Outpatient therapeutic program

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Outpatient Therapeutic Program

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Abstract

One strategy for treating acute malnutrition in the community is the outpatient therapeutic program (OTP), which involves the community involvement, providing children with good appetites and management of uncomplicated severe acute malnutrition among children of 6–59 months old by providing them ready-to-use therapeutic food at home along with standard medical care. Approximately 85%–90% of kids with severe acute malnutrition are effectively treated at home in OTP by coming in frequently till they become well. With OTP, severe acute malnutrition management services are offered closer to the community at primary healthcare institutions, where children with simple severe acute malnutrition get varying amounts of ready-to-use therapeutic food such as Plumpy' Nut sachets depending on their body weight. OTP are a vital component of the global effort to address malnutrition in children. These programs typically involve providing nutrient-dense therapeutic foods to children, along with regular medical checkups and counseling for caregivers on feeding practices and nutrition. Studies have shown that OTPs can lead to significant improvements in weight gain, recovery rates, and reduction in mortality among children with severe acute malnutrition. OTPs have also been found to be cost-effective and can be scaled up to reach a large number of children. OTPs can provide life-saving treatment to children suffering from SAM and help prevent the long-term consequences of malnutrition.

Keywords:

Outpatient therapeutic program, ready, severe acute malnutrition-to-use therapeutic food

Background

One method of community-based management of acute malnutrition (CMAM) is the outpatient therapeutic program (OTP), which involves community involvement and mobilization for the outpatient management of mild-to-moderate severe acute malnutrition (SAM) in children 6–59 months of age who have a good appetite while also providing them with routine medical care.[1,2] Children with SAM are effectively treated at home in OTP at regular intervals (often once a week) until they recover in approximately 85%–90% of cases (usually a 2-month period). The program is carried out independently by mobile teams or at health facilities, through the weekly or biweekly delivery of ready-to-use therapeutic food (RUTFs) and common medications, as well as the monitoring of health and nutrition. Children treated might be admitted to SFP after recovery and discharge to avoid recurrence with supplemental nutrition.[3,4] By providing treatments at decentralized locations inside primary healthcare settings, OTP brings the management of SAM closer to the community.[5,6] When children are recovering from SAM, RUTFs, which are highly fortified, energy-dense pastes, are intended to completely meet all of their nutritional demands.

By providing the necessary facilities and programs in more places, the outpatient treatment of SAM programs seeks to increase access to treatment for all people.[7] Millions of children are being treated for SAM each year as a result of the tremendous global growth of community-based treatment programs.[8] Children with simple SAM who get community treatment often have a CFR of less than 5%.[9] Children who are uncomplicatedly extremely malnourished

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should be treated as outpatients by giving them weekly doses of RUTF, which they may frequently follow at home if they are clinically well, aware, and still have an appetite.[10-12]

The four basic principles—maximum access and coverage, promptness, appropriate care, and care for the full necessary duration—are essential to the SAM treatment program.[13] The initiative aims to reach all extremely malnourished children before they experience any medical difficulties and to offer them the necessary care up to their recovery. The initiative actively seeks for cases of acute malnutrition in the community using community health professionals or volunteers. The therapy of severely undernourished children should include routine medicine supplements, such as vitamin A, folic acid, antibiotics, deworming, and measles vaccination.[14]

Children with SAM should get prompt therapy with short-term, intense treatment regimens with the goal of rehabilitating the kid within a few weeks. Currently, OTP is used to speed up recovery from SAM. It brings SAM management services closer to the community at primary health care centers, where children with simple SAM get varying amounts of RUTF as Plumpy'Nut sachets depending on their body weight.[11,14] Every week or 2 weeks, the careers should bring their kid to the health facility or OTP station for a checkup and to get a weekly supply of RUTF. OTP should be implemented as routine treatments for CU5 in as many health institutions as feasible and should be integrated into current health services to achieve adequate geographic coverage and the accessibility of treatment for as many malnourished children as possible.[15,16]

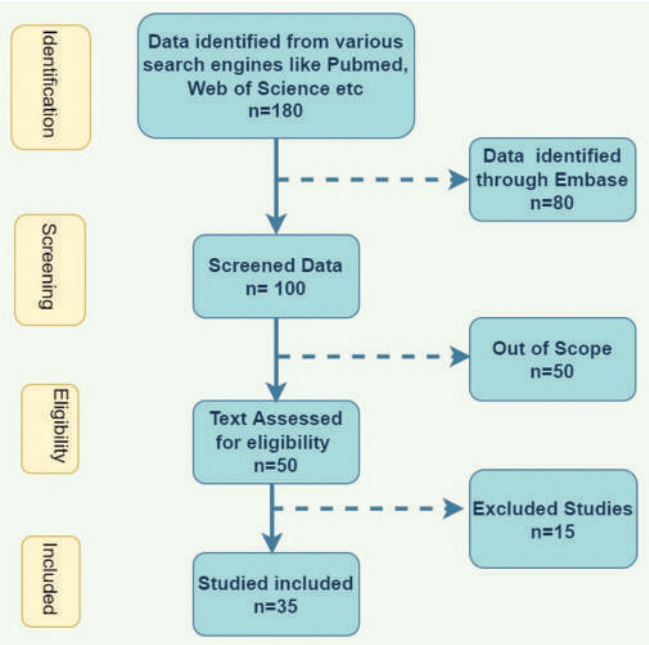

Figure 1: Identification of studies via database and registries

Therapeutic foods

Therapeutic foods, like RUTFs, were created to address anticipated caloric needs, treatment stage-appropriate protein, electrolyte, and micronutrient requirements, as well as initially limiting exposure to nutrients that could be harmful to children with metabolic instability or those who have infections, such as sodium and iron.[17,18]

RUTF

RUTF has saved the lives of many children worldwide and is both safe and affordable.[19] It is a uniform mixture of soft, lipid-rich foods including peanuts, oil, sugar, and milk powder as well as vitamins and minerals. It is a high-energy, micronutrient-enhanced paste that is given to children between the ages of 6 and 59 months who have uncomplicated SAM as therapeutic feeding. It does not require cooking or other preparation before eating. It has a long shelf life and may be kept unrefrigerated for 3–4 months.[9,20] As it does not require water, utensils, or other preparation before consumption, it may be used even in locations with subpar hygiene standards. It can be combined with other meals or nursing.[7] It has transformed the way SAM is treated, guaranteeing quick weight growth and saving many children's lives.[3,21]

Background of RUTFs

A nutritionist with extensive experience working in underdeveloped nations had a lightbulb moment in the mid-1990s while witnessing his kids consume hazelnut paste sweetened with sugar. He understood that a product like this has a very low water activity (2.5%), making it impossible for germs to grow inside of it even without refrigeration for up to a year before the fats start to become rancid.[22,23] He made the connection that such a product would transport milk powder and fortify cants for the treatment of SAM. At least the milk powder restriction may now be removed, the expert realized. The first RUTF, branded as "Plumpy'Nut," was produced in 1996 by the French business nutriset, which had already been providing therapeutic milks F75 and F100 for a decade for the hospital-based treatment of SAM. Despite being relatively straightforward, consisting mainly of peanut paste (25%–30%), sugar (28%), skimmed milk powder (20%), vegetable oil (15%–20%), and additional nutrients (2%), it is necessary to purchase a premade nutrient blend in order to keep the amounts of each nutrient within a relatively narrow range.[12,22,24]

Admission Criteria in Outpatient Therapeutic Program

The weight-for-height ratio of a child's height is calculated as a "Z-score" using the WHO Child Growth Standard, MUAC, and the presence of edema, as per the

national standards for the treatment of SAM based on recommendations from WHO, UNICEF, and WFP. The following cutoffs are listed succinctly:[3,20,25]

- ✓ Bilateral pitting edema in the first (+) or second (++) degree.
- ✓ Mid-upper arm circumference of 115 mm.
- ✓ Weight-for-height/length of –3 *z*-score.
- ✓ Good appetite (passed RUTF appetite test).
- ✓ Clinical well-being, and alertness (no medical complications).

Preventative Measures and Routine Drugs Used in OTP

In accordance with local, national, and international recommendations, all SAM programs should contain systematic treatments.[26] Children who are admitted directly to the OTP should be given a brief and regular course of basic oral medications, such as antibiotics (Amoxicillin), anti-worms (as Albendazol or Mebendazole), anti-malaria, vitamin A, folic acid, measles vaccination, and some prevention packages, such as soap and bed nets. It increases the rate of healing and lowers the risk of serious bacterial infections.[3,20,27,28] For the treatment of uncomplicated SAM, broad-spectrum antibiotics have been conditionally advised.[13] The present evidence supports the ongoing use of wide-spectrum oral amoxicillin for the treatment of children with uncomplicated SAM, according to Williams and Berkley's[9] systematic review.

Health and Nutrition Education in OTP

The OTP gives caregivers the chance to discuss crucial health messages. When a kid is first enrolled in the program, it is crucial to make sure they understand how to administer RUTF, how to take the antibiotic at home, and how to practice good cleanliness.[12,29] Give the mother an explanation of the grounds for the kid's admission to the OTP, the treatment's guiding principles, the daily amount of food the child must eat, and any medical interventions. To prevent contamination of the leftover RUTF, demonstrate in practice how to open the RUTF sachet, how to feed the kid, how to wrap up the sachet after feeding, and how to keep RUTF at home. It is very crucial to motivate mothers to return to the health clinic at any time if the child's condition deteriorates.[3,22,30]

Exit/Discharge Requirements for OTP

It is important to determine a child's nutritional recovery using the same anthropometric indication that is used to validate SAM. The OTP's discharge standards are given in Table 1.[7,25]

Table 1: Exit criterion

Exit forms	Exit criteria	Definition
Cured	• Mid-upper arm circumference ≥ 115mm for at least 2 consecutive visits* Or • Weight-For-Height/Length ≥ -3 z-score for at least 2 consecutive visits* And • No bilateral pitting edema for 2 consecutive visits. And • Child is clinically well and alert	Number of individuals recovered/total number of discharged x 100
Defaulter	Child was absent for 2 consecutive visits	Number of defaulters/total number of discharged x 100
Nonrespondent	Child did not meet discharge criteria after 3–4 months in OTP	Number of individuals not recovered/total number of discharged x 100
Transfer out	Child referred to SC/ITP or another OTP	Number of individuals referred to in-patient care or to another OTP/total number of discharged x 100
Medical transfer	Child referred to a hospital or health facility and not in any nutrition program	Number of individuals referred to any health facility and not in any nutrition program/total number of discharged x 100
Died	Child died while registered in OTP	Number of deaths/total number of discharged x 100

*In the context where there is no TSFP, children aged 6–59 month with SAM should only be discharged from OTP when: MUAC is ≥12.5 cm for two consecutive visits or WFH/L is ≥–2 *z*-score for two consecutive visits and no bilateral pitting edema for two consecutive visits and clinically well and alert (UNICEF, 2015b; WFP *et al*., 2017; WHO, 2013)

Common Reasons for OTP Failing to Respond

Problems related to the quality of the treatment:

Issues with the treatment's quality include a variety of factors, including inadequate guidance for the mother's home care, an excessive gap between OTP follow-up visits, shortage of RUTF, inappropriate evaluation of the child's health condition or a missed medical complication, inappropriate evaluation of the appetite test, and poor adherence to the RUTF protocol and routine medication protocol.[31]

Problems related to home environment:

The primary causes of home environmental issues that contributed to treatment failure are insufficient intake or sharing of RUTF or medications with other family members, irregular attendance or missed follow-up appointments, and an unwilling mother who is overburdened with other work and responsibility.[9,32,33]

Monitoring and Evaluation of OTP

To prevent a recurrence, children who complete a treatment program should be followed up on a regular basis. A trained healthcare professional at a local clinic or in the community should follow up with children being handled as outpatients, including assessing their response to therapy and providing the next supply of RUTF, ideally once a week.[2,7,34,35] To assure the quality-of-service delivery, monitoring, and assessment of OTP services are crucial. It is conducted in two levels:[8,16,36]

Individual level

- Weekly follow-up visits to the OTP site allow for the tracking of each SAM case's progress.
- Using referral slips and registration numbers, individual cases are monitored as they are transmitted between various components (SC/ITP, OTP, and TSFP).

Program level

- At various levels of healthcare, monitoring data are used to create monthly reports;
- Program outcomes are contrasted with a minimum required performance indicators for Sphere standards as shown in Table 2.[26]
- It is crucial for the supervisor in-charges of the OTP to timely and accurately analyze the various indications in order to identify issues and enable appropriate and rapid action.
- Supervisors at various levels of the healthcare system do monthly and quarterly oversight.

Table 2: Summary of the sphere project reference values of OTP[26]

Outcome indicators	Acceptable	Alarming
Cure rate	>75%	<50
Default rate	<15%	>25
Died rate	< 10%	>15
Non responders rate	No standard	No standard
Length of stay	< 6 weeks	>6 weeks
Rate of weight gain	≥8 g/kg/day	<8 g/kg/day
Urban coverage	>70%	<40
Rural coverage	>50%	<40
Comp coverage	>90	<40

Minimum Requirements for the Performance of Outpatient Therapeutic Program

OTP's performance metrics are based on the minimal SPHERE requirements established by legitimate international standards. Any OTP locations that fall short of the required standards are deemed to be below acceptable levels, and improvements must be made to the caliber of service provided. The allowable Sphere minimums are shown in Table 2. These recommendations are used in emergency situations to promote accountability to the humanitarian system in disaster response and to improve the quality of aid delivered to those impacted by catastrophes.[26]

Methods

Following PRISMA guidelines, databases from MEDLINE, EMBASE, Web of Science, and PubMed were used to review the literature. The terms "Impact of COVID on Children," "psychological impacts, Negative impacts," "quarantine," "SARS-CoV-2," "COVID-19," "nursing care," "nursing management," "clinical management," and "infection control and prevention in COVID-19" were used as key phrases, per the Medical Subject Headings (MeSH) [Figure 1]. Studies in English have always been included. Grey literature was also examined to learn more about the epidemiology and treatment of this particular ailment.

Conclusion

CMAM using OTPs has emerged as an effective approach to treating mild-to-moderate SAM in children aged 6–59 months. OTP involves community involvement and mobilization, providing routine medical care, and delivering RUTF and common medications to children with SAM. RUTFs, such as Plumpy'Nut, are highly fortified, energy-dense pastes that can meet all the nutritional demands of recovering children with SAM. OTP brings SAM management closer to the community by providing treatment at decentralized locations

inside primary healthcare settings, increasing access to treatment for more people. It has been shown to have a high recovery rate, with children treated at home in OTP typically recovering in approximately 85%–90% of cases. The four basic principles of maximum access and coverage, promptness, appropriate care, and care for the full necessary duration are essential to the success of SAM treatment programs. Therapeutic foods like RUTFs have revolutionized the way SAM is treated, providing a safe, affordable, and effective solution for managing acute malnutrition in resource-limited settings. With ongoing efforts to integrate OTP into existing health services and ensure adequate geographic coverage, community-based management of acute malnutrition using OTP and RUTFs has the potential to save the lives of millions of malnourished children worldwide.

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There are no conflicts of interest

Authors' contributions
Both authors made intellectual contributions to the work and gave final approval before submission.

Availability of data and material
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