepy. He will not even go play. I know one thing clearly, that he is not sick.’ R-M5</td>
</tr>
<tr>
<td></td>
<td>Remedies for cure</td>
<td>‘When giving a bath, in laws told me to splash hot water and massage with oil… by doing this they told the legs will get strength.’ U-M2</td>
</tr>
<tr>
<td></td>
<td>Screening children</td>
<td>‘Once or twice in a month, the Anganwadi teacher comes and checks his weight.’ R-M9</td>
</tr>
<tr>
<td>Community level</td>
<td>Supplementary nutrition portions</td>
<td>‘Apart from the normal children’s ration, I can see that they give only a little extra for my child.’ U-M5</td>
</tr>
<tr>
<td></td>
<td>Additional benefits</td>
<td>‘The teacher wanted me to go to the hospital, get a certificate for less weight to get egg. But I did not go as I was busy with work.’ U-M9</td>
</tr>
<tr>
<td></td>
<td>Intake of THR</td>
<td>‘With the milk powder, one glass I will drink and the other glass I will give half to my older daughter and the other half to my younger daughter (SAM child).’ R-M4</td>
</tr>
<tr>
<td></td>
<td>Pillerage and poor food quality</td>
<td>‘…the helper opens the Anganwadi, will take unused ration put into a bag and it will be given to her husband.’ U-M6</td>
</tr>
</tbody>
</table>

Illustrative quotes  
ASHA, accredited social health activist; AWW, Anganwadi worker; M, mother; MUAC, mid-upper arm circumference; NRC, nutritional rehabilitation centre; PHC, primary healthcare centre; R, rural; SAM, severe acute malnutrition; THR, take-home ration; U, urban.

At the community, supplementary nutrition in the form of take-home ration (THR) for children <3 years of age and a hot cooked meal (HCM) for children ≥3 years of age, through the ICDS, is provided. There was
## Table 4  Constraints on management of severe wasting: institutional level

<table>
<thead>
<tr>
<th>Subthemes</th>
<th>Categories</th>
<th>Illustrative quotes</th>
<th>Frontline health workers</th>
<th>Medical staff</th>
</tr>
</thead>
</table>
| Primary healthcare centre (PHC)                | Preference for private healthcare   | 'Since it is a private hospital, they do cost but give good care and show no carelessness…also it is close to our house, we can go at times of emergency.' U-M5  
'…we wanted to get our daughter treated early so we went to private hospital. In the district hospital, they will keep me and my daughter for a week or more. I know their treatment will be good, but I did not want to lose my workdays and wages.' R-M6 | 'If I tell them [parents of severely wasted] to take the child to the doctor, they will not. So, I myself will bring the child and the parents to the PHC for a checkup.' U-ASHA3 | 'Usually, an appetite test should be done, but we do not follow. We start directly with F75…we feel that if patient is really SAM, he has no way of taking proper food.' R-NRC medical officer  
'Product will be like a barfi or at times as powder made from ground nuts, milk powder, sugar and coconut oil. Water can be added and given as balls or barfi. Child should consume 70–80% to pass the appetite test.' U-NRC medical officer1  
'We give a thick porridge which is made from a multigrain mix for the appetite test. Child should consume 50–60% to pass the test.' U-NRC medical officer2 |
| Nutritional rehabilitation centre (NRC)        | Appetite test                        | 'NRC staff took our bank account number. But it’s six months and we received no money. I did not go to work for 8 days and lost my labourer job. I do not know when I will get it. If we get that money, we could buy all the food they advised in the hospital. But out of my labourer work, I cannot buy fruits or vegetables for my child.' R-M2  
'…we were there for four days and then I asked them to send us soon as I have two more children at home…they did not give me any money. Do they pay us? I did not know, no one told me. I know the treatment is free but did not know they will give us money. If I knew, I would have taken my child again for treatment.' U-M7  
'I have heard they give good medicines and food for the child regularly throughout the 15 days which makes the child get back to normal… and send the child back healthy.' R-AWW4  
'I have told them [parents of severely wasted children] they [NRC staff] will give food and the treatment is free and they will also give money of Rs.250/day. But these people won’t listen to me.' U-AWW3 | 'We give them [mothers] food as well a daily wage compensation of Rs.259 per day. All is sent through money transfer as earlier we had problems if they were not getting it on time.' U-NRC nutrition counsellor |
| Duration of stay and wage compensation         |                                     | 'The mother will be having another child, or they are not ready to stay for a long duration… Another thing is that money, Rs.175 is very less amount. When they go for daily wages, they will get around Rs.300–400 per day. They feel that just Rs.175 is of no use for them.' R-NRC nutrition counsellor  
'Most of the mothers if they come here, they will stay for a long time, since everything is provided to them. Minimum they stay for at least 7 days and the maximum it goes up to 15–20 days. Some mothers feel that their child is being treated well and they too do not want to go to daily wage work. So, till their child is being treated healthy they will make sure they stay for that period or even further and then they will go.' R-NRC medical officer  
'We give them [mothers] food as well a daily wage compensation of Rs.259 per day. All is sent through money transfer as earlier we had problems if they were not getting it on time.' U-NRC nutrition counsellor |

ASHA, accredited social health activist; AWW, Anganwadi worker; F75, Formula 75; M, mother; R, rural; SAM, severe acute malnutrition; U, urban.
variability in the provision of meal portions between districts. Few mothers were unaware of the extra quantity provided as additional nutritional supplementation for severely malnourished, while others voiced that insignificant quantities of extra portions were served. AWWs also reported differences in portions doled out. As per the AWWs, in the HCM, eggs were provided 3–4 days/week and 5 days/week in urban and rural areas, respectively. For children availing THR, eggs were selectively included only on submission of necessary approval letters from the medical officers at the district hospital. Very often, due to high work burden and distance, mothers failed to collect the letter. Also, concerns were raised on the quality of supplementary nutrition provided including the nutrimix powder (a cereal–pulse combination) and milk.

At PHC (community’s first point of contact with a medical doctor), those with deterioration in health and poor appetite were referred by FLWs as part of their regular duty to monitor the health status of those severely wasted in the community. However, mothers very often refused a regular check-up in the PHC or admission to a district hospital. Few opted for private healthcare facilities citing ease of access, quicker recovery without the need for admission which translated into less wage loss due to less time spent in hospital.

At NRC, not all mothers benefited from the interventions as economic and household responsibilities influenced the child’s length of stay. Mothers opted for early discharge after basic treatment stating inadequate daily wage compensation, delays in receipt of compensation, inconvenience of payment through bank transfers rather than cash in hand, compelling family responsibilities and long distances to the health facility. Few mothers were unaware of wage compensation and cited their lack of knowledge/education as reasons. According to HCPs, urban mothers tend to stay longer to avail additional medical therapy. Motivations for a longer hospital stay included earlier loss of an offspring or provision of free treatment with wages and food.

**Barriers and challenges of caregiving and care-seeking behaviour**

A major challenge quoted was poor communication between mothers and HCPs. Mothers faced social stigma from the community and HCPs on their child being severely malnourished affecting access to healthcare. HCPs faced several challenges in the management, treatment and monitoring of severely wasted children specifically, extended work hours, inadequate training, shortage of raw materials and insufficient remuneration resulting in communication gaps and ineffective outcomes.

**Differences in priorities and understanding**

Both mothers and HCPs expressed frustrations on repeated attempts to improve care of the severely malnourished child. For mothers, it was the choice between missing a day’s wage and attending to the child without the money needed to care for the child. HCPs, however, related severe wasting to the mother’s lack of knowledge, ignorance, indifference, apathy or negligence. It appears to be the vicious cycle of poverty, struggles between needs and priorities and certain mindsets that forced mothers to seek quick fix interventions for their ill child, rather than address the underlying perpetuating problems that counselling interventions direct them towards.
Teacher tells me for health camps, but I do not go. It will be usually at 11 or 12’o’clock and in Raichur it is very hot. This health camp is not near… I cannot carry my daughter and go… I need to take care of even the travel expense. With that [money] I can buy some food for the house and my daughter can rest at home. (R-M1)

The teacher tells me to fill up forms and buy things. I do not know how to do it. Because of this I do not go to the anganwadi… (U-M6)

70% of the mothers do not care what we say… they will not obey us. They think with syrup the child will automatically become normal. Despite giving the syrups, when mothers do not give good food to them, whatever little help the syrup did, will be a waste. (R-PHC medical officer)

Trust issues
In both locations, mothers complained about poor hygiene and lack of growth monitoring tools at the Anganwadi. Urban mothers expressed a certain level of scepticism as they questioned the quality and quantity of food provided and preferred regular monitoring by higher authorities. Despite repeated health advice and nutritional counselling by HCPs, mothers reported receiving no proper medical information on or support services when their child’s health deteriorated.

Perceptions of stigma and shaming
Mothers perceived that their child’s visual appearance and weakness were ridiculed and targeted by other children. FLWs, too, constantly labelled mothers as ‘without knowledge’, ‘lazy’, ‘irresponsible’ and ‘careless’, leading to defensive behaviour on the part of the mothers.

We used to send her to the Anganwadi, but other kids started pulling her hair and making fun of her saying her eyes are like this, she is always salivating …all that…. (R-M1)

Knowledgeable people take good care of children by giving food on time to kids. People without knowledge are reasons why we get children with SAM. (U-ASHA1)

Loss to follow-up due to distance or migration
Family responsibilities (care of other children, household tasks, earning daily wages, mothers’ lack of time and feasibility of travel) resulted in poor compliance with treatment regimens. FLWs stated migration of families and relocation of homes as common reasons for loss to follow-up of these children, resulting in relapse.

There is around 50% of relapse. Some people are migrants. They go to work in Bengaluru or some other places. If they go, we do not have any contact. (R-NRC medical officer)

We give a lot of pressure to them [in following up the severely wasted child], then they change the slum area and go to another slum area. Even if we track them and speak to them, they fight saying ‘It is my child, I will do anything with them, what is your problem?’ (U-AWW4)

Overburdened and under-resourced HCPs
FLWs, especially AWWs, were burdened with multiple responsibilities of preschool education, growth monitoring, surveys, provision of rations to beneficiaries and monthly meetings organised by supervisors. Supplementary work such as election/poll duties and record maintenance were additional burdens. Dissatisfaction with work, low remuneration coupled with delayed receipt of monthly honorarium, poor family support and underappreciation of their services by the community were cited as demotivators.

DISCUSSION
This study enabled an understanding of mothers’ and HCPs’ views on perpetuation of severe wasting and differences and challenges of the management practices by both the health system and the community. Similar views on poverty and illiteracy emerged from mothers and HCPs. However, treatment of the child was affected due to distinctly different care practices and challenges faced among and between mothers and HCPs.

Poverty within households emerged as the underlying systemic factor across all themes that interfered with sustained uptake of any intervention to address severe wasting. With poverty driving hunger, investments to improve social sector infrastructure and food security and to transform food systems are required. Policies and safety net programmes such as facility-based care for SAM, the ICDS and National Food Security Act exist, but lacunae need to be plugged with efficient intersectoral convergence. Several countries have successfully treated SAM with the help of RUTF. The Government of India, however, has not encouraged its use considering cost and acceptability. Apart from this, the Ministry of WCD’s circular claimed that ‘use of RUTF may replace nutritional best practices and family foods’. To ensure a continuum of care and to reduce prevalence, energy-dense food distributed through a community-based programme for a short period of time is essential to bridge the gap.

Not only nutrition, but other nutrition-sensitive factors such as repeated morbidity, poor immunisation rates and environmental factors of open defecation and access to clean water are associated with SAM. The improved sanitation rates in Raichur and Bengaluru districts, our two study sites, are yet to reach the target of 100% and require attention particularly with current reported rates at 53% and 90%, respectively. Maternal malnutrition, including multiple pregnancies and poor antenatal practices, and child dietary habits are other contributory risk factors highlighted for SAM from these lived experiences. Our results reinforce earlier findings but provide...
cultural nuances and the fact that the ground reality still exists.

Intersectionality of gender, class and caste does play a role in poverty and inequality. Blame and contempt often derived from caste biases are more covert and hence implied and not overtly articulated by our respondents. Denial of access to healthcare, education and other basic amenities is possibly contributed by caste–class discrimination and marginalisation. Social stigma, gender disparity and poor sanitary and environmental conditions can probably be addressed through village dramas and short films as a community engagement strategy.

Early identification of severe wasting at home through visual and behavioural signs of thinness, lethargy and irritability holds promise, but confusion of ‘thinness’ as a hereditary factor appears to normalise the condition of wasting. Inaccuracy of anthropometric measurements in the identification of SAM and faulty reporting can further distort data used in policy and programme decisions and can lead to inefficient resource allocation. Revised protocols with standardised measurement techniques and improved training of FLWs must be taken as an urgent priority in accurate reporting of SAM. It is known that overstretched and underpaid FLWs result in demotivation and difficulties in sustaining attention to families with severely malnourished children. Capacity building, supportive supervision and community and stakeholder recognition might motivate HCPs. Effective communication and relationship-building efforts are imperative to bridge knowledge and trust gaps to negate trust deficits between HCPs and mothers. Caste and class prejudices, too, must be considered in these efforts. An impersonal information transfer and didactic system of nutritional and health education without two-way engagement and stakeholder involvement may have led to misunderstandings between mothers and HCPs.

With illiteracy and caste–class discrimination of beneficiaries and failure of universal delivery of health services within the public health system, the effective operation of a SAM programme can be obstructive. Our study reiterates that access to health services was disrupted especially due to rural–urban and between-settlements migration, a hurdle that needs to be resolved through economic and social upliftment.

There is a need to optimise and monitor the uptake and coverage of the ICDS programme with improvement in the quality and quantity of supplementary nutrition. Lack of synchronisation between public health programmes monitored by the various departments indicates deep-seated challenges in the identification and treatment process for SAM. Strategies such as strengthening community-based care and referral systems and use of mobile technologies to track children can be rewarding. Improved and intensified training among HCPs coupled with involvement of caregivers and community in childcare skills and practices and removal of associated stigma would ensure a continuum of care. Exploration of the use of local governing functionaries such as community or panchayat leaders, village councils, health extension workers or well-informed elders of families as positive influencers and support to both the FLWs and mothers could help in transparency and accountability of services.

Non-usage of NRC benefits was attributed not only to financial difficulties and food insecurity within families, but also to poor attendance. Despite the hospital and wage support facilities for complicated cases, inadequacy or delay in wage compensation of parents, discharge against advice and relapse negate desired benefits.

A single-pronged malnutrition alleviation strategy fails due to the complexity of the problems on the ground, as made apparent through respondents’ lived experiences. A multi-pronged intervention through a socioecological health model can add value to address the circumstances at specific system levels and those at the intersection of these systems (figure 2). For example, a ‘community–household integrating strategy’ by educating and motivating family members, engaging the neighbourhood community through participatory learning and action meetings, and home visits can provide more autonomy as well as more proximate support and may be beneficial in the long run. Documentation and promotion of success stories in tackling SAM may motivate FLWs in discharging their duties. Peer-to-peer motivational talks and events to celebrate successful recovery and non-relapse can in turn inspire young mothers’ acceptance of interventional programmes. Public and community support for improvement in water, sanitation and hygiene, banning the sale of commercial foods around community centres, enforced utilisation of work site creches through labour laws requires intersectoral policy coordination beyond a nutrition intervention by the WCD and Ministry of Health and Family Welfare. A commitment to prioritise interventions through elected leaders can be helpful. This coordinated concerted policy building towards amelioration of SAM can potentially address the factors that fall between the cracks in programme implementation.

The main strength of our study is that we examined, in an in-depth qualitative format, stakeholders’ and beneficiaries’ perspectives in the context of SAM and its related public health programmes unlike previous research in India. The insights gained can guide future research on targeted interventions. Through our study, we have delineated the complexity of SAM and its management as an interdependent phenomenon.

In-depth insights are from perspectives and lived experiences in a selected geographical region and therefore, may not be generalisable at a national level or to other sociocultural settings. It is possible that during translation, some nuances may have been lost. Going back to field sites to share the findings of the study was not possible due to government restrictions on travel and participant contact due to the COVID-19 pandemic.
CONCLUSION

Overall, there is a need to ensure a continuum of care for severely malnourished children. The underlying reasons perpetuating SAM were derived from the lived experiences of respondents. They point to emphatic early detection and sustained treatment. Families with wasted children are plagued with economic and household constraints including erratic employment, migration for livelihoods, food insecurity and poor living conditions. Management and care gaps can be plugged by strengthening and improving communication and trust between the HCPs and the caregivers and their families, ensuring a continuum of care. Further research is required to develop local context-specific solutions to alleviate malnutrition.

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Ethics approval This study involves human participants. Prior to recruitment, permissions from WCD and Ministry of Health and Family Welfare (H&FW), Government of Karnataka, were obtained. The study was approved by the Institutional Human Ethics Committee of both St John’s Medical College, Bengaluru (ref no. 366/2017) and University of Mysore (HEC-UOM No.164/Ph.D/2019-20). Written informed consent was obtained from participants.

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1. Home
2. Community/ Anganwadi
3. Primary healthcare centre
4. District hospital with nutritional rehabilitation centre

- Traditional and spiritual healers
- Home remedies

- Screening children for SAM
- Periodic anthropometric checks
  - Weight
  - Height
  - Mid-upper arm circumference
- Food supplementation by ICDS:
  - <3 years - take home rations
  - >3 years - Hot cooked meal
- Health and nutritional counselling to mothers
- Dissemination of nutrition and health information through village health and nutrition days

- Meetings with outreach workers
- Monthly SAM camps
- Provision of medicine as required:
  - Antibiotics
  - Anthelmintics
  - Vitamin and mineral syrups
  - Protein powder
- Nutrition advice and counselling
- Referral to NFIC
- Follow up on malnourished children

- Assessments
- Anthropometry
- Appetite test
- Admission if complicated (minimum stay of 14 days)
- Addressing emergency conditions in complicated cases
  - Medical treatment
  - Nutritional therapy
  - Stabilization - F75
  - Rehabilitation - F100 followed by nutrient dense meal
- Health and nutrition counselling
- Training of parents on diet, food preparation and hygiene
- Wage compensation for caregivers

Supplemental material