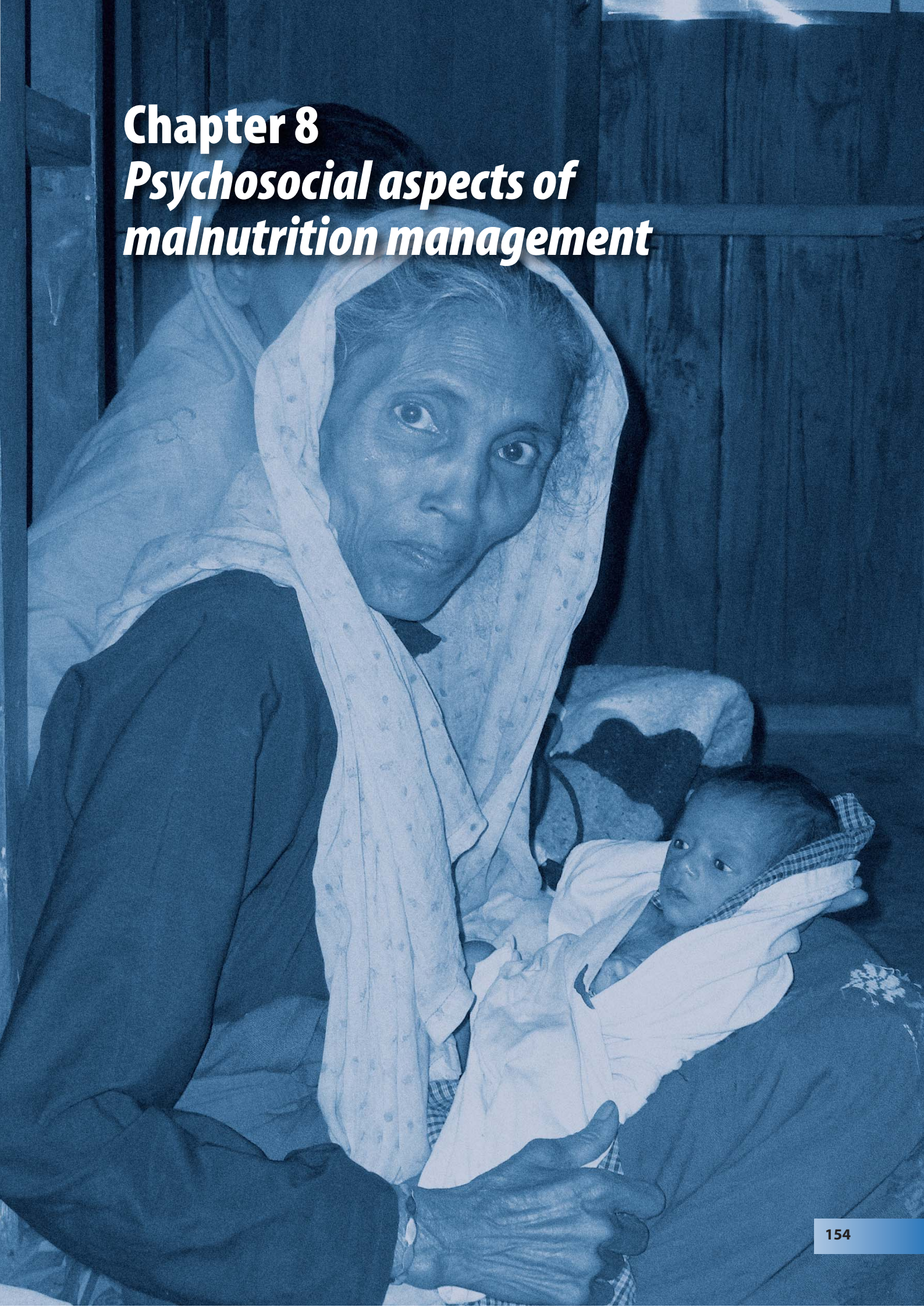


Chapter 8

Psychosocial aspects of malnutrition management



Chapter 8: Psychosocial aspects of malnutrition management

The chapter opens with a review of the scientific basis and feasibility of stimulation activities in the treatment of malnutrition, with particular reference to the WHO 1999 guidelines. The chapter then explores child care practices and some key influences of the maternal-child relationship on child malnutrition. It concludes with a look at the influence that maternal depression has on child malnutrition, building upon a recent review of maternal depression and child growth and again, considering implications for emergency programmes and infants <6m specifically. Overall recommendations are included at the end.

Much of the evidence base is not specific to infants <6m and/or emergency contexts – a reflection of the evidence gap to guide programming in this age group - but shares and applies relevant evidence from malnourished children and their mothers/caregivers.

8.1 Psychosocial stimulation in the treatment of malnutrition

8.1.1 WHO guidelines on psychosocial stimulation in the treatment of SAM

Children hospitalized for severe malnutrition have low levels of cognitive development and low school performance which last into adolescence.¹⁸⁹ Section 5.3 of the WHO 1999 guidelines¹⁹⁰ recommends integrating both emotional and physical stimulation into the treatment of severely malnourished children to reduce the risk of permanent mental retardation and emotional impairment, to promote the development of the child's motor skills and to enhance growth in the rehabilitation phase. Sections 5.4 and 5.5 deal with teaching parents the importance of preventing recurrence, as well as preparing for discharge and return home.

The following is a summary of the recommendations:

- The mother/ caregiver is a key resource person and partner with the medical team and should remain with the malnourished child.
- Sensory deprivation should be avoided.
- Centres should be decorated with the interests of children in mind.
- The number of adults interacting with the child should be kept at a minimum and contacts should be warm and affectionate.
- Local toys should be available.
- There should be both informal group play and individual play activities.
- Physical activity should be encouraged.
- Parenting skills should be taught to help prevent malnutrition.
- The home should be visited by medical or paramedical personnel before discharge to prepare for the child's reintegration into the home.

Both sections are relatively short and contain little information on how to provide the different activities, particularly staff training. The appendix contains examples of toys created out of ordinary and inexpensive materials that families can find easily at home. The WHO "Guidelines for the Inpatient Treatment of Severely Malnourished Children"¹⁹¹ provide a much more comprehensive list of activities. There is also added information in the appendix with more suggestions of games and activities that could be used. From here on we will call the activities recommended by WHO "*Stimulation and support activities*"

8.1 Psychosocial stimulation in the treatment of malnutrition

8.1.2 Scientific basis for the WHO recommendations

Relevant studies and experiences are few and often dated. For studies prior to 1990, we will use the Grantham-McGregor literature review. After 1990, only studies that use stimulation activities in the treatment of severely malnourished children are discussed. Two studies met our criteria: The 14 year follow-up study of a cohort of severely malnourished children by Grantham-McGregor¹⁹² and research recently conducted in Bangladesh.¹⁹³ The two studies compared the development of severely malnourished children that did and did not have stimulation activities included in their treatment, though the full WHO recommendations on psychosocial stimulation were not implemented in either.

The question of the scientific basis for the WHO recommendations is best answered when considered according to outcomes expected from implementation of the recommendations. Outcomes include:

- Improvements in the effectiveness treatment for severely malnourished children.
- Reduced risk of irreversible mental retardation and emotional impairment and to promotion of motor skills development in the child.
- Parents taught how to prevent a recurrence through a better understanding of what causes malnutrition.
- Preparation for discharge and return home.

Improvements in the effectiveness of the treatment of severely malnourished children

According to WHO, one of the goals of introducing stimulation and support is to promote growth during the rehabilitation phase, and if we delve further, to improve the treatment of severely malnourished children. Indicators of this may be increased weight gain, decreased duration of treatment and fewer children being discharged before full recovery.

The two studies that incorporated stimulation in the treatment for severely malnourished children did not specifically take these indicators into consideration. Nahar¹⁹⁴ shows a similar length of stay for the intervention group of children as for the control group, but the return home is explained by the mother's tasks at home and not by the child's recovery criteria. More children from the intervention group were lost to the study compared to the control group (39 versus 14%, $P = 0.006$). In spite of the fact that the overall treatment led to significant change in the children's nutritional status (weight at six months of age), 64% of the children remained severely malnourished ($WAZ < -3 SD$) and another 25% had $WAZ < -2 SD$ at the six month follow-up. The intervention group improved more than the control group by a mean of 0.4 ($P=0.029$; 95% CI: 0.1, 0.8) weight-for-age z scores, controlling for background variables.

In the Grantham-McGregor cohort,¹⁹⁵ malnourished children had the same height-for-age ratio 24 months after admission, whether they received stimulation or not. They were also smaller than the children in the group hospitalized for other causes (control). This difference from the control group was still significant at 72 months after admission. The three groups showed no difference in their weight-for-height ratio at 24 and 72 months after admission.

It is important to consider programmes that apply all of the WHO recommendations (these above studies did not). A holistic program introduced in Afghanistan by Action Contre la Faim (which includes numerous psychosocial activities, individual psychological support and upgrading of training for personnel) has led to a net improvement in nutritional program results. These include a decrease in those stopping their treatment and an increase in those recovering, though it is still impossible to identify the specific factors causing the improvement. (See Box 8). Other countries have included stimulation activities and support but these have not led to such a clear improvement in the rehabilitation of the child. None have been the subject of rigorous research to identify determining factors and resulting changes.

Additional research is needed to measure the impact of stimulation and/or support activities on the child's growth during the rehabilitation phase and on the effectiveness of the medico-nutritional treatment.

8.1 Psychosocial stimulation in the treatment of malnutrition

Box 8: Case history: Integrating mental health and care practices in Afghanistan

Integrating mental health and care practices in the treatment of SAM: A project by Action Contre la Faim in partnership with the Afghan Ministry of Public Health

Background

ACF has treated severe acute malnourished children in Afghanistan since 1997. The country has suffered from decades of armed conflicts, displacements of the populations, human and material losses. Few months after the 11th September 2001 and the fall of the Taliban Regime, the situation became more peaceful in most of the country; refugees started to return to Kabul. The economic situation was poor. In Kabul, ACF was running three therapeutic feeding centres in hospitals and 12 day-cares for about 1700 children per year.

At the End of 2002, the mission requested the visit of a psychologist to assess the mental health situation of the mothers in the nutrition centres: they were described as very sad and crying a lot. The evaluation confirmed that many of the women were suffering from psychological distress for many reasons including the war and its consequences in terms of loss of personal belongings, loss of landmarks, change of life, family separation, deaths, bombings, shootings, terror, the poor economic situation and job insecurity, feelings of powerlessness, and the powerful role of the mother-in-law. Poor mental health status of the population was confirmed by different surveys published in the following years.

Two other important facts were noted during the initial visit: 20% of the families defaulted before the end of treatment; this rate was described as the minimum rate because of cultural barriers that limit the access of the women to the health structures (especially at night). About 30% of children admitted for severe malnutrition were infants <6m, explained by mothers as due to their 'lack of milk'.

These findings were surprising since breast-feeding usually protects the infant and severe malnutrition appears after the age of six months, following weaning. In Afghanistan this protection does not seem to function properly. One hypotheses for this was that mothers who complain about insufficient milk are in fact trying to say something else about their relationship with their child, their isolation, or other factors affecting their mental health.

Description of the research programme

The project in Afghanistan has become a pilot project for a holistic approach for these children and their families, in combination with surveys to better understand the problem and assess the impact of the intervention. The research project includes:

- a nutrition survey on infants <6m in Kabul (n = 507 ; 2004)
- a KAP survey to compare maternal mental health, care and breastfeeding practices of mothers in three groups: mothers without lactation difficulties and well-nourished infants, mothers with lactation difficulties and well-nourished infant and mothers with lactation difficulties and wasted infants (n=105 per group; 2005).
- 2204 psychosocial files completed by the psychosocial workers for children admitted in the TFC
- 480 files on breastfeeding that were filled by the psychosocial workers for the infants <6m admitted in the centres
- focus group discussions on different topics
- collection of data from the psychological interviews that have been put in place in the TFC
- a study for assessing the survival and nutrition situation of children one year after discharge from treatment (n=100)

Main research outputs

The prevalence of severe acute malnutrition was small in the general population, demonstrating an over-representation of this age-group in the centres. However, 40% of women interviewed complained of lack of milk. 'Lack of milk' was accepted by communities and not associated with a depreciation of the recognition of the caring capacity of the mothers. When confronted with milk insufficiency (real or perceived), all the women applied the same coping strategies: no advice seeking and the introduction of, or increase in quantity, of other milks and complementary foods. The level of hygiene used (clean bottle and teat and boiled water) and knowledge (number of spoons of powder to add, etc) were determinant factors for malnutrition.

Care practices and breastfeeding practices were not optimum for the continuation of breastfeeding: the early initiation of breastfeeding is rarely done, infants are not always fed on demand, mothers don't know that production of milk increases with the stimulation of the breast by babies, skin-to-skin contact is not facilitated (children are swaddled, women wear a burka), etc. The medical staff and the mullah don't understand lactation mechanisms and recommend artificial milk when women encounter difficulties. All these factors were important and should be addressed but were not different in the three groups.

8.1 Psychosocial stimulation in the treatment of malnutrition

Box 8 cont'd

Many children that were malnourished had been low-birth weight babies according to their mothers or presented handicaps. These points might directly affect their capacity of suckling, but also their capacity to attract their caregiver. The child might as well not correspond to the wishes of the parents, who might, consciously or not, neglect him.

Finally, the criteria that distinguished the groups from each other the most was level of family support (through the organisation of the workload at home, the support provided to the mothers for her to be able to take care of the baby and to breastfeed), family violence and the family conflict and maternal depression, all of which were interconnected.

Programme changes on the basis of research

At the national level, a close collaboration with the Nutrition Department of the Ministry of Public Health and UNICEF was established. A training of trainers of the WHO Breastfeeding Counselling Course was organised and trainers disseminated new knowledge to medical teams. Breastfeeding campaigns were carried out using very specific messages regarding milk production and mother milk insufficiency.

In the feeding centres, psychosocial workers were recruited to complete the medico-nutrition team. Their activities were:

- Systematic use of the suckling technique.
- Psychological assessment for all women and children admitted
- Permanent support to mothers and psychological follow-up when needed
- Support for breastfeeding and during feeding time
- Family interviews to reduce risk of defaulting, to explaining the treatment to the fathers and to the rest of the families, in case of family conflict. These interviews were also very important to help the families find solutions for organising their stay in the centre with the malnourished child and taking care of the rest of the family at home in the same time
- Relaxation sessions for women
- Stimulation of the babies through massages and play sessions that reinforce the mother-child bond

These interventions were combined with a reinforcement of the training of the medical staff, a closer collaboration with the hospitals and the Ministry of Health, a constant reflection and adjustments of the guideline, and the progressive development of home-treatment.

Results

At the national level, psychosocial aspects of malnutrition were recognized as important by the different partners and the Department of Nutrition in the Ministry of Public Health. The breastfeeding counselling course has been disseminated to more than 100 professional staff.

In nutrition centres, most of the fathers and the families invited came to the centres. They become partners in the treatment of their children. This partnership greatly reduced defaulting and helped families find solutions for treating the malnourished child without creating risk for the rest of the family.

Women used the opportunity to talk and to share their daily life and problems with the psychosocial workers and amongst themselves. Very good results were observed in terms of maternal mental health and mother and child relationships, even if it is very difficult to attribute this improvement to the child recovery and/or to the psychosocial support.

The impact of these interventions was also clearly observed in the nutrition indicators:

- The proportion of cured beneficiaries increased from 74% between April to August 2004 to 95% between September 2004 and March 2005.
- Percentage of defaulters has decreased from 19% to 3.8% in the equivalent periods.
- The death rate has decreased from 8% to 1.3% in the equivalent periods.

To assess the longer term impact of the treatment on the children, the team searched for 100 children that were severely malnourished when <6m and cured one year before. 75 families were found. Amongst them, 11 children were dead, four moderately malnourished and one severely malnourished. As the study was retrospective, it was not possible to establish clearly the reasons of the death of the children. These findings have to be put in perspective with the infant mortality rate in Afghanistan; they question the mid-term impact of treatment for severely malnourished children on survival (even without taking into consideration the consequences on child development). The recommendation is to develop and ensure an adequate follow-up of the children <6m and their mothers after the discharge of the nutrition centres, focusing on lactation support and other-child bonding.

Source: C.Bizouerne, ACF France

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Reduced risk of irreversible mental retardation and emotional impairment, and promotion of motor skills development in the child

In order to measure the impact of stimulation and support activities on the medium and long term child development, it is necessary to compare two groups of severely malnourished children receiving the same medico-nutritional treatment with, or without stimulation.

The impact of short stimulation programs during malnutrition episodes is temporary, and this is not surprising given the conditions of extreme poverty to which these children return.¹⁹⁶ Results are better when both parents and children are involved rather than the children by themselves.

To study the long term impact and to control for the hospitalization variable, Grantham-McGregor compared three groups of hospitalized children between the ages of six and 24 months:

- 16 severely malnourished children received the standard nutritional rehabilitation treatment in the hospital and took part in a three-year home visit program. (The intervention consisted of daily structured play while in hospital and then weekly at home. Mothers were also taught how to play with their child.)
- 18 severely malnourished children received only the standard nutritional rehabilitation treatment in the hospital.
- 20 well nourished children hospitalized for other illnesses.

Hospitalized malnourished children had a lower development quotient (measure of the child's development compared to others of the same age) than children hospitalized for other illnesses. Children of all three groups showed improvement in performance while in hospital, however, there was still a marked difference between the groups of severely malnourished children and children hospitalized for other illnesses.

The non-stimulated malnourished group of children demonstrated a markedly low development score while in hospital as well as six months after discharge from hospital compared to the group of children hospitalized for other illnesses. The non-stimulated group did not improve during the 14 year follow-up, while 24 months after being admitted to hospital, the score for the stimulated group of children continued to improve and was even higher than the control group. During the third year (when home visits were down to every 15 days), the development score for the stimulated group began to decline and then remained stable, maintaining a middle position with the other two groups. After the 14 year follow-up, scores for the stimulated severely malnourished group of children remained significantly higher than the malnourished group who did not receive stimulation, and significantly lower than the control group, once the initial differences were taken into consideration and adjusted for.

Once socio-economic and hospitalization variables were controlled for, the stimulation program had a significant impact on the mental development of the severely malnourished child. This improvement lasted beyond the intervention itself, without however reaching the level of children hospitalized for other causes or compensating for the benefits of a better socio-economic status. This last point was underscored in studies of children who had been adopted and who had regained their development in a better socio-economic and loving environment.¹⁹⁷

The Bangladesh study aims to show the impact of a shorter stimulation programme integrated into the treatment of severe malnutrition. Forty-three severely malnourished children aged six to 24 months (weight-for-age <50% or weight-for-length <70% or with nutritional edema) were enrolled in the study and received the standard medico-nutritional treatment. An intervention group of 54 children were also exposed to individual play sessions during their two weeks in hospital followed by visits at home for six months (two visits in the first month and then monthly; total of 18 supervised play-sessions). Meetings were held daily with mothers during the hospital stay. 27 children were lost to the study. Among the remaining children, the two groups had equivalent developmental scores and anthropometric results. After six months, the intervention group had improved more than the control group by a mean mental development score of 6.9 ($P < 0.001$; 95% CI: 3.9, 10.0), by a motor development score of 3.1 ($P = 0.024$; 95% CI: 0.4, 5.7) and a mean weight-for-age z score of 0.4 ($P = 0.029$; 95% CI: 0.1, 0.8) controlling for other variables. The mental development of children remains extremely low in the two groups, which is not the case when the same tests are used for a population of well-nourished children. No difference has been noted on child behaviour.

The results of these two studies underscores the fact that a stimulation protocol improves the development of severely malnourished children well into adolescence, compared to severely

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malnourished children not receiving stimulation, even if development levels remain low. These results correlate with those of the more numerous studies conducted with chronically malnourished children. Studies conducted by Pelto, Dickin et al¹⁹⁸ Engle, Black et al¹⁹⁹ consistently demonstrate that the most effective programs are those that combine nutritional supplements with psychosocial activities, that treat children early, that are based on several types of interventions, and integrate children-led activities with a parental guidance component.

There are sufficient data to confirm the necessity of incorporating stimulation interventions into medico-nutritional programs in order to reduce the risk of developmental delay of severely malnourished children. The intervention must not be limited to the duration of the medico-nutritional treatment and must include parents in the activities. More study is needed to gain a better understanding what are the best stimulation and support activities, the length of the intervention, the factors at play, how long the developmental changes last, and what aspects of development are most affected, etc.

To assess the impact on the social and emotional development of the child we need to look at more qualitative and empirical data based on observations. Geber²⁰⁰ insists on the different levels of recovery of the children, whether they are nutritional or emotional recovery: "The improvement in behaviour does not correspond exactly to the physical or biochemical improvement. Some children who are hospitalized for severe malnutrition remain sad and woeful despite their physical improvement. Others exhibit normal behaviour in spite of the fact that there is no physical improvement. They interact well with others and are able to feed themselves without difficulty. Nevertheless, it is important to keep monitoring the appetite of these children" (p. 19).

The quality of the mother-child relationship at the time of first testing is a prognostic indicator of nutritional recovery and development into the adolescence stage of seven children with kwashiorkor in South Africa.²⁰¹

These differences alert us to a too simplistic understanding of the links between malnutrition and child development for a more complex comprehension where the severe malnutrition appears in a broader context of social, emotional and material deprivation.

If it is necessary to integrate stimulation within the treatment of severely malnourished children, it is urgent that research be conducted on the effect it has on mental, emotional and social development, on more holistic approaches to strengthen mother-child bonding, on parental skills and/or attachment and/or the capacity to care for the child's immediate surroundings.

Better parental understanding of malnutrition, how to prevent its recurrence, and how to prepare for discharge and return home.

No studies have been found that evaluate whether or not the development support activities recommended by WHO actually improve families' understanding of the causes of malnutrition, which would prevent recurrence and prepare for the return home. Grantham-McGregor²⁰² demonstrate that in spite of including mothers in stimulation programs, the latter give little stimulation or objects to play with. Children who had received a stimulation program attended school earlier than the group of children who had no stimulation. The programs resulted in significant improvement in the mental performance of 0 previously malnourished children but without any real changes in the maternal behaviour.

Studies that measure the impact of nutritional programs on the medium and long term nutritional status of the child are rare. There are two possible methodologies:

- 1) Do a follow-up of a cohort after treatment for a given period of time, or search after a few months or years for children who were previously treated for an episode of severe malnutrition,
- 2) Keep track of children who have a recurrence and who need to be treated again for an episode of severe malnutrition. This approach involves children returning to the same centre where they had been admitted previously.

There is no explicit mention in the previously cited studies of differences in recurrences between children who had received stimulation or not. Nahar²⁰³ indicates only that many children remained severely malnourished six months after hospital discharge.

A study was conducted in Afghanistan on the outcome of a psychosocial approach in combination with medico-nutritional treatment given to severely malnourished children under six months of age.²⁰⁴ Seventy-five out of 100 families included in the sample were located six to 12 months after the end of the

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treatment (children who had recovered by the time they left hospital). Among them, 11 children had died, representing 14% of the total sample, four children were moderately malnourished, and one was severely malnourished.

In the Sudan,²⁰⁵ 21.5 % of families with children admitted to the nutritional centre for severe malnutrition already had the same child or another sibling admitted before for severe malnutrition, even though health education sessions were suggested daily during the child's treatment. Recurrences correlated with the quality of the mother-child relationship at admission and with the presence of family conflict.

There are almost no data on whether or not mothers change their practices at home in order to prevent recurrences of malnutrition after receiving advice during the course of treatment. Very often, the advice consists of basic standard health messages given to groups. To what extent this transmission of information promotes changes in the home and prevents recurrences, remains an area to be explored.

8.1.3 Feasibility of the WHO recommendations for psychosocial stimulation

Existing data on feasibility

Few articles recount the inclusion of play or stimulation programmes in the treatment of acute malnutrition. Articles describing the set up of treatment programmes for SAM, particularly in public services, do not mention integrating psychosocial support into treatment and some specifically mention not having included them.

The only studies which describe stimulation activities in treatment programmes of severe acute malnutrition are those whose aim is assessment of their impact on child development. These have set up systems which exceed the medico-nutritional protocol framework by a minimum of six months' home follow-up. Grantham-McGregor's approach²⁰⁶ consisted of a long follow-up of three years after discharge from hospital with home visits once a week for two years then twice a month during the third year. In the Nahar study, the stimulation programme was adapted to the length of mothers' stay in hospital (around two weeks) and home-visits for six months. Activities revolved mainly around mothers and the inclusion of development activities into daily care such as bathing or preparing the meal. The intention is to offer a service which could be set up within the existing health system. No difference has been observed between children discharged from hospital when this was the case after six months intervention, which emphasises the necessity of conducting other investigations to find out the respective influence of inpatient or clinic intervention where mothers regularly attend or home visits. In addition, the control group did not receive any home visits. It would also be important to determine whether it is the play activities in themselves which have had an impact or regular home visits.

Investigations regarding the feasibility stimulation programmes are essential to find out how best they can be integrated, costs, which staff are more qualified to implement, staff training required and how best to ensure follow-up of children and their families.

Transition from hospital care to community-based management

WHO's recommendations are based on inpatient treatment of malnutrition. In rare studies on the inclusion of stimulation, children were inpatients for long periods, which is no longer the case in the community-based treatment of acute malnutrition. In CTC programmes, children come with their mothers once per week to a follow-up site for medical consultation, anthropometric checks and collection of RUTF. At times, some programmes add home visits particularly for specific subgroups such as children who have not attended the weekly visit or who are losing weight despite treatment.

The recent recommendations of the United Nations agencies on CMAM²⁰⁷ make no mention of stimulation and support programmes. How can stimulation be included into community care of malnutrition against the humanitarian background context and/or in the health systems? There is probably not a single model that can be adapted to all situations. CMAM varies according to type of living conditions, standard of health services, etc. Above and beyond published literature, some NGOs such as ACF,²⁰⁸ IMC (International Medical Corps) and probably some government health services include play activities and health education for mothers in nutritional care. These systems are possible but require modifications in organisational, equipment and human terms. For example, play activities can be offered at the clinic during the weekly visit, home visiting teams can be trained in psychosocial support and criteria on the mother-child relationship can be included in referral criteria to different aspects of the

8.1 Psychosocial stimulation in the treatment of malnutrition

programme. Participating in groups set up in the community can be suggested to families of malnourished children to prevent malnutrition or encourage child development and to train mothers in the community to support mothers of malnourished children.²⁰⁹ Projects must be developed and tested to assess the method in which stimulation and support programmes are feasible in the home-based treatment of malnutrition.

8.1.4 Adaptation of WHO recommendations for infants under 6 months of age and emergencies

Adaptations for infants <6m

MAMI concentrates on infants <6m. Is there a particular effect of an acute severe episode of malnutrition for this age group? As early as 1995, Grantham McGregor summarised, "It is not clear whether age of onset of the severe episode affects the outcome because there is little data from children under six months of age". Few things have changed since and it would be useful to assess the longer-term effects of an acute severe episode of malnutrition in the first six months of life on survival, development and the child's growth. Studies have demonstrated that serious malnutrition in utero increased the risk of schizophrenias²¹⁰ and hospitalisation for major affective disorders in adulthood.²¹¹ On the other hand, no correlation has been demonstrated between IQ when entering the army and antenatal nutritional deficiencies.^{212,213} Studies on nutritional supplementation and stimulation have shown a better outcome from early intervention (before the birth and throughout early childhood).

From the activities recommended by the WHO (1999), some may benefit infants under the age of six months: constant maternal presence, design of the centre, limit of the number of nursing personnel, advisors and mother's education on childcare. On the other hand, toys and the example of treatment through play in annex 7 all refer to children over the age of six months. Could there be more specific activities to offer infants under the age of six months? One can imagine that appropriate carrying, holding and handling, the way in which treatment is given, massage and mobiles are stimulation adapted to the age of the child. What is most striking during this crucial period of development is the possibility of building a stable relationship with a person in the family circle and a focus of support and stimulation for infants <6m is most likely to reinforce the dyad between the mother (or maternal substitute) and infant.

Adaptations for emergencies

If environmental conditions are greatly impaired, the effects of SAM may be more serious. In war or conflict situations, family break-ups and displacements, the ability to care for the child, respond to their needs, stimulate them and show affection may be hindered.²¹⁴ Problems such as breastfeeding difficulties are likely to come to the fore in these circumstances and put newborn babies in danger and risk of malnutrition. Published evidence on stimulation in the treatment of acute severe malnutrition is even scarcer in emergency situations. However, it is without doubt that in this kind of situation, that a package of care is required to overcome environmental deficiencies, stimulate the infant, and support the parents in their role. Programmes of this nature do exist; it is important to assess their nature and impact.

8.1.5 Conclusions

WHO recommends including stimulation and support activities for the care of the severely malnourished child. The expected effects of stimulation and support are numerous, including accelerated growth during the recovery phase, reduced risk of mental retardation and irreversible affective disorders, and encouraging development of the child's motor skills. They teach parents how to anticipate a relapse and avoid recurrences by better understanding of the causes of malnutrition, and prepare for discharge and return to the family.

Review of literature has revealed the virtual absence of scientific data to confirm whether stimulation and support activities enable set objectives to be achieved. Only two studies have been considered. These two studies have focused on limited stimulation activities, without developing all activities recommended by the WHO and have assessed the effect on infant development (particularly intellectual). Both of them demonstrate that children receiving stimulation have significantly superior intellectual development than children who have not received any stimulation. These results are sufficiently significant to recommend the routine inclusion of stimulation in the care of the severely malnourished children during and after

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medico-nutritional treatment. A large number of studies are still to be carried out to find out which activities are the most effective, when should they be started, the minimum duration of intervention, the impact on social and emotional development of the child and/or on the mother-child relationship, and how to adapt these activities to the community care of malnutrition.

We have not found any studies confirming or invalidating the other anticipated effects from stimulation and support programmes recommended by the WHO but empirical experiments and more qualitative studies^{215,216} describe the feasibility. However, these are scarce and are rarely published.

Stimulation and support can be adapted to suit infants <6m by focusing on strengthening the quality of the family-infant relationship and breast-feeding support when mothers wish to breast-feed. Specific and comparative studies on more holistic approaches of malnutrition in infants <6m are required to confirm their effect on growth, survival and infant development, on milk produced and on the mother-child relationship.

There are few examples of psychosocial support integrated into SAM treatment programmes. Some activities are relatively easy to establish in hospital settings and are likely to bring improved well-being to severely malnourished children. Their adaptation to community-based treatment is more complex but different strategies can be considered, such as including stimulation activities during clinic visits or home visits and setting up patient group sessions.

8.2 Psychosocial aspects of malnutrition

The psychosocial causes of malnutrition are dependent on geopolitical, cultural, social and psychological contexts. In general, it is the mother-child relationship that is the main determinant of childcare practices and which relationship is especially important in infants <6m. In general, the mother-child relationship is influenced by six main (overlapping) elements: the infant/child, the mother or caregiver, relationship of the child to his caregivers, support system, resource constraints and cultural beliefs and practices. Considerations around child care practices and some of the influences of and on the mother-child relationship are explored here.

8.2.1 Child care practices

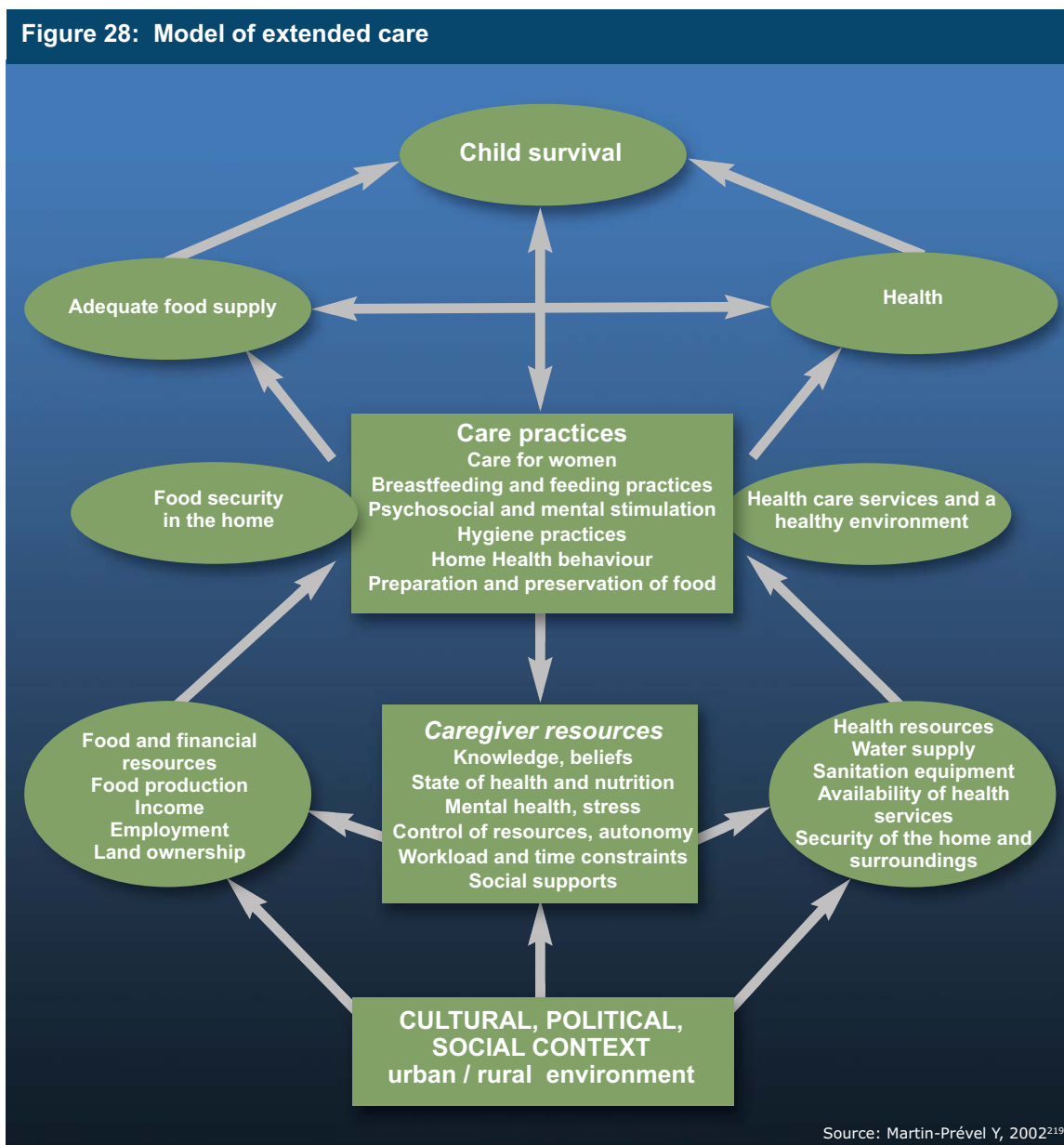
Child care practices are recognized as a key consideration in the causes of malnutrition, which scope is reflected in this comprehensive definition.²¹⁷

“the behaviours and practices of those who provide care (mothers, siblings, fathers and all other caregivers) that ensure that the child is fed and receives the stimulation and emotional support necessary for growth and development. These practices ensure that food security and health services result in the well-being of the child. It is not only the practices that are essential for the survival, growth and development of the child, but it is also the way they are implemented (with attention and adequately meeting the needs of the child). It is impossible for caregivers to provide care without sufficient resources such as time and energy”.

Such considerations are reflected in a model for the extended care of infants (Figure 29) where child care practices are considered alongside food and health security and also influenced by social, psychological, or cultural factors, etc.²¹⁸ This reflects how malnutrition is not an isolated medical-nutritional problem, but a consequence of factors related to context, environment, and family, amongst others (reflected in Figure 30). Its causes and treatment especially concerns the child's caregivers, particularly for infants < 6m whose survival depends entirely on their caregiver (usually their mother).

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Figure 28: Model of extended care



8.2 Psychosocial aspects of malnutrition

Figure 29: Psychological and sociological factors implicated in malnutrition

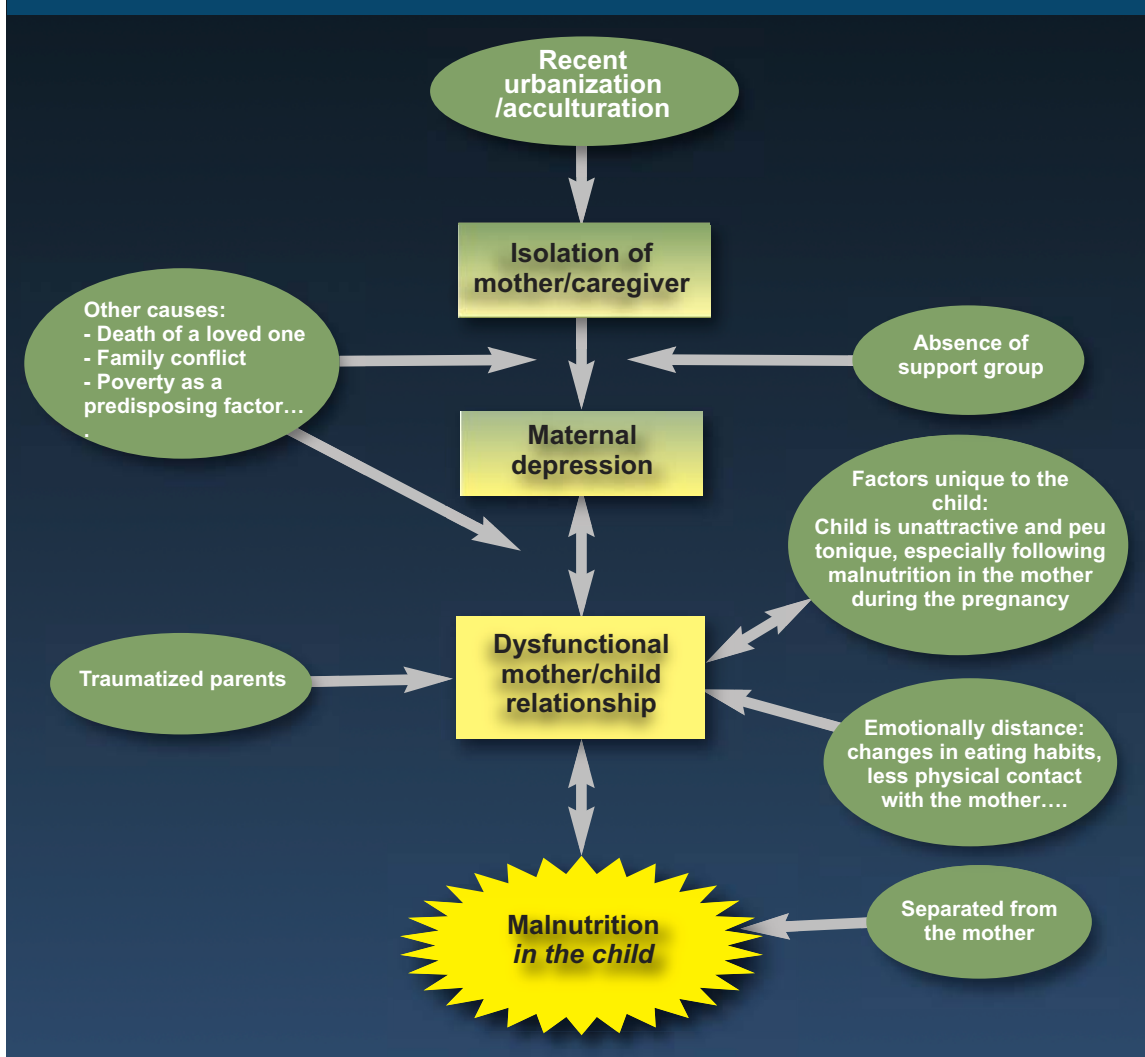
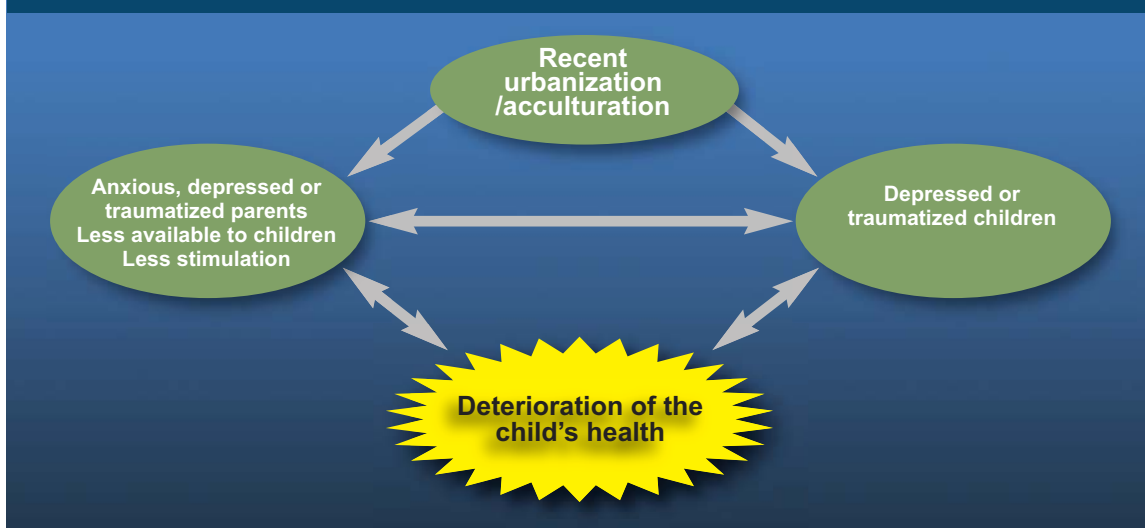


Figure 30: Psychosocial factors that aggravate malnutrition



8.2 Psychosocial aspects of malnutrition

Child care practices during emergencies

Individuals treated in humanitarian programmes are often socially and psychologically vulnerable. They have often suffered recent losses, including homes, loved ones, families and communities, and have often experienced or witnessed violence. Mental health problems are common in these situations, for example, anxiety, post-traumatic stress and depression. Social and family structures are often shattered and people may find themselves isolated, without the support of the community or extended family that they usually rely on. We can hypothesize that emergency situations have a negative impact on the mother-child relationship and thereby on nutrition. The infant no longer finds in his mother the partner he or she needs to communicate with and develop. The infant's problems reflect the mother's difficulties and also those of the father, family and community.

Such factors can severely limit or hamper the capacity of the support circle to give care, particularly to children.²²⁰ In Juba, in the Sudan, in the late 1990s and early 2000s, for example, recurring conflicts and insecurity forced families to become displaced and separated. Many men joined the military as the only means of earning income and were away from home. Women were forced to work by selling wood and grass to sell at the local market. Older children had to look after the youngest during the day and mothers spent very little time on childcare.²²¹ Children born of rape in conflict situations can also present difficulties, as the will of the parent to provide adequate childcare can be compromised.²²² We can hypothesize that conflict situations, crisis, and traumatic events have a negative impact on the caregiver-child relationship and thereby on nutrition. Children themselves are directly impacted by war and conflicts and also have to live with their parents' sufferings and their inability to protect them. **The infant reflects the problems experienced by its mother, father and family.**²²³

*"Traumatizing a population can affect child care practices dramatically during and after emergencies. Social and caring behaviour can have a critical impact on the nutritional well-being of dependants following an emergency when physical resources are no longer a limiting factor. In addition, societies need to be mentally healthy to make optimal use of rehabilitation resources that are available from agencies during emergencies to improve nutritional and food security"*²²⁴

8.2.2 Providing nutrients is not enough to nourish infants

What a baby cannot vocalize will be expressed by the body, for example in sleep disturbances, eating problems, skin problems and repetition disorders. Mother/child bonding and the feeding relationship are interconnected. Simply providing care to infants in a mechanical way is not enough for proper development.²²⁵ Attachment to the mother, or another maternal figure, is as essential a need for the child's survival as daily care. Attachment is described as "secure" when a child feels confident and secure enough to explore the outside world and to try new experiences.^{226, 227} Feeding provides special times of interaction between a child and its mother figure and how it is carried out is important. Feeding represents a vital issue around which difficulties can crystallize. A malnourished infant <6m (excluding sick children) should alert us to consider relationship difficulties.

8.2.3 Malnutrition and attachment: cause or effect?

An attachment problem can be a risk factor for malnutrition (or 'failure-to-thrive'), and changes in the relationship are possible if the child demonstrates delayed development or malnutrition. Research into 'cause' (prospective studies) and 'effect' on malnutrition in infants <6m specifically was not identified. However research in malnourished infants and children is of relevance and key work is summarized here.

Insecure attachment as a cause of malnutrition

During systematic longitudinal observations in a part of Abidjan with a high level of malnutrition,²²⁸ 'insecure' attachment seen in children was linked to the relative unavailability of the attachment figure, an insistence by the infant on remaining close to the mother (refusing to leave the breast) and anger and opposition (anorexic behaviour). This contributed to the onset of ongoing symptoms of light and moderate malnutrition. Children with 'secure' attachment were able to use their mother as a secure base from which to explore their surroundings, including a variety of foods. Other research has found that mothers of malnourished children responded less to their child, and were less affectionate and communicative even before the onset of malnutrition.²²⁹

8.2 Psychosocial aspects of malnutrition

Attachment issues in the malnourished child

There is a lot of research available on the link between attachment issues, emotional deficit and malnutrition. Grappe²³⁰ found an increase in acute malnutrition in north-east Brazil when there were attachment issues between mother and child. Geber²³¹ shows how changes in the mother-child relationship can affect the onset and prognosis of malnutrition. Buffet et Mazet²³² recount the story of a malnourished child who presented with anaclitic depression (childhood depression caused by separation from mother following a normal relationship in the first few months of life).

Ainsworth²³³ observed 28 children in Uganda, 16 of which had 'secure' attachment, seven 'insecure' attachment and five no attachment. Unattached children had mothers who were absent for long periods of time, while the mothers of children with 'secure' attachment remained with their children. Unattached children overall received the least care. In terms of feeding, none of the unattached mothers reported finding pleasure in breastfeeding, whilst 14 out of 16 mothers with 'secure' attachment did. Similarly, the mothers who believed they had enough milk were mainly those whose child had a 'secure' attachment.

Miquel-Garcia²³⁴ compared 30 pairs of mother-malnourished children to 30 pairs of mother-healthy children in Mali. Amongst mother-malnourished child pairs, children had difficulty separating from their mothers and interactions were sporadic, rarely mutual, tinged with sadness and indifference, and even hostility. Interactions between mother-healthy child pairs, interactions were mutual and pleasurable.

Pollitt et al.²³⁵ compared mothers of healthy children to mothers of children with delayed development ('failure-to-thrive'). Mothers of children with delayed development had less verbal interaction and socialized less.

Interacting with malnourished children

Bouville²³⁶ cites several studies that examine the specifics of behaviours and interactions of malnourished children in their natural environment. In India, time spent breastfeeding was the same for malnourished and healthy children, but breastfeeding was more frequent for moderately malnourished children and there was less stimulation, such as speaking, playing with the child, or fondling. In Mexico, malnourished infants over six months were clingier, more passive and explored less, attracting less parental attention as children who were well. In Cameroon, early weaning was noted among malnourished children who were entrusted to younger mothers figures who were distant relatives. Malnourished children had less social interaction, but would seek their mother's attention more through looks and verbal sounds during meals. These children showed very little interest in food.

These studies show that mother-child interactions are few and less positive even before the onset of malnutrition in the child, or during the course of the malnutrition episode. Some authors talk about 'negligence' in cases of malnutrition. This may often be due to social interpretations of malnutrition which give parents a sense of 'powerlessness' and inhibit positive reactions.²³⁷ Multiple risk factors may be at work. In considering the issue of 'negligence', however, it should be remembered that inferring blame for having a malnourished infant (especially for infants <6m where mothers may be considered responsible) is important to avoid, particularly in the context of therapeutic programmes.

8.2.4 Malnutrition and the psychopathology of the child

Some authors go further and suggest that malnutrition should be regarded as a psychopathology syndrome (or form of mental illness) (Guedeney, 1986, 2000). An accurate differential diagnosis must be based on in-depth analysis of individual situations and their progression. The nature of interactions between the child and caregiver may provide a good diagnostic and prognostic indicator.²³⁸ The diagnosis will help to decide whether or not to incorporate a psychological approach to the classic medical-nutritional treatment.

8.2.5 Mother-child support system

Mental health and social support are inter-related and therefore the social support system of mothers seems to be particularly important for their mental health and therefore the care of their children. Various studies highlight this, for example:

Risk factors for malnutrition identified in Mali²³⁹ were an unwanted child born in an unhappy marriage serious economic crisis, moving death of a close parent, and the number of hardships since the child's conception.

8.3 Maternal depression & infant malnutrition

Studies of medical records of malnourished children in Senegal²⁴⁰ showed that kwashiorkor can result from changes in the social, familial, and cultural environment that occur when having to adapt to urban surroundings following recent migration from rural communities. Similarly a study from Burkina Faso²⁴¹ showed that amongst people who migrate to urban settings, for those who are not adapted to modern life, the loss of traditional family life can lead to poverty and depression for the mother and child malnutrition.

Mothers with a malnourished child in the Ivory Coast²⁴² were either very young and rejected by their family due to early pregnancy, had had to leave their mother abruptly without severing emotional ties, were mature with many children and pregnant again, or abandoned, divorced or in the midst of family conflicts. All did not have the usual extended family support. This is reinforced by research in the Congo on reasons why mothers are not properly bonded with their children.²⁴³

So what appears to be irresponsible or negligent behavior on the part of the mother, may actually reflect her suffering experienced in a social situation that has become unbearable.

8.2.6 Control of resources, autonomy, workload and time constraints

Caregivers require resources to provide for the children in their care. Mothers often also have limited access to financial resources and have limited budgets from which all family needs must be provided for. The needs of individual children can be lost in this. Caregivers also require a level of autonomy to make decisions about their welfare. Research in Kabul showed extended family members to be very involved in decisions made about childcare practices, which some mothers found difficult when there were points that they didn't agree on, but were powerless to change.²⁴⁴

Society also imposes norms that families follow (consciously or not). For example, if malnutrition is thought to be the result of a transgression of a sexual taboo²⁴⁵ or as the result of a djinn (spirit) intervention, then the family will seek help within that framework, for example from local traditional healers²⁴⁶ and will go to the hospital only as a last resort. Research on mothers and children hospitalized in Niger²⁴⁷ reveals a popular belief that malnutrition is caused by djinns and witch doctors attempting to make the 'essence' the person disappear, thus the loss of weight. In addition, hunger can be synonymous with shame, as it shows the family network to be dysfunctional. In this context it is easy to understand the difficulties of seeking treatment for the malnourished child.

Workload and time constraints of mothers also influence their ability to adequately care for their children. For Longhurst²⁴⁸ childcare refers to the time, attention and support given in the household and community to provide physical, emotional, intellectual and social needs for the development of the child. According to Longhurst, it is important for the community to ensure the well-being of its children. Community activities can have a positive impact on childcare practices at the household level, for example, through programmes that generate revenue to allow women to have more control over that income, family literacy and nutrition education. The presence of such psychological and sociological factors underscores the importance of considering the surrounding environment of the child in order to target appropriate support and treatment for recovery.

8.2.7 Conclusions

Current humanitarian programs should incorporate child care practices and psychosocial causes of malnutrition in their knowledge base and intervention plans.

8.3 Maternal depression & infant malnutrition

Post-natal depression is inadequately detected and treated in developed countries as well as in developing countries. Its impact on child development is widely recognised^{249, 250} but its role in physical development and malnutrition has been researched to a lesser degree. Stewart²⁵¹ recently published an exhaustive review of the literature on maternal depression and child growth. Here we build on this with the articles that have appeared since, and then refocus on the treatment of severely malnourished infants <6 m in emergency situations.

8.3 Maternal depression & infant malnutrition

8.3.1 Methodology

A Medline search was carried out using the following criteria of inclusion: articles published in French or English between 1993 and 2009. The keywords and number of articles referenced are shown in Table 40.

Table 40: Number of articles by keywords (Medline, February 2009).

Keywords	Number of articles
"Maternal mental health" and infant malnutrition	0
Maternal mental health and infant malnutrition	3
"Maternal mental health" and "infant growth"	9
"Maternal mental health" and growth	10
Maternal mental health and infant growth	218
Maternal depression and infant growth	186
Maternal depression and infant malnutrition	28

The titles and summaries are graded first. A small number of articles corresponded to our research theme. As many articles as possible were included despite the methodological differences and variations in the definition of maternal mental health and malnutrition. Although the MAMI project mainly focuses on acute malnutrition as determined by anthropometric assessment, research studies using malnutrition indicators other than weight/height were kept. Similarly, we have broadened the review of the literature to include research on infants over six months. Lastly, the mother's mental health has generally been based on scales of maternal depression but research that has used more general scales of psychological distress have also been retained. The authors concentrate mainly on maternal depression because depressive symptoms are the most common on the international level and a number of studies have highlighted that they constituted a major risk factor in child development^{252, 253} These differences necessitate a certain amount of prudence in the analysis of the results and the recommendations.

In all, 11 research items were included in this review of the literature; the indicator and target populations are listed in Appendix F (Table 41).

8.3.2 Results

Two types of approach are implemented in the studies on maternal depression and child growth:

- In cross-sectional studies, the children are recruited (in general in primary health care centres) and classified according to their nutritional state (malnourished v not malnourished). In the majority of studies, a certain number of variables are checked: the age, gender of the child and socio-economic level. Then the prevalence of maternal depression is assessed and compared between both groups. This type of methodology does not enable identification of causes of maternal depression. For example, maternal depression could result in child malnutrition or indeed malnutrition and maternal depression may be the result of a third variable not assessed in the study (poverty, family isolation, family conflicts, etc.).
- Longitudinal studies try to avoid this bias by recruiting mothers during pregnancy or in the first months following the birth of the infant. The prevalence of maternal depression is assessed and compared to different periods of growth of breastfed infants of both depressed and non-depressed mothers.

The results of the different studies are presented in Tables 47 and 48 (see Appendix E, for detailed analysis of this data, refer to Stewart²⁵⁴). In South Asia, research has shown correlations between perinatal mental disorders and child malnutrition, including after allowing for confounding factors, particularly birth weight. A single prospective study in Pakistan²⁵⁵ specifically took ante-natal depression into consideration. Children of mothers who were depressed during pregnancy were four times more at risk of being underweight (CI: 2.1-7.7) and 4.4 times more at risk of being stunted at six months of age (1.7-11.4). This risk was increased when the mothers were depressed at each assessment (chronic depression).

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The results are less congruent in studies carried out in other continents. A cross-study in several countries²⁵⁶ did not find significant correlations between psychological distress of mothers and malnutrition of their children between six and 18 months of age, in Peru and in Ethiopia. If a correlation was observed between maternal depression and malnutrition in Jamaica²⁵⁷ it was diminished after taking into account unanticipated factors revealing poverty as a risk factor. In Brazil²⁵⁸ 30% of children with depressive mothers were stunted compared to 18% of children of non-depressed mothers but no significant association was observed between maternal depression and child growth. The longitudinal study conducted in South Africa²⁵⁹ also highlights that post-natal or present depression was not correlated significantly at two months, once the variable birth weight was accounted for, nor at 18 months. The sample from this study is relatively small, which limits its impact. On the other hand, De Miranda²⁶⁰ found more depressive mothers in the group of malnourished children than in the children in the control group, a difference which persisted after taking into account the confounding factors. A longitudinal study in Nigeria²⁶¹ found that children of depressed mothers at six weeks post-partum had breastfed infants more underweight and stunted at three and six months of age. In Malawi,²⁶² the height-for-age Z-score of the child and the presence of current maternal mental problems correlated significantly, including after adjustment of confounding factors. The average weight-for-age of children of mothers experiencing mental health problems was smaller than that of children whose mothers were not experiencing mental health problems, but this difference was not significant.

8.3.3 Discussion

While the impact of maternal depression on child development is well established, especially in developed countries, the number of studies published on the impact of maternal depression on physical development and child growth remains low. However there is increasing interest in this problem. Research in South Asia strongly correlates maternal depression and infant malnutrition. The results are less clear in other continents and require more research. The heterogeneous nature of the results may be explained by methodological differences, factors linked to local specificities of malnutrition and to cultural data,²⁶³ and on interpretation of the links between maternal depression and malnutrition.

There were methodological differences between the studies, for example indicators of malnutrition. The majority of studies rely on the weight-for-age ratio but some also take into account height-for-age or even weight-height ratios. The thresholds separating children in good health from malnourished children also vary between studies. Similarly, mental health of mothers sometimes refers to pre- or post-natal or chronic maternal depression and sometimes to common mental problems. Finally, the age of the child, method of assessment of the mental health of the mother and the cofounding factors retained also differ widely.

Associations between maternal depression and malnutrition may be explained by three different mechanisms:

1. Contextual factors

Poverty undoubtedly plays an important role since it leads both to an increase in depressive symptoms and is a risk factor for infant malnutrition. Other variables such as endemic infections or, for example, certain deficiencies in micronutrients could cause psychological distress and child growth delays. More contextual factors also contribute. For example, mothers recently arrived in urban environments may be unaccustomed to one-to-one contact with their baby without extended family support. Isolation may have a negative psychosocial impact and may also lead to resource constraints.²⁶⁴

2. Maternal depression as a direct and indirect cause of malnutrition

Maternal depression is a risk factor for child malnutrition. The depressed mother stimulates her child less, has more difficulty quickly and adequately meeting his needs and seeks less help from health services. More indirectly, depressed mothers have more risk of having babies of low birth weight or babies which are premature, who for their part may have suckling problems, making breastfeeding more difficult and a tendency for the mother to wean their child earlier.

3. Low birth weight as a cause of maternal depression

The child with a low birth weight, or with difficulties sucking or who cries a lot, presents certain risk factors which can lead to and/or contribute to maternal depression.²⁶⁵

This method of exploring the links between maternal depression and child malnutrition risks implies a linear causality. However malnutrition and psychological problems in the mother are explained much

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better by circular causalities. We can envisage, for example, a child experiencing a period of partial anorexia at the time of the introduction of additional food. The mother then feels a little depressed and does not manage to adequately respond to her child's difficulties. The latter then starts to refuse more foods, the mother worries and her depression increases in the face of her child's refusal to eat. This concept of circular causalities may help us to better understand differences observed between different countries and regions and may help to pinpoint appropriate interventions.

8.3.4 Implications for MAMI

These findings have important application for MAMI in emergency situations, where the context is highly pressurised (for example, social and family networks have been lost) and where infants are extremely vulnerable and highly dependent on their mothers. In these circumstances the psychological availability of the mother and her ability to care for and breastfeed her infant is critical and therefore, we believe the relationship between maternal depression and child growth may be even more marked.

Detection of maternal depression

Although perinatal depression is insufficiently detected and treated in developed and developing countries, detection tools and appropriate treatments do exist.²⁶⁶ What are these tools and can we use them within the framework of interventions of prevention and/or treatment of child malnutrition?

Ideally, identification of women with post-natal depression should be done through an in-depth clinical interview carried out by qualified personnel. Unfortunately, this approach is rarely possible and screening remains the most common method for early detection. Several depression screening tools exist but they have limited use in screening pre and post-natal depression, as some questions (e.g. concerning sleep difficulties and lack of appetite) can be lined to normal changes connected with pregnancy and birth.

Among the tools specifically developed for the detection of post-natal depression²⁶⁷ the EPDS (Edinburgh Post-Natal Depression Scale) is the most widely-used in the research. It is a self-report scale of ten questions²⁶⁸ (Cox, 1996). Each item is coded from 0 to three with a total ranging 0 to 30. A threshold of 12/13 suggests major depressive symptomatology but it is recommended that all women with a score of 9/10 are considered for an in-depth clinical interview. EPDS scores do not constitute diagnosis but rapid identification of potential cases. The scale has been translated and adapted in numerous contexts; the thresholds vary depending on the country.^{269, 270} Its use is relatively easy, interview time is short and it is well accepted by the women.

Whilst many studies report positively on the impact of EPDS, a recent review of the literature²⁷¹ shows that detection of depression (not only post-natal depression) does not result in improved recognition of depression by medical teams, or increased treatment of depression. On this basis the author recommends not systematically including screening for depression in routine treatment procedures. These conclusions are comparable to those defended by Dennis,²⁷² "currently, there is limited information about the harms of screening and despite a wealth of studies concerning the prevalence of postpartum depression and screening accuracy, key elements of the evidence base for screening remains insufficiently developed. As such, a strong recommendation to implement procedures cannot be justified until further research has been completed." A review of over 16 recent studies also resulted in a lack of conclusive evidence for recommending the use of systematic screening in pre-natal treatment. It is therefore necessary to specify with extreme precision the depression screening framework so that screening is effective and results in suitable treatment.

Treatment of maternal depression

Effective treatments exist and may even be integrated into the routine services. In a recent study, Rahman²⁷³ compared the impact of a cognitive-behavioural approach versus routine follow-up by the primary health agents in the rural communities of Pakistan. At six months, 23% of the women of the intervention group and 53% of the women of the control group still had a diagnosis of major depression (significant difference between the intervention group and the control group). These effects would endure at 12 months. This study illustrates the feasibility of integrating treatment for pre-natal depression with primary health services.

8.3.5 Interventions on maternal depression and child malnutrition

Several types of intervention can be envisaged depending on whether detecting and treating developing depression in order to prevent child malnutrition, or detecting and treating maternal depression and child malnutrition simultaneously.

Detecting and treating maternal depression to prevent child malnutrition

The aim of this type of intervention is to intervene even before the appearance of malnutrition in order to prevent it developing. This requires the identification of risk factors and suitable responses. Since depression constitutes a risk factor of infant malnutrition, we can make the assumption that the treatment of maternal depression will decrease the risk of infant malnutrition. To our knowledge, only one study has tested this hypothesis. In Rahman's study²⁷⁴ the cognitive-behavioural approach in the primary health care services had an impact on the rate of maternal depression, but no significant difference was observed on the growth of the child at six and 12 months. However, the number of children stunted at 12 months was much greater in the control group compared to the intervention group. Analysis of the intervention group revealed that children whose mothers were still depressive at six months had a weight-age and height-age ratio significantly lower at six and 12 months of age than children whose mothers had recovered. Untreated maternal depression contributed substantially and independently to infant malnutrition even in cases of cognitive-behavioural intervention. The intervention had by contrast positive effects on the number of episodes of diarrhoea and on vaccination. The mothers were more willing to use a means of contraception and the parents reported that they played with their child more.

These data are insufficient, however, to draw recommendations from and further research is needed. Research into the effect of treatment for maternal depression and of other potential risk factors, such as maternal support, is required. Independently of its impact on malnutrition, perinatal depression is a public health challenge for women and populations and justifies appropriate management.

Detecting and treating maternal depression and child malnutrition simultaneously

This type of approach aims to treat both infant malnutrition and maternal depression in a combined way. It poses however certain methodological problems. Severe malnutrition in the child can be a cause of maternal depression, caused by anxiety. In such cases, the mother's depressive symptoms are likely to disappear as the child's health improves. Chronic and reactive depression both require psychological support but the methods and length of treatment will vary. Here follow a number of interventions published in the research.

Celia and Nudelman²⁷⁵ describe a programme of global treatment of malnourished children and their depressed mothers in a favela in Brazil that included dissemination of information and paediatric, psychological and social monitoring at home. The first results are positive for maternal depression and the nutritional and psychological condition of the babies.

Médecins Sans Frontières (France) has put in place a programme of individual malnourished mother-baby psychological support in addition to nutritional monitoring in Hebron (Palestine). The results show a very positive impact, on the baby in the first instance, then on the mother-child interaction and finally on the mother herself. The baby recovers quicker and then contributes to his mother's recovery.²⁷⁶

Buffet and Mazet²⁷⁷ report the case of a child under two years of age hospitalised for anaclitic depression. The child presented characteristics of marasmus. Medical staff worked with the family to understand the difficulties and value the mother and managed to end hospitalisation, following which the child's appetite returned and psychological health improved.

Miquel-Garcia,²⁷⁸ following research on maternal depression and child malnutrition, offered to mothers psychological treatment and medical treatment. The authors note "a parallel development of mother and child. Within three weeks, the latter became active and sociable; interacting profoundly with his mother, even though the nutritional recovery still appeared incomplete" (p. 223).

Psychological support programmes, in addition to medico-nutritional treatment of severe malnutrition, have positive effects both on maternal depression and on the nutritional and psychological health of the children. However, research studies are still too few. Further research is needed to discover the most effective psychological aids (psychotherapies for the mother, mother-baby psychotherapies, drug treatment, etc.) and how these can be adapted to the extreme environments of humanitarian emergencies.

8.3.6 Conclusions and recommendations

Maternal depression has an impact on child growth in the countries of South-East Asia. The results are more contradictory in other continents. The mechanisms between depression and malnutrition are probably multiple and are both direct and indirect. A better understanding is necessary to identify the processes and factors at play. However, the consequences of maternal depression on breastfeeding, child development and the ability to seek treatment are sufficient to recommend detection and appropriate treatment of maternal depression within the framework of management of infant malnutrition.

Additional studies are to be undertaken to assess the most effective methods and tools of intervention in both the prevention and treatment of severe acute malnutrition. The feasibility of the treatment of maternal depression and/or treating jointly malnutrition and maternal depression in developing countries has been demonstrated in different programmes.

It is unlikely that a single model is suitable for all contexts. The causes of maternal depression and/or malnutrition vary, as do available resources. Qualitative analyses also including socio-anthropological data are recommended for devising appropriate interventions in different circumstances (possibly also including other social players as well as mothers). The specificity of infants <6m and emergency situations are not taken into account in the studies which we have come across but the assumption can be made that breastfeeding constitutes a cornerstone between maternal depression and infant malnutrition and that the interventions facilitating starting and continuing breastfeeding are crucial.

More research is needed in the following areas:

- Longitudinal research on maternal depression and child growth in different countries to assess the causality of maternal depression on infant malnutrition and better grasp geographical and contextual differences.
- Differentiating the impact of pre- or postnatal depression and common mental disorders to see if there are notable differences on child growth.
- Synthesis of qualitative research to better understand the causal links and risk factors of maternal depression on infant malnutrition.
- Research study on the impact of treatment of maternal depression on child growth and the prevention of malnutrition.
- Several programmes have shown the relevance of managing maternal depression and infant malnutrition simultaneously, but data are lacking to understand the most effective interventions and their objectives.

8.4 Summary findings and recommendations

Summary findings

WHO 1999 guidelines on treatment of SAM include guidance on psychosocial support and stimulation for children and mothers.

Evidence shows that stimulation during and after treatment improves the development of severely malnourished children well into adolescence compared to non-stimulated children, even if development levels remain low.

Evidence is lacking on the medium and long term impact of stimulation programmes on child's growth and effectiveness of SAM treatment, on mothers' practices at home and on the impact on malnourished infants <6m. Most of the experience and evidence to date comes from inpatient settings.

Impact of severe malnutrition in infants <6m is not known, there is little guidance on specific stimulation activities for this age group and little evidence of the long term effects of psychosocial support on this age group.

Psychosocial stimulation is not currently integrated into CMAM recommendations and not routinely integrated into emergency programmes of all kinds.

The mother-infant relationship is vital for the proper health and development of the child. This is compromised in emergencies and is both a cause and consequence of malnutrition. Mothers need support to protect this relationship.

8.4 Summary findings and recommendations

Postnatal depression has a negative impact on child development and an association between maternal depression and infant malnutrition can be inferred.

Summary recommendations

Psychosocial support for mothers and infants should be routinely included in both inpatient and outpatient programmes on the treatment of SAM.

Projects should be developed and tested to assess appropriate methods of providing social support and stimulation in community-based management of acute malnutrition programmes.

Existing emergency programmes that incorporate psychosocial elements should be described and assessed for effectiveness.

A large number of studies are needed to explore which psychosocial support activities are the most effective, when should they be started, the minimum duration of intervention, the impact on social and emotional development of the child and/or on the mother-child relationship, how to adapt these activities to the community care of malnutrition.

Studies are also required on the nature and impact of treatment of maternal depression on infant malnutrition.

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