Review article

OUTPATIENT THERAPEUTIC PROGRAMME FOR MALNOURISHED CHILDREN

Abstract

Outpatient therapeutic programme is one of the approaches of community-based management of acute malnutrition, which includes community engagement and mobilization for outpatient management of uncomplicated severe acute malnutrition children 6–59 months with good appetite, by providing them by home-based treatment as Ready-to-use Therapeutic Food and routine medical treatment. Around 85-90% of children with SAM are successfully treated at home in OTP, by attending regular intervals until they recover. OTP is currently used to achieve rapid recovery from SAM, it provides services of SAM management closer to the community at primary health care facilities, where uncomplicated SAM children receive different amount of RUTF as Plumpy'Nut sachets according to their body weight.

Keywords: Outpatient therapeutic programme, severe acute malnutrition, Ready-to-use Therapeutic Food

Introduction

Outpatient therapeutic programme (OTP) is one of the approaches of community-based management of acute malnutrition (CMAM), that includes community engagement and mobilization for outpatient management of uncomplicated severe acute malnutrition (SAM) children 6–59 months with good appetite, by providing them by home-based treatment as Ready-to-use Therapeutic Food (RUTF) and routine medical treatment (UNICEF, 2015a; WFP et al., 2017). Around 85-90% of children with SAM are successfully treated at home in OTP, by attending regular intervals (usually once a week) until they recover (usually a two month period). The programmeme implemented as standalone by mobile teams or in health centers by weekly or biweekly distributions of RUTFs and routine medicines, and medical and nutritional monitoring. After recovery and discharge, treated children can be admitted in SFP to prevent relapse through supplementary food (JMoH, 2013). OTP brings the management of SAM closer to the community by making services available at decentralized treatment points within the primary health care settings (John et al., 2018; WVI, 2017). RUTFs are highly fortified energy dense pastes that are designed to fulfill 100% of the nutritional needs of children during the recovery from SAM.

The outpatient treatment of SAM programmemes aims for a more widespread access to treatment primarily by establishing the appropriate facilities and activities within more communities (UNICEF, 2012). The rapid expansion of community based treatment programmemes worldwide, lead to every year millions of children are treated for SAM (Briend & Berkley, 2016). Typically, children treated in the community with uncomplicated SAM have a CFR of less than 5% (Williams & Berkley, 2018). Uncomplicated severely malnourished children should be managed as outpatients, by providing them with weekly of RUTF, which can often be follow at home if the child have a clinically well, alert and a retain appetite. (Jones & Berkley, 2014; Lenters et al., 2016; WHO, 2019; Williams & Berkley, 2018).

SAM treatment programmeme depends on the four following principles; maximum coverage and access, timeliness, appropriate care and care for as long as it is needed (Lenters et al., 2016). Therefore the programmeme strives to reach all severely malnourished children before the development of medical complications and to provide appropriate care until recovery. The programmeme uses community health workers or volunteers to actively find cases of acute malnutrition within the community. The severely malnourished children treated should be supplement with the routine medications during the treatment course such as vitamin A, folic acid, antibiotics, deworming and measles vaccine (Al Amad et al., 2017).

Children with SAM should be treated proactively with intensive treatment regimens of short duration, aiming to rehabilitate the child in a few weeks. OTP is currently used to achieve rapid recovery from SAM, it provides services of SAM management closer to the community at primary health care facilities, where uncomplicated SAM children receive different amount of RUTF as Plumpy'Nut sachets according to their body weight (Al Amad et al., 2017; WFP et al., 2017). The caregivers should be visits the health facility or OTP point every week or two weeks with their child for a medical checkup and to receive a weekly supply of RUTF. OTP should be operated in as many health facilities as possible and should be incorporated into existing health services as a component of routine services for CU5, this ensures good geographic coverage so that as many malnourished children as possible can access treatment (WFP et al., 2017).

Therapeutic foods:

Therapeutic foods such as RUTFs, were designed for nutritional and metabolic stabilization and rehabilitation, and their use aims to address anticipated calorific needs and treatment stage-appropriate protein, electrolyte and micronutrient requirements, in addition to initially limiting exposure to nutrients that could be harmful to metabolically unstable children or those with infections, such as sodium and iron (Bhutta et al., 2017).

Ready-to-use Therapeutic Food (RUTF):

RUTF is safe, cost effective, and has saved hundreds of thousands of children’s lives around the world (UNICEF, 2013). It is a homogenous mix of lipid rich soft foods; include peanuts, oil, sugar, milk powder and vitamin and mineral supplements. It is a high-energy, micronutrient enhanced paste used as therapeutic feeding to treat uncomplicated SAM children from 6 to 59 months. It does not need to be cooked or prepared before consumption. It has a long shelf life, and it can be stored for three to four months without refrigeration (UNICEF, 2015c; WHO, 2020b). It can be used even in areas where hygienic conditions are not optimal because it does not need water, utensils etc., before taking it. It can be used in combination with breastfeeding or other foods (UNICEF, 2013). It has revolutionized the treatment of SAM, ensuring rapid weight gain, and saving the lives of many children (WHO, 2020b).

History of RUTF:

In the mid-1990s, a nutrition expert with long experience in developing countries, had a eureka experience while watching his children eat hazelnut paste mixed with sugar. He realized that such a product has such a low water activity (<2.5%) that bacteria cannot thrive in it, even without refrigeration, in some cases for about a year before the fats will begin to go rancid. He connected the dots: such a product could serve as a vehicle for milk powder and fortify cants in the treatment of SAM. The expert realized that at least the milk powder constraint could now be overcome. In 1996 a company in France named Nutriset, which had

already for a decade been producing therapeutic milks F75 and F100 for hospital-based treatment of SAM, began producing RUTF, the most well-known of which is called “Plumpy 'Nut”. While it is relatively simple, being composed largely of peanut paste (25-30%), sugar (28%), skimmed milk powder (20%), vegetable oil (15-20%), and additional nutrients (2%), maintaining the quantities of each nutrient within a relatively narrow range requires the purchase of a ready-made nutrient blend (Greiner, 2014).

Admission criteria in OTP:

According to the national guidelines for management of SAM based on WHO, UNICEF and WFP recommendation, admission criteria in OTP are determined by a child’s weight and height, by calculating weight-for-height as “Z-score” using the WHO Child Growth Standard, MUAC and presence of oedema. Cutoffs are summarized as the following (UNICEF, 2012, 2015b; WFP et al., 2017; WHO, 2013, 2020a):

- ✓ Bilateral pitting oedema 1st (+) or 2nd (++) degree, or
- ✓ MUAC < 115 mm, and/or
- ✓ Weight-for Height/Length < -3 z-score, and
- ✓ Good appetite (passed appetite test for RUTF), and
- ✓ Clinically well and alert (no medical complications)

Routine medications and prevention package used in OTP:

All SAM programmemes should include systematic treatments according to national or international guidance (Sphere, 2018). Children admitted directly to OTP should receive a short and routine course of basic oral medication such as antibiotic (Amoxicillin), anti-worms (as Albendazol or Mebendazole), anti-malaria, vit A, folic acid and measles vaccination, and some prevention package as soap and bed net. It reduces the risk of severe bacterial infection and improved the recovery rate (MoPHP, 2014; Pati et al., 2018; WFP et al., 2017; WHO, 2013). The use of broad-spectrum antibiotics has been conditionally recommended for treatment of uncomplicated SAM. (Black et al., 2016). A systematic review conducted by Williams and Berkley (2018), concluded the current evidence supports the continued used of broad spectrum oral amoxicillin for treating children with uncomplicated SAM.

Health and nutrition education in OTP:

The OTP provides an opportunity to talk over important health messages with caregiver. When a child is first admitted to the programmeme, it is essential to ensure that information about how to give RUTF, how to take the antibiotic at home, and basic hygiene are understood. Explain to the mother reasons for admitted to OTP, and principles for treatment, including the daily amount the child will need to consume, any medical action taken. Explain in practice how to open the RUTF sachet, how to feed the child, how to roll up the sachet after feeding to prevent the contamination of the remaining RUTF, and how to store RUTF at home. It is very important to encourage mothers to return to the health facility at any time if the child’s condition deteriorates (WFP et al., 2017).

Discharge criteria of OTP:

The anthropometric indicator that is used to confirm SAM should be also used to assess whether a child has reached nutritional recovery. The discharge criteria of OTP are listed in (table 1) (UNICEF, 2015b; WFP et al., 2017; WHO, 2013).

Table 1:Exit criteria of OTP

Exit forms	Exit criteria	Definition
Cured	• MUAC ≥ 115mm for at least 2 consecutive visits* Or •WFH/L ≥ -3 z-score for at least 2 consecutive visits* And • No bilateral pitting oedema 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	**N**umber of defaulters/total number of discharged x 100
Non respondent	Child did not meet discharge criteria after 3-4 months in OTP	**N**umber of individuals not recovered/total number of discharged x 100
Transfer out	Child referred to SC/ITP or another OTP	**N**umber of individuals referred to in-patient care or to anther OTP/total number of discharged x 100
Medical transfer	Child referred to a hospital or health facility and not in any nutrition programmeme	**N**umber of individuals referred to any health facility and not in any nutrition programmee /total number of discharged x 100
Died	Child died while registered in OTP	**N**umber of deaths/total number of discharged x 100

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

Frequent causes of failure to respond in OTP:

Problems related to quality of the treatment: There are many causes associated with quality of the treatment lead to response failure such as inappropriate evaluation of child's health condition or missed medical complication, inappropriate evaluation of appetite test, poor adherence to RUTF protocol, poor adherence to routine medication protocol, inadequate guidance for home care provided to mother, excessive time between OTP follow up visits and stock out of RUTF leading to irregular re-fills (WFP et al., 2017).

Problems related to home environment: The main causes of home environment that contributed with treatment failure are inadequate intake or sharing of RUTF or medicines with other members of the family, irregular attendance or missed appointments of follow up visits and unwilling mother overwhelmed with other work and responsibility (WFP et al., 2017).

Monitoring and evaluation of OTP:

Children who are discharged from treatment programme should be periodically monitored to avoid a relapse. Follow up of children being managed as outpatients, including monitoring of their response to treatment and provision of the next supply of RUTF, should be done, ideally weekly, by a skilled health care worker in a nearby clinic or in the community (Pati et al., 2018; UNICEF, 2015b; WFP et al., 2017; WHO, 2013). Monitoring and evaluation are important to monitor OTP services to ensure quality in service delivery. It is conducted in two levels (WFP et al., 2017; WHO, 2013):

- Individual level:

- Progress of individual SAM cases is monitored through weekly follow up visits to the OTP site.

- Individual cases are tracked as they are transferred between different components (SC/ITP, OTP and TSFP) using referral slips and registration numbers.

- Programmeme level:

- Monitoring data is used to compile monthly reports at different levels of health care;
- Programmeme outcomes are compared to minimum standard performance indicators for Sphere standards as table (2), (Sphere, 2018).
- Timely and correct interpretation of the different indicators by supervisors in charge of the OTP is essential to highlight problems and allow appropriate and prompt action.
- Monthly and quarterly supervision is done by supervisors at different levels of the healthcare system.

Minimum standards used in performance of OTP:

The performance indicators of OTP are based on the minimum SPHERE standards set by valid international. Any OTP sites which is not meeting the set standard, it is considered below the acceptable standard and actions is needed to improve on the quality of service delivery. Table 2, shows the minimum acceptable SPHERE standards. These guidelines use in emergency situation to improve the quality of assistance provided to people affected by disasters, and to enhance accountability to the humanitarian system in disaster response (Sphere, 2018).

Table 2: Summary of the Sphere project reference values of OTP (Sphere, 2018)

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	≥8g/kg/day	<8g/kg/day
Urban coverage	>70%	<40
Rural coverage	>50%	<40
Comp coverage	>90	<40

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