StimNut study

Psychosocial stimulation for children with severe acute malnutrition in Koutiala, Mali. Contextual adaptation and assessment of the feasibility and acceptability of an intervention.

2022-2023

Phase 1

Exploratory phase

Study report – July 2024

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Preamble and acknowledgements

This study report is the first in a series of three reports on the StimNut study which took place from July 2022 to June 2023 in Koutiala, Mali. Two *ad hoc* reports were produced: for phase 1 “Exploratory phase” (or initial assessment), which constitutes this report, and phase 2 "Participatory adaptation phase". The 3rd report deals more specifically with phase 3 of the study "Implementation of the adapted psychosocial stimulation intervention and evaluation of its feasibility and acceptability" and also contains information on the overall progress of the study (the three phases).

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Abbreviations

ACF	Action Against Hunger (in French Action Contre la Fin)
AMEDD	Association Malienne d'Éveil au Développement Durable
CSCOM	Community Health Centre (in French Centre de santé communautaire)
CMAM	Community Management of Acute Malnutrition
CNESS	Comité national d'éthique pour la santé et les sciences de la vie du Mali (in English National Ethics Committee for Health and Life Sciences)
FGDs	Five focus group discussions
GCP -ICH	Good Clinical Practice/ ICH International Conference Harmonisation
IPC	Infection Prevention and Control
FUSAM	Follow-Up of Severe Acute Malnourished children
MAS	Malnutrition aiguë sévère (in English Severe Acute Malnutrition)
MOH	Ministry of Health
MSF	Médecins Sans Frontières
NGO	Non-Governmental Organization
PAR	Participatory Action Research
TFP	Therapeutic Feeding Programme (TFP)
PCMA	Programme de prise en charge communautaire de la malnutrition aiguë
SAM	Severe Acute Malnutrition
STIMNUT	Stimulation psychosociale en nutrition (in English Nutritional and psychosocial intervention
UNICEF	United Nations International Children's Emergency Fund
URENA	Outpatient Nutritional Recovery Unit
URENI	Intensive Nutritional Recovery Unit
WFP	World Food Programme

Summary

While children who survive severe acute malnutrition (SAM) not only face an increased risk of illness and early mortality, but also impaired cognitive and emotional development, early psychosocial stimulation of disadvantaged infants and young children has been shown to have both short- and long-term benefits for cognitive and social development. With this in mind, Action Against Hunger (ACF) has developed a structured five-session psychosocial stimulation intervention for children with SAM using its "Follow-Up of Severe Acute Malnourished children" (FUSAM) protocol. The psychosocial intervention included sessions on communication and play, breastfeeding and feeding practices, massage, bathing, sleep and relaxation needs, as well as a session at the beginning and end for family sharing.

Psychosocial stimulation is cited as an important recommendation in the Protocol for the Integrated Management of Acute Malnutrition in Mali. However, in practice, it seems that this is not always integrated into nutritional treatment, in particular due to a lack of time, resources or a standardised protocol describing the actions to be implemented with parents/carers and their children.

The main objective of the StimNut study was to assess the feasibility and acceptability of a psychosocial stimulation intervention adapted from FUSAM to the context of Mali, in the Koutiala Therapeutic Feeding Programme (TFP) for children aged 6 to 23 months with SAM. This was a mixed-method study (qualitative and quantitative data) designed to determine the feasibility and acceptability of a psychosocial nutrition intervention. The study took place in 2 Community Health Centre supported by MSF-OCP in Koutiala (CSCOM) and in the paediatric ward of the Koutiala referral hospital (MSF hospital).

The first phase of the study was a exploratory phase (initial assessment) using mixed method to gain a better understanding of the context and the main factors affecting malnutrition in the population studied, as well as the experiences and needs of people consulting the CSCOM/hospitals. This phase is detailed in this report.

Data was collected through individual interviews with primary carers (usually mothers, sometimes grandmothers) of children with SAM, semi-structured interviews with key informants and focus groups with parents of children without SAM, and then analysed by the research team made up of local researchers, AMEDD, ACF and Epicentre.

The main results of the quantitative and qualitative analyses show that certain best-practice care approaches taught in the FUSAM manual are more widespread (e.g. feeding) than others (e.g. play) and that they vary from case to case. In addition, although the manual's recommendations seem to fit in with the families' value system, a number of barriers to childcare were identified (e.g. caregivers' overwork, caregivers' heavy dependence on heads of household in the event of the child's illness, the large number of children per family, lack of financial resources and knowledge, stigmatisation of mothers of MAS children).

The results of this first phase were used to inform the adaptation of the manual to the Koutiala context, by specifying the practices, standards and knowledge concerning the care of children with SAM, as well as the main barriers that could hinder it.

Recommendations were drawn up following this first report (see recommendations).

1. Introduction

1. 1 Background

The period from pregnancy to the age of three is well established as the most crucial time in a child's development (1). It is during this period that the brain is formed. By the time a child reaches the age of three,

a considerable number of neuronal connections have already been formed in response to interactions between the child's five senses and their environment. These neuronal connections are impacted by important environmental factors such as nutritional status. They are also critically affected by interactions between the child and their tutors. It has been shown that the combination of these various factors in early childhood forms the basis of physical health and emotional well-being into adulthood (2,3). Although we know that children who survive severe acute malnutrition (SAM) are not only at increased risk of illness and early mortality, but also of impaired cognitive and emotional development, early psychosocial stimulation of malnourished infants and young children has been shown to have both short- and long-term effects on cognitive and social development (2-5). There is a critical relationship between nutritional status and psychological development, and the value of combining interventions that improve child development with those that improve child health and nutrition in an integrated model of care has received increasing attention in recent years (3). This was stated as a recommendation in the Protocol for the Integrated Management of Acute Malnutrition in Mali (6). This protocol recommends starting psycho-cognitive stimulation after the acute phase, during the rehabilitation of nutritional status. This psycho-cognitive stimulation should make it possible to create a joyful atmosphere conducive to psychological awakening; carers are encouraged not to punish or give orders; health workers are encouraged to teach carers to make toys themselves and to organise educational sessions so that they can grasp the importance of play and discovery in the psycho-cognitive and physical stimulation that the child needs. It is stipulated that this should be an integral part of the treatment. However, in practice, it seems that this is not always integrated, due to a lack of time, resources or a standardised protocol describing the actions to be implemented with the parents/carers and their children.

1. 2. Justification

In a context of high SAM prevalence in Nepal, ACF developed a structured five-session psychosocial stimulation intervention for children with SAM in the Follow-Up of Severe Acute Malnourished children (FUSAM) protocol. Between 2014 and 2017, the FUSAM research project was implemented in the Saptari district of Nepal to evaluate the effectiveness of a brief psychosocial intervention on children's nutritional status, health and development by comparing the effect of a combined nutritional and psychosocial intervention (STIMNUT) with a nutritional treatment intervention for children with uncomplicated SAM aged 6 to 23 months admitted to the Community Management of Acute Malnutrition (CMAAM) programme in Saptari district (7,8). The psychosocial intervention included communication and play sessions; a session on breastfeeding and feeding practices; a session on massage, bathing, sleeping and relaxation needs; and a family sharing session. Adaptation of the FUSAM protocol is essential to incorporate the structural, contextual and socio-cultural factors that can influence the effectiveness with which the intervention can be implemented in the planned setting. Community health interventions are more likely to succeed if they are adapted to the specific context of the intervention (9). It is also important that interventions take into account the expressed needs of parents and families and consult with key stakeholders, including local health professionals and community leaders.

2. Objectives

The aim of the STIMNUT study is to assess the feasibility and acceptability of a psychosocial stimulation intervention as part of the Koutiala Therapeutic Feeding Programme (TFP) for children aged between 6 and 23 months with SAM. The study is divided into three consecutive phases: phase 1: a exploratory phase (initial assessment) using mixed research methods to gain a better understanding of the context and the main factors affecting malnutrition in the study population, as well as the experiences and needs of people consulting the

CSCOMs/hospitals; phase 2: a participatory research approach adapted to the needs of the study population; and phase 3: an assessment of the impact of the intervention on the health of the study population: an adapted participatory action research (PAR) approach to adapt the FUSAM intervention to the implementation context; and phase 3: the feasibility/piloting of the intervention followed by an evaluation process to measure feasibility and acceptability. The study was designed to establish whether integrating an adapted version of the FUSAM protocol developed by ACF was feasible and acceptable to families, health workers, communities and key stakeholders in Koutiala, Mali.

The aim of phase 1 of the study was to describe the key factors, perceptions, norms and practices influencing children's nutritional status and early development among carers of children with SAM, carers of children without SAM and other key informants - which is the subject of this report. The other two phases are presented and summarised in separate reports.

3. Method

3. 1 Type of study

Phase 1 of the study uses mixed methods and is made up of three distinct data collection phases:

- Mixed questionnaires for carers of children with SAM (Appendix 3);
- Semi-structured interviews with key informants (Appendix 4);
- Focus groups with parents of children without SAM (Appendix 5).

3. 2 Study sites

Phase 1 of the study took place in two community health centers of the Ministry of Health (MOH) supported by MSF-OCP in Koutiala and in the paediatric ward of the Koutiala referral hospital (MSF hospital). These community health centers were selected by the MSF project coordinator on the basis of their access to the MSF office (security component), the opportunity to work with the management and health staff of the MOH on site, and the number of children followed up.

3. 3 Preparing the study

During the preparation of phase 1, two methodological workshops were organised by the study's scientific committee (MSF, Epicentre, ACF) in order to adapt the tools (mixed questionnaire, individual interview guide and focus group guide) to the Malian context and ensure their appropriation by our partner in charge of data collection (AMEDD). The tools and consent forms were also translated into the local language (Bambara) by an independent certified translator, and then translated by a member of the AMEDD team (back translation). Both were compared and checked by the MSF team.

Visits to the sites selected for the study (MSF hospital in Koutiala, CSCOMs in M'pessoba and Oula) were organised by the study coordinator, to meet the various officials and local authorities in M'pessoba and Oula and inform them about the study.

During the preparatory stages, meetings were also held with the district nutrition manager and certain partners involved in malnutrition in Koutiala (UNICEF, WORLD VISION, WFP).

A pilot was organised at the Sincina CSCOM to test the various tools.

3. 4 Study population

- 18 care givers of malnourished children, including 8 at the MSF hospital in Koutiala, 5 at the CSCOM in M'pessoba and 5 at the CSCOM in Oula.
- 13 key informants, including :
    - 5 NGO staff (including staff from local and international organisations and humanitarian projects)
    - 4 workers attached to a community health centre (nurse, traditional birth attendant, community relay workers)
    - 2 traditional therapists
    - 2 representatives from local authorities (technical director and responsible for the Department of Social Development and Solidarity Economy)
- 28 parents of children without SAM. The sample was made up of homogeneous groups in terms of gender.

3. 5 Identification of participants

All participants in the interviews/mixed questionnaires and focus groups were recruited from the study sites. As for the key informants, they were recruited from the health areas of the study sites (Koutiala, M'pessoba and Oula) on the basis of their role and/or knowledge of the community in which they live.

3. 6 Data collection

Data collection began on 21 July 2022 and ended on 6 August 2022. It was carried out by AMEDD's team of one interviewer and one observer, in conjunction with MSF's study coordinator.

3. 7 Data analysis

The data was analysed by Epicentre researchers in conjunction with the AMEDD team and the MSF team in the field.

3. 7. 1 Analysis of mixed questionnaires for parents/carers of MAS children

The questionnaires administered to parents/carers of children with SAM consisted of closed questions (quantitative data) which enabled us to quantify knowledge, attitudes and practices, and open questions (qualitative data) which enabled us to explore attitudes and beliefs about care practices. The quantitative and qualitative data were initially analysed separately.

Quantitative part

Percentages, means and medians were calculated for quantitative data using STATA software, version 15 (10). When calculating the median, the interquartile range was also specified. As the numbers were very small, no other statistical tests were carried out. The study population is first described, followed by the results of the questions on breastfeeding and infant feeding, psychosocial care and other domestic health practices.

Qualitative part

Insofar as the open-ended questions resembled techniques for questioning spontaneous verbal material (such as verbal association tasks), we were more interested in the expression of the symbolic references contained in the responses (11,12). To do this, we grouped the different types of reference (e.g. affection, warmth, etc.) and took account of their occurrence using Atlas.ti software. (13). In the following section, we will first present

the questions designed to explore beliefs and attitudes towards care practices, followed by those on the care behaviours and habits practised by carers.

3. 7. 2 Analysis of qualitative data (focus groups and semi-structured interviews)

In order to gain a better understanding of the different practices, attitudes and beliefs associated with childcare, we conducted a content analysis. (14) using Atlas.ti software (13).

3.8 Ethical considerations

Authorisation from the independent ethics committee

Ethical approval was granted by the MSF Ethics Committee (Protocol ID: 2201) on 25 March 2022, and by the National Ethics Committee for Health and Life Sciences (CNESS) in Mali on 13 July 2022. The approvals are given in Appendix 6.

Ethical conduct of the study

The study was conducted in accordance with the ethical principles that originate in the Declaration of Helsinki, and the study was conducted in accordance with ICH Good Clinical Practice (GCP).

Information and consent of participants

Each participant provided written informed consent to take part in the study (Appendix 2). During the administration of the questionnaire, interviews and focus groups, each participant was assured of the confidentiality of the data, that they were free to interrupt the interview at any time or to refuse to answer any questions. Staff were trained in the ethical principles of research.

All data obtained via questionnaires were anonymised using a study identifier, with no inclusion of personal data.

4. Results

4. 1 Mixed questionnaire for parents/carers of MAS children

4.1.1 Description of the population

Socio-demographic data is presented in Appendix 7. Of the 18 participating women, 8 (44%) were interviewed while accompanying a child to hospital in phase 1 of care (n=2) or in the transition phase (n=6). The other 10 women were interviewed in one of the two study CSCOMs (56%). The median duration of admission to the programme was 11.5 days (IQR 4-24). The women interviewed were the mothers of the children they were accompanying, except in two cases where they were their grandmothers.

The average age[1] of the mothers interviewed was 26.5 years (median 28.5 years [IQR 22-30], minimum age 19, maximum age 33). All but one were married (n=17, 94%), 14 were illiterate (78%) and 4 had completed primary education (22%). Of the 18 participating women, 11 had no income-generating activity (61%), the others did, all within the same village where they were interviewed. Among the vulnerability factors identified by the investigators[2] : 10 women were breastfeeding at the time of the survey, 2 women were pregnant, 2 women lived in a family where the child's father had died, and one woman had a disability (type unspecified).

[1] Two missingdata
[2] Several answers possible (Question 528)

The children accompanied by the women (9 girls and 9 boys) were on average 0.9 months old (median 1 [IQR 0.6-1.1], min age 6 months, max age 18 months) and 72% of them (n=13) were born prematurely[3] . All the children were born vaginally, in the health centre or hospital in all cases except one, who was born at home. One child was disabled, and they all had severe acute malnutrition at the time of the survey.

The families consisted on average of 9 children[4] (median 8.5 [IQR 4-11], min: 1, max: 25). With regard to the fathers' level of education, 12 were illiterate (67%), 2 had achieved primary education (11%) and 4 secondary education (22%). Most fathers had an income-generating activity (n=14, 78%), with 'agriculture and livestock' being the most common (n=12, 67%), followed by trade (n=4, 22%), day labour (n=1, 6%) and another source of income (n=1, 6%).

4.1.2 Data results on perceptions, norms and practices

Details of the data presented are *given in Appendix* 8

Breastfeeding and infant nutrition

Knowledge about breastfeeding

Most women questioned (n=13, 72%) replied that it was recommended to breastfeed a baby within two hours of birth, 3 that it was recommended to breastfeed after the first two hours and 2 did not know.

Of the women questioned, 6 (33%) said that exclusive breastfeeding was recommended up to 6 months, 4 (22%) up to 10 months or more. For 2, it should be less than 6 months and 4 did not know.

Finally, the introduction of foods other than breast milk should be done two or three months after birth for the majority of women (n=16, 89%), at birth for one woman, and after one year for one.

To the question "*Would you like more information on breastfeeding and complementary feeding practices?*" 16 women (89%) said yes, 1 said no and 1 had no opinion on the matter.

Breastfeeding habits and practices

Only three children were not being breastfed at the time of the interview, and each was over a year old. Of the 15 children who were breastfed, two (aged 11 and 17 months respectively) were exclusively breastfed, two (aged 6 and 7 months) were breastfed with water and the other 11 were mixed.

At birth, 12 of the 18 women breastfed their child immediately (within an hour of birth), 3 started more than an hour later and 3 said they didn't know.

Another liquid (such as powdered milk) was given to the child before 6 months in 11 out of 18 cases (61%). In the other cases, the mothers/carers questioned said that they had not introduced any liquid other than breast milk before 6 months.

Feeding young children

[3] Born before 37 weeks
[4] Data from question 510: "Number of children in the family".

14 women said[5] that their child sometimes refused to eat.

Meal preparation was the responsibility[6] of mothers (n=15, 89%), co-wives (n=6, 33%), siblings (n=3, 17%), fathers (n=3, 17%), grandfathers (n=1, 6%) or grandmothers (n=1, 6%). At mealtimes, the median number of children eating from the same plate was 4.3 ([IQR2.6], min = 1, max = 15). A majority of the participating women considered their child's access to food at mealtimes to be 'very good' or 'good' (n=13, 72%), while the others considered it to be 'average' (n=3, 17%), 'difficult' or 'very difficult' (n=2, 12%).

Psychosocial care

Interaction

Most of the women surveyed (n=16, 89%) said that it was 'very important' to interact with children from birth, one said it was 'fairly important' and one said it was 'not important'. Just over half of the women said that it was possible to interact with the children while doing other activities such as housework (n=10, 55%) and for 8 (n=44%) this was not possible.

Games

To the question "*Do you have time to play with your child?*", the majority answered "yes" (n=15, 83%), and do so "occasionally" (n=7.47%) or regularly (n=8, 53%), while they usually use toys to play with their child "occasionally" (n=6.40%) or regularly (n=9, 60%).

Massage

All the women replied that it was important to massage babies.

Half of the women used to massage their child 'occasionally' (n=10, 50%) or regularly (n=7, 39%), while one woman never used to massage her child.

To the question "Are *there specific parts of the body that you massage more often? If so, which ones?*"[7] , the following were mentioned in order of importance: the back (n=16), the feet, hands and legs in the same proportion (n=13), the stomach (n=10), the head (n=9) and the face (n=8). Five women added that they also massaged other parts of their child's body: 'the side' (n=3), the ears (n=1) and the chest (n=1).

Sleep

All women believe that good sleep is "very important" for babies.

To the question "*What does your child do when he wants to sleep?*", the following were cited in order of importance: cry (n=16), yawn (n=12), rub his eyes (n=9), doesn't want to play (n=3) or shake his arms and legs (n=1). Two other women added "he laughs until he falls asleep" and "suckling".

Bath

In most cases, the mother appears to be responsible for the bath[8] (n=15), followed by the grandmother (cited 6 times), the brothers and sisters (n=2) and the co-wife (n=1) or father (n=1).

[5] Missing data (Question 106)
[6] Several possible answers (Question 403)
[7] Several answers possible (Question 215)
[8] Several possible answers (Question 404)

Other domestic health practices

It is the father (n=17) who decides what is spent on food/care/health for the child at home[9] , followed by the mother (cited by 3 women).

In most cases (n=14, 78%), more than one person looked after the children at home, while in three cases the women replied that only one person looked after the children at home.

The main carer at home[10] was the mother (n=12), father (n=8), grandmother (n=7), co-wife (n=4) and siblings (n=1).

4.1.3 Results of qualitative data

Beliefs and attitudes towards childcare practices

The term "*taking care of the child*" (q. 101) evokes for most caregivers the importance of the child's diet (13 occ.) and the need to look after hygiene (12 occ.). To a lesser extent, they associate play (4 occ.), sleep (3 occ.) and the need to refer to health centres in the event of a problem (2 occ.), among others[11] .

On the other hand, the caregivers associated *the child's physical and mental development* (q. 103) *with* the type of food (16 occ.), breastfeeding (7 occ.), play (5 occ.), affection provided by the mother (3 occ.) and hygiene (5). Only one associated child development with traditional medicine (1 occ.)[12] . These initial results therefore show that certain care practices (e.g. feeding) are recalled more than others (e.g. play).

As regards attitudes and beliefs relating more specifically to the interaction between carers and children, the results show that massage (q. 214) is often a valued practice (16 occ.), with only two participants rejecting the idea of massaging children[13] . Furthermore, when it comes to the behaviours or reactions associated with a situation where a child is "not behaving *well*"[14] (q. 203), the caregivers most often mention the need to call the child to order (verbally and/or physically) (14 occ.) to ensure that the child receives a good education (8 occ.). On the other hand, two participants stressed the need to show affection (2 occ.) and two others considered that scolding children was not acceptable behaviour (2 occ.)[15] .

Lastly, the participants said that the difficulty in talking to the children (q. 206) was due to the women's excessive workload (8 occ.). Nevertheless, three participants stressed the importance of paying attention to the child, the possibility of calling on other people around them (3 occ.), the need to communicate (4 occ.), to play with the child (4 occ.) and to show affection (2 occ.)[16] .

Practices and habits of carers

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[9] Several answers possible (Question 523)

[10] Several answers possible (Question 516)

[11] Massaging the child (1 occ.) ; Ensuring a good education (1 occ.) ; Affection (1 occ.) ; Redundant response (2 occ.)

[12] In addition, there was one no answer (1 occ.) and one incomprehensible answer (1 occ.).

[13] *"I don't do it because I don't want to practise*" (mother, aged 20); "*When the child is ill, we don't massage him*" (mother, aged 29).

[14] e.g. *"makes a noise, knocks sth over"*.

15 We also have an Incomprehensible reply (1 occ.)

[16] We also have a participant who reminds us of the need to breastfeed (1 occ.), two redundant responses.

Furthermore, regarding the practices and habits of caregivers related to play (q. 209, 212), the participants show favourable attitudes towards playing with children (29 occ.)[17] . In addition, the caregivers associate playing with their children with a space where the emotional bond (9 occ.) and communication (2 occ.) develop. [18]. Nonetheless, two participants highlight women's overwork as a constraint (2 occ.).

As regards the way in which carers encourage and motivate children (q. 202), showing warmth and affection (11 occ.) is the most important indicator. To a lesser extent, the participants mentioned play (5 occ.), communication (3 occ.) and rewarding with food to encourage the children (2 occ.). Only one participant said that she did not adopt behaviours that encouraged her child[19] .

On the other hand, when it comes to bathing (q. 205), several techniques are described (e.g. use of shea butter[20]. In general, several baths are given each day (8 occ.), the importance of hygiene is stressed (2 occ.) and bathing is associated with a time when the carers (mainly responsible for washing the child, 9 occ.)[21] can communicate with the child (2 occ.) or even massage him (2 occ.).

The children's usual days (q. 104) are spent in the presence of siblings (8 occ.) and mothers (9 occ.) (and to a lesser extent grandmothers)[22] . The caregivers associate the child's usual day primarily with playing (11 occ.) and to a lesser extent with eating (3 occ.) or breastfeeding (4 occ.) and sleeping (2 occ.). In only one case was the mother's work as a constraint for playing with the child mentioned (e.g. "*He plays with the nanny after a while and then I breastfeed him and say byebye and carry on with my work*", mother, age unknown).

Similarly, the child's meals (q. 105) are eaten in the presence of other family members (siblings, 4 occ.; grandmother, 1 occ.). Practices varied: in some cases, the child ate with the other children (3 occ.) and with the family (6 occ.). In other cases, the child eats separately (5 occ.):

> *"He's getting bigger. He eats alone. He doesn't eat tot at the moment. The tot makes the child sick, because it's not rich*" (Mother, age unknown)

This extract also illustrates that certain meals are considered harmful to children's health. On the other hand, other carers highlight the foods or recipes they use (5 occ.) to feed their children:

> *"I make him special dishes like fish soup and give him orange, banana and apple fruit"* (Mother, aged 30).

[17] Some say they use toys (15 occ.) and others say they don't (6 occ.).

[18] To a lesser extent, it is also associated with the need to supervise the child (1 occ.) and with physical stimulation of the child (1 occ.). There was also 1 incomprehensible response.

[19] "I don't do that at all" (mother, aged 22). We also had 2 incomprehensible answers.

[20] One participant says she uses shea butter, and another says she massages it with "ointment". Here are a few extracts that can serve as examples: "I wash twice a day. I talk to him when I bathe him" (mother, aged 25); "I wash him in the morning with soap and in the evening with medicine, I talk to him" (mother, aged 20); "I wash him twice a day with soap and in the evening with medicine, I talk to him when I bathe him" (mother, aged 25).
"I wash him around 1pm. I heat up the water, wash him, dry him and dress him 2 or 3 times depending on the season. I laugh with him while I'm washing him". (grandmother, age unknown). As a general rule, the participants talked about washing the child with warm water and soap. Some stressed that bath time was a time for interacting with the child, and two explained that bath time was a good time for massaging.

[21] The grandmother (1 occ.) and siblings (1 occ.) were also present in one case.

[22] Only one case shows the presence of the nanny (1 occ.)

To a lesser extent, breastfeeding (1 occ.) and the importance of hygiene (1 occ.) were mentioned. The variety of meals varies according to the income of the carers (1 occ.)[23].

In addition, attitudes to a child's refusal to eat (q. 107) can be divided into three types of attitude:

a) Cases where the carers had no answer (6 occ.). In only one case was it specified that the refusal was associated with a choice on the part of the child: *"He only refuses when he's full"* (Mother, aged 19);
b) Cases where the carers associated the refusal with a need for referral to health centres (4 occ.).
c) The cases where the carers revealed perseverance, whether by insisting (e.g. "*Asking to eat by joking*", interview 2tdv-xwmv-xwm7) or by replacing the meal with another (1 occ.) or by breastfeeding (2 occ.). In addition, the need to show affection and warmth is emphasised (5 occ.), and one participant reveals that she uses games to convince the child to eat (1 occ.).

Similarly, in situations where the child is in distress (q. 204), the caregivers call on health centres (3 occ.), play (4 occ.), breastfeeding (3 occ.) and/or feeding (4 occ.). To a lesser extent, communication (1 occ.) and massage (1 occ.) were mentioned. Only one participant raised the idea of: "silencing the child" (1 occ.).

Finally, regarding the *transmission of* know-how/parenting (q. 102), the accompanying women said they had not received advice on parenting (8 occ.), while others said they had received advice from health workers (4 occ.), close relatives (3 occ.), the grandmother (2 occ.), the husband (1 occ.) and from information on the radio (1 occ.).

4.2 Results of semi-structured interviews with key informants

The thematic analyses of the key informant interviews (cf. - Thematic analysis tables (key informant interviews) identified various practices, traditions and obstacles encountered within the Koutiala community. In the following sections, we present the findings on a) childcare practices and associated constraints, and b) the care pathway in the event of illness.

Table 1 Description of participants

Id	**Profession**	**Type**
D2	Nurse	Woman
D3	Agent for an international NGO	Men
D4	International humanitarian project officer	Men
D5	Head of a local NGO	Woman
D6	Agent for a local NGO	Men
D7	International humanitarian project officer	Men
D8	Farmer and CSCOM community liaison officer	Men
D9	Head of the Social Development and Solidarity Economy Department	Men
D10	Traditional therapist	Men
D11	Traditional birth attendant	Woman
D12	Traditional birth attendant	Woman
D13	Community health worker	Woman
D14	Health Centre Technical Director (DTC)	Men

[23] We also have an incomprehensible answer.

A) Care practices and associated constraints

In this section, we will look at the care practices spontaneously mentioned by the participants, as well as the constraints perceived in terms of the family unit, resources and beliefs and practices.

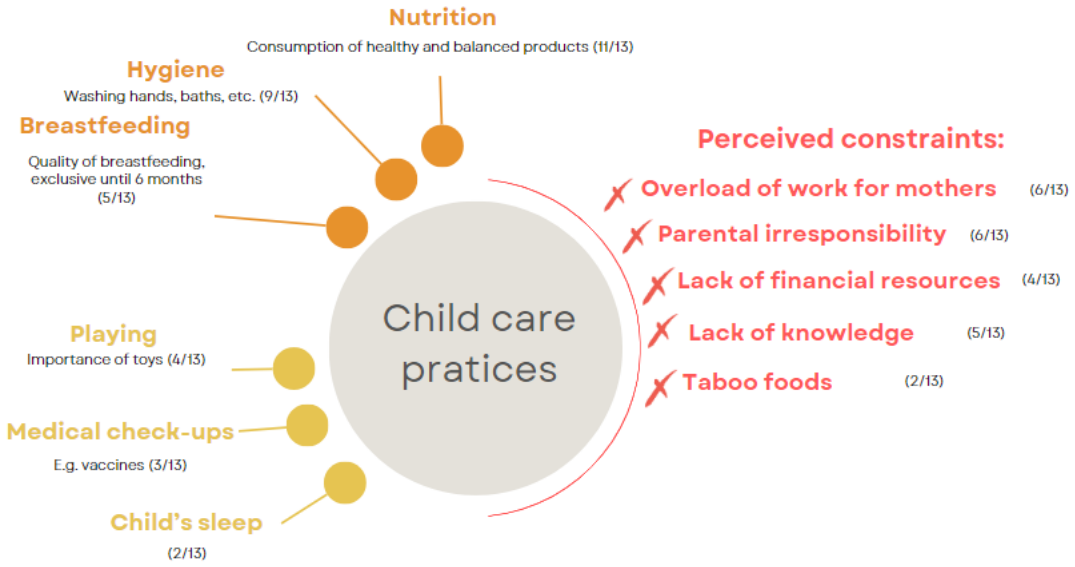

Figure 1 Most frequent care practices and constraints mentioned in the semi-structured interviews

The Figure 1 shows the most recurrent care practices in the key informants' discourse. Nutrition was mentioned in 11 interviews, hygiene in 9 and the importance of breastfeeding in 5. To a lesser extent, participants mentioned the importance of play (4), medical check-ups (3) and the child's sleep (2). Nevertheless, participants identified several constraints that limit the quality of care provided to children. The table below details the constraints perceived by the participants:

Table 2- Constraints perceived by participants as limiting the quality of care provided to children

Level	Type of barrier perceived	Example
Family unit	Parental irresponsibility	*"Parents don't look after their children either. They are left to their own devices. Children can go out into the street without their parents knowing. Accidents, illnesses and many other things can happen there. So I think that's one of the big problems for children. Lack of parental supervision. (Male, traditional therapist)*
	Overloading women	*"If you're a mother, the first constraint is time. In our communities, women are so overburdened that they don't have the time to look after their children properly, even if they want to." (Male, NGO worker)*
	Ignorance of mothers	*"The major constraint here is ignorance. I myself give a lot of advice to my wife about looking after the children. Often the child falls ill without her knowing." (Man, farmer and community relay worker)*
Accessibility and resources	Lack of financial resources	*"The other constraint is that we may also be limited financially in this context. Because you may have the will, but even if it's minimal, you have to put in place the means to gather the*

		necessary resources. And that too is a constraint." (Woman, head of a local NGO branch)
Ancient / traditional beliefs and practices	Taboo foods	*"For example, you could say that a child should not eat meat at night, drink milk or eat eggs in winter to avoid catching malaria. And we know today that this isn't true". (Man, international humanitarian project worker)*
	Parenting standards	*"These communities are often traditionalist. In terms of protection, we face challenges, especially when it comes to children's rights. There is also the weight of habits and customs, there are certain practices that are not really to be encouraged." (Male, international NGO worker)*

In general, participants identified three ways of explaining why childcare is limited in the community of Koutiala. These ways of explaining the problem, the causal attributions, refer to three different levels: a) at the level of the family unit; b) at the level of accessibility and resources; c) at the level of beliefs and practices rooted in the community, perceived as 'ancient'.

Perceived constraints within the family unit

There was a consensus in all the interviews on the gendered distribution of childcare in community homes. All the participants agree that the child's mother is the one who takes care of the child (feeding, hygiene, play, etc.). However, there were two different views on the role of the carers. The first is based on the factual organisation of women's tasks, making external causal attributions (e.g. it's because Malian women are overworked that they don't have time to look after the children). The second is rooted in stigmatic discourses, in which internal causal attributions are made (e.g. *mothers are lazy* and therefore do not provide quality childcare).

In addition, the father, as head of the compound, is associated in all the interviews with the person responsible in the event of illness and for household expenses; for example, the interviewees explain that *"All decisions are taken by the head of the compound"* because *"the man is the head of the household and responsible for property" (*Woman, nurse*).*

Nevertheless, despite the consensus on the roles of mothers and fathers in childcare, some key informants raised the issue of parental "*neglect"* or irresponsibility. Three interviewers explained, for example, that parental neglect was due to the high number of children per household. The interviewees linked the lack of care and even malnutrition to the responsibility of both parents:

> *"The children suffer from malnutrition because the mothers don't take care of them. The women who come with the children are generally pregnant because they don't practise family planning. The men don't help them either*. (Woman, community health worker)

In addition, grandmothers, as women, are seen by some interviewees as possible relays for mothers in terms of childcare, such as bathing, feeding, etc.. For example, in the Minianka community, playing with and bathing children are tasks that involve women, but not men:

> *It's the wife who takes care of the bath. As long as she's at home, she does it. Even if the mother isn't at home, it's the grandmother or older sister who does the bathing. Otherwise, especially among the Minianka, the man doesn't wash the child.* (Man, international NGO worker).

To sum up, the constraints perceived by the key informants (at the level of the family unit) can be summed up as Malian women being overworked, mothers being perceived as ignorant and parents being irresponsible. In

addition, the care given to children follows gender norms that seem to be socially entrenched (e.g. women feed and wash the child vs. men playing with the child).

Perceived constraints in terms of accessible resources

Some participants raised the issue of lack of resources and access to care. For example, the lack of financial resources means that families cannot afford food, travel to health centres and medical care (e.g. medicines).

Perceived constraints in terms of "old" beliefs and practices

> The participants highlighted certain beliefs and practices, which they called 'traditional' or 'ancient', and which limit the care given to children within the community. For example, the norm of 'not spoiling children' was seen as a sign of good parenting. In this way, the values and practices socially valued by the community shape the interactions between carers and malnourished children: *"But the community thinks that* [psychosocial stimulation] *is frowned upon. If you do it, they say you're giving the child a bad education because he belongs to the community. It's synonymous with making him a spoilt child. So* ***we think that children shouldn't get used to the easy way out.*** *Otherwise, they will suffer the day they leave their parents".* (International humanitarian project officer)

This extract illustrates how the interaction and care we give to children can be put in tension with the norm of 'not making children accustomed to the easy way out'. Eating habits also seem to meet this standard:

> *"For example, if we prepare soup, it's the elderly who eat it and we think that if we give it to the child, he'll be spoilt. We need to leave* ***the old practices*** *behind to help the children develop better"* (International humanitarian project officer).

Furthermore, one interviewee put forward the idea that certain members of the community might confuse children with a 'big belly' with 'well-fed' children:

> *"In some families, the children eat the same meal as the adults. That's what's forbidden, the child will have a big belly but there's hardly anything nutritious."* (Local authority)

According to the interviewee, some community's members could be faced with a cognitive dissonance between the observation of the child's physical build and the quality of its nutrition.

In a similar vein, another interviewee describes the tensions between the rights (particularly regarding children) and traditions of certain communities:

> *"These communities are often traditionalist. In terms of protection, we face challenges, especially when it comes to children's rights. There is also the weight of habits and customs, there are certain practices that are not really to be encouraged."* (NGO officer)

The NGO worker then gave the example of child marriage, which means girls dropping out of school. To sum up, these socio-cultural tensions contrast traditional norms and lifestyles with the quality of care given to children.

Furthermore, the testimonies raise a contradiction between the community's potential for agricultural production and the type of food consumed in the community's homes. More specifically, the informants agree that the community has all the products needed to feed its children, as the following extract illustrates:

> *"It's hard to believe that we are malnourished, which means that what we produce we don't consume. And what we consume, we don't know how to use. Otherwise, we have everything here to avoid malnutrition" (Local authority)*

Nonetheless, the informants differed in their understanding and views of the quality and type of produce consumed. For example, an employee of a local NGO sees changes in the way families consume more and more local produce. On the other hand, another international NGO worker sees a gap in the way the

community's inhabitants consume and store food products. Other informants attributed responsibility for the low consumption of healthy products to the accompanying women, as the following extracts illustrate:

> *"Women produce a lot of vegetables but their consumption remains low. This is **either due to ignorance or greed**".* (Nurse)

> *"When we talk about these difficulties, they'll talk about poverty, but I think it's just **ignorance and laziness on the part of mothers**. We have a lot of products here that can help us prevent children from falling into malnutrition. But because of women's ignorance and laziness, children don't benefit from these products".* (International humanitarian project officer)

In these examples, the causal attribution of malnutrition in children is based on personality traits (*greedy, lazy*) and the level of knowledge of mothers (*ignorance, lack of knowledge*).

In other words, while most interviewees agree that the region has sufficient food resources available, they express causal attributions that range from the systemic level (management and accessibility of healthy food) to the intrapersonal level (mothers perceived as incompetent). To sum up, the key informants put forward the idea that "we produce a lot of food, but we consume it badly".

b) The care pathway in the event of illness

The structures and players identified for care in the event of illness are organised according to the type of care/medicine and can vary according to the more or less advanced state of an illness. Indeed, some participants mentioned self-medication as a first resort. Secondly, the majority of participants identified traditional therapists as the primary players in the care of children, with medicine based in particular on the use of plants. The care provided by traditional therapists is socially valued:

> *"In every village you can find a recognised traditional therapist"* (Humanitarian project officer).

> *"The community consults and respects traditional therapists". (Traditional therapist, woman).*

Finally, most participants presented the health centres as the second most frequently consulted structures in the event of illness in children: CSCOMs, , dispensaries and maternity units, and the Hospital. Several participants pointed out that access to health centres had increased because the care provided by MSF for children is free. However, some participants mentioned the problem of late decision-making:

> *"One difficulty is that some women don't bring their children to the malnutrition screening with MSF. This can have serious consequences, including death. There are always people who are reluctant".* (Traditional birth attendant)

Access to health centres requires the agreement of the father and/or head of the concession[24]. For example, for an international humanitarian project officer: *"Everything is linked to men"* in decision-making, in a similar way, a local authority and a humanitarian project officer explain:

> *"Men don't often allow women to come to the health centre for nutrition activities".* (Local authority)

> *"Often, even if the child falls ill, the husband is slow to decide to take the child to the health centre, as the wife does not have the means, even if she has the means, she cannot take the decision to take the child to the health centre".* (Humanitarian project officer)

The Figure 2 illustrates the typical care pathway presented by the informants.

[24] In the context, the "concession" refers to a piece of land or property where several families or individuals are living together. The head of the concession is often a man, or an elder woman or grandmother.

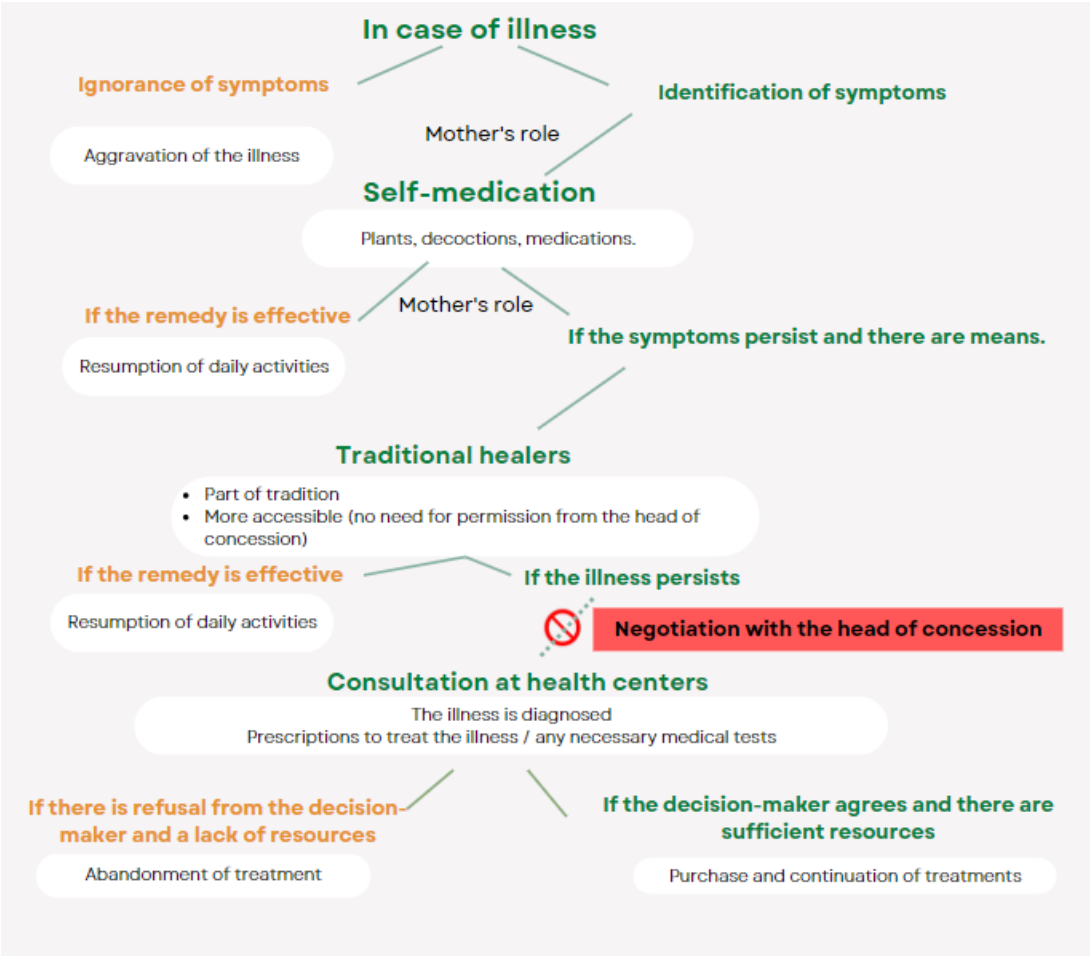

Figure 2 Typical care pathway as presented by key informants

To sum up, the results show that the first challenge is to identify the symptoms of the disease. Then, self-medication seems to be the first recourse, insofar as the mother can do autonomously. In cases where symptoms persist, referral to traditional healers appear to be a 'cheaper' and socially accepted solution for treating the disease. However, if the illness is too advanced, seeking treatment in health centres is seen as necessary, but it does require negotiation between the mother and the head of the concession, who is responsible for household expenses. Finally, some participants mentioned the possibility of abandoning the treatment given at the health centres, in cases where the family does not have the necessary financial resources.

4.3 Results of the focus groups

Five focus group discussions (FGDs) were held in the health centres. The groups (of between 4 and 8 people) were made up of parents of children without SAM and were homogeneous in terms of gender (4 female groups, 1 male group).

Table 3 Description of focus group participants

Id FGD	Nº and gender of participants	Venue
FGD35	5 Women	Koutiala Hospital
FGD36	4 Women	Koutiala CSRef
FGD37	6 Men	CSCOM Oula
FGD38	5 Women	CSCOM M'Pèssoba
FGD39	8 Women	Oula CSCOM

The results of the focus groups are organised into four parts:

1. How the people of Koutiala look after their children
    a. Results of the verbal association task (inducing term: *taking care of the child*)
    b. Features of care
    c. Organisation of the family unit and distribution of roles
2. Habits and care practices relating to eating, bathing, sleeping and playing
3. Perceived obstacles and constraints to caring for the child
4. How to deal with these obstacles and problems

How do the people of Koutiala look after their children?

In this section, we will first present the results of the verbal association based on the stimulus word "taking care of the child". We will then look at the constraints perceived by the participants as limiting the quality of care given to children, and the strategies devised to deal with them.

a) Results of the verbal association task using the stimulus word "take care of the child".

Verbal associations fall into three main categories:

- **Hygiene-related care** (FG36, FG37, FG38, FG39): in most groups, participants mentioned the word "*hygiene"*, and some gave more specific details, such as "*washing the child if it cries"* (FG39), "*avoiding dirt"* (FG36, FG37), "*ensuring that the child is clean"*, etc. (FG38, FG39).
- **Feeding-related care** (FG35, FG36, FG38, FG39): more specifically, we find the words "*feeding"* (in 3 FGs)*, "giving healthy food", "giving oranges or bananas after breastfeeding", "giving porridge enriched with milk", "if the child is clean and hungry, we give him something to eat".*
- **Care related to protection and disease prevention** (FG35, FG38): we find the word '*protection'* but also habits such as *'I give him decoctions of Zondjè (Leptadenia hastata) and Gnaman (Piliostigma reticulatum). [...]. If you do this even if you have a problem with breast milk, the child won't feel it". (FG38)*
- **Care linked to affection** (FG37, FG39). For example, in FG37, which was made up of fathers of children, the participants repeatedly stressed the importance of showing love to the child and monitoring the child's emotional state ("make the *child happy again if he is unhappy"*, "*soften the child*

up"). In the FG39 group of 8 childminders, the participants linked the child's state of health with the mother's emotional state*: "If the child is healthy, the mother is happy and the child is happy too".*

To sum up, some types of care were mentioned more spontaneously and in a shared manner (particularly hygiene and the importance of food) than others (such as breastfeeding or affection). Other words and actions were recalled less frequently and more widely, such as "*sending children to school"* (FG35) and "*looking for the birth certificate"* (FG37). Lastly, participants frequently mentioned generic words such as "*health", "clothing" and "looking after the child"*.

b) Characteristics of childcare in the community

The answers given to the question "*How do the people of Koutiala look after their children?* vary according to the type of group. On the one hand, in the women's groups, the answers provide information on the different techniques used by parents to meet the child's essential/vital needs (FG35, FG36, FG38, FG39), as the following examples illustrate:

- FG35: *washing, dressing, breastfeeding, potty training*
- FG39*: breastfeeding, looking after the child's health, dressing the child, looking after the child's sleep*
- FG38: "*we wash him properly, we breastfeed him, but first of all we wash the breasts well, we protect the child from any dirt"; "you wash the breast before breastfeeding him because we go into the bush and when we come back the breasts are dirty".*

Ensuring personal hygiene, not only for the child but also for the mother at breastfeeding time, was also mentioned in the FG39 group (*"You wash him clean and breastfeed him. If you go out, you wash your breasts before breastfeeding"*). In a similar way to groups FG37 and FG38, group FG36 established a consensual link between the child's state of health and the mother's emotional state.

On the other hand, in the FG37 group, made up entirely of fathers, the responses were based on an opposition between the norms valued in the group (e.g. the importance of paternal responsibility) and the practices perceived as deviant and attributed to the "*isolated*" inhabitants of the community:

> *"If you pay attention to the child, if you only see that he's suffering, do everything you can to take him to the health centre. With some fathers, the child can fall ill for up to three days if he doesn't take him to the health centre.*

Finally, when it comes to psychosocial care related to learning:

- In cases where the child is in distress (FG38[25]), the participants adopt behaviours that are based on a maternal-emotional bond and that seek to reassure the child;
- In cases where the child does not behave in the way expected by the parents (FG37, FG38[26]): the participants explain that they use different methods to make their children understand that their behaviour is undesirable (e.g. threatening the child, scolding them, hitting them);
- In cases where the child behaves as expected or shows signs of development (FG37, FG38): the participants emphasised the need to encourage autonomy and show positive emotions to the child.

[25] This is the only group in which the question was asked
[26] These are the only groups in which the question was asked

c) Organisation of the family unit and distribution of roles

In the groups made up of mothers with children, there was a consensus among the participants that, generally speaking, the mother is the one who looks after the children more. Furthermore, the role of fathers and husbands is linked to managing expenses (FG35) and making decisions in the event of illness in the child (FG36, FG38, FG39). This distribution of roles between mother and father is explained in groups FG37 and FG39 by the fact that the father is not often at home, unlike the mother:

> *Participant 2 : (...) the woman has to look after the child because she's the one who stays at home most of the time, the father rarely stays at home, but it's the mother who stays at home, she's the one who can look after the child.*

On the other hand, participants in the FG36 group explained this distribution of roles by the fact that mothers do not often have an income or paid work, so they do not have the means to buy prescriptions:

> *Translator: They say she should have more responsibility but the problem is that mums don't work (...) so if you need something, you have to ask your husband before you do it.*

However, for other participants, the power of decision lies with the father, even in cases where mothers have income:

> *Participant : If the husband isn't at home, that's when the mother decides, but if the father is at home he decides, even if the mother has money, it's the father who decides whether you can go to hospital or even buy a prescription.*

In addition to the parents' roles, the participants mentioned other members of the family unit who are involved in caring for the children:

- FG35: "the old members of the family", "the grandmother", "the big sisters", "the grandfathers".
- FG36: "grandmother" who looks after the child in the mother's absence and who, according to the participants, has a role to play in decision-making in the event of illness in the child.
- FG37 and FG38: "grandmother".

Play habits and practices

With regard to children's play and activity habits (cf. - Thematic analysis tables (key informant interviews) participants in three groups agreed that it was the mother's role to decide when the child could play, while participants in only one group felt that it was the father's decision. Play-related activities vary according to the objects used (e.g. *toys, dolls, bells, old kitchen utensils*), the space (e.g. *outside, tree branches*) and the person with whom the play is established (e.g. *wrestling* among siblings or *dancing and singing* with mothers). Finally, two groups of carers emphasised the importance of play in developing the emotional bond between mother and child.

Food habits and practices

The food given to children seems to vary from one group to another. For some parents, the children's meals are the same as those of other adults. Others, on the other hand, specify that the children have specific dishes

(e.g. enriched porridge, tô[27] , fruit, eggs, milk). On the other hand, cases where children refuse to eat raise dissent in terms of perceptions and behaviour. On the one hand, some parents say they replace the food their children refuse with another (porridge, syrups, breastfeeding). In addition, some expressed the importance of providing emotional comfort (e.g. *coaxing, talking to the child*). On the other hand, they interpret the refusal to eat as an expression of the child's preferences ("*he doesn't like that*"). Finally, if the refusals persist, the parents turn to outside help (health centres, traditional therapists, Imams).

Sleep and bath habits and practices

Children are often bathed between 2 and 3 times a day, particularly before going to bed. Only two groups mentioned massage, pointing out that it has an impact on children's well-being: *"Massage is not necessarily a tradition, but many people do it, especially with shea butter; if you massage with shea butter, the child feels good" (FG36).* (FG36). Other parents put forward other techniques for putting children to sleep, such as breastfeeding or carrying them on their backs. Parents also spoke of the need to use mosquito nets in view of certain perceived risks, such as mosquito bites or infection from parasites. Finally, for one group of parents, disturbed sleep is associated with a health problem in the child.

Perceived obstacles and constraints to caring for the child

Finally, parents raised a number of constraints that could limit the quality of care provided to children.

- The first type of constraint perceived by the participants relates to the family unit:
    - "Neglect by mothers"
    - Parents' lack of knowledge about free health centres
    - Spacing between births (which increases the need for financial resources and reduces the time spent caring for each child and the availability of mothers to play, for example);
    - Women's overwork ;
    - Mothers' dependence on permission from concession chiefs to take their children to the health centre;
    - Other people's opinions (taking care of a child can be frowned upon in the community, where the norm is not to get children used to the easy way out)[28] ;
    - Poor hygiene conditions ;
    - The family's financial means (which has an impact, for example, on the quality of the food given to the children).

The strategies for dealing with the constraints perceived by the participants consist of :

[27] *"Tô, a paste made from millet flour, sorghum or rice with a baobab, sorrel and okra-based sauce, is the main dish for most Malians*". Lenta & Milano, Mali de la terre à la table, Slow Foundation, https://www.fondazioneslowfood.com/wp-content/uploads/2015/04/ricette_mali_FRA.pdf

[28] Extract from the FG37 discussion group:
"Participant 1: (...) I don't know how to put it, that you look after your child up to a certain level, which is what your colleagues will tell you.
Interviewer: What level?
Participant 2: Eeeh, because you love your child too much.
Participant 1: People criticise you for spoiling your child. For me, that's misunderstanding, everyone should try to get closer to their child.

a) Raising awareness among parents, particularly fathers and heads of concession, of the importance of caring for children and involving them in monitoring and treating children's illnesses;
b) The need to adopt nutritious recipes and foods for children ;
c) To deal with the difficulties caused by closely spaced births, some participants suggested making contraceptive methods more accessible. However, this last suggestion gave rise to dissension in the groups. Some argued that the adaptation of contraceptive methods or family planning should be available to women, even if their husbands did not agree, while others were opposed to the idea.

Care in the event of illness in children

The results highlight two types of care pathway. The first type of care pathway for sick children consists of first turning to traditional therapists (FG35). Nevertheless, this type of care pathway created dissent in the discussion groups. For example, in the FG36 group, participants said that they went to traditional therapists for health problems related to the accompanying women, but not for the children. Children are taken directly to the CSCOMs, where treatment is free. The reason why adults go to traditional healers is to save money.
On the other hand, for the FG37 group, turning to traditional therapists is part of the community's ancient practices. The participants see traditional practices not as supplementary to biomedical medicine, but as opposed to it:

> *Participant : We used to take them to old people's homes. There were old men and women in practically every village to do this. If they were ill, we would take the children to them and they would massage them with oil while reciting incantations. **But today** our only hope is the health centre. If the children fall ill, we take them there - that's our hope.*

The second type of care pathway in the event of illness consists of direct referral to health centres (FG35, FG36, FG37, FG38, FG39). For example, in the FG38 and FG39 groups, participants explained that if the illness is "*violent"*, they first inform the father and then turn to the health centres. On the other hand, if the illness was perceived as less serious, participants explained that using plants was a cheaper alternative than treatment at health centres.

5. Recommendations

Table 4 Researchers' recommendations from questionnaires with parents of SAM children and focus groups with parents of non-MAS children.

Theme	Observation	Proposed recommendation
Breastfeeding and infant feeding practices	Breastfeeding knowledge and practices do not always follow WHO recommendations (in particular, the early introduction of foods or liquids other than breast milk before 6 months seems to be common).	Include a module on breastfeeding
	Early diversification of food	Include a module on diversification
	Food module, use of local foods, cookery workshops	Eat a varied and balanced diet
Psychosocial care	All of FUSAM's practices seem to be in line with family habits, with the possible exception of massage and sleep	A better understanding of massage practice.
Organisation of household tasks	Women's work overload constraints and their inability to visit the community health centers	Raising awareness of the gendered division of household tasks ? working with mothers to identify levers for action
	The head of the family has strong decision-making powers	Encouraging fathers to be involved in their children's lives
Community perception	Stigmatisation of families with SAM children	Raising community awareness
	Families of SAM children can feel isolated	Organise parents' meetings to disseminate information
Use of healthcare services	Resortingto health centres late, variable quality of reception in community health centers + cost barrier	Encourage parents to bring their children to MSF nutrition centres if they are ill.

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7. Appendices

Appendix 1 General participant information sheet for accompanying persons/parents ≥18 years of age and parents/guardians of accompanying persons/parents <18 years of age

**This letter has been adapted from the FUSAM protocol.*

Newsletter for adults (≥18 years) who are parents/carers of MAS children

To the interviewer: Read this statement to the interviewee and obtain his/her consent before starting any assessment.

<u>Title of study</u>: Stimulation psychosociale en nutrition (STIMNUT), Koutiala Mali

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- Médecins Sans Frontières / Doctors Without Borders (MSF), Koutiala, Mali
- Epicentre, 14 - 34 Av. Jean Jaurès, 75019 Paris, France
- Ministry of Health and Social Development, Cité administrative Bamako BP 232, Mali
- Action contre la Faim, 14 Bd de Douaumont, 75017 Paris, France

Promoter: Médecins Sans Frontières / Doctors Without Borders (MSF), Koutiala, Mali

Site :

Name of participant :

Identification number _____ Age

Dear Sir or Madam

My name is, ..., (name of person obtaining consent), I work for Médecins Sans Frontières (MSF) /(or) the Department of Health (DoH). You are invited to participate in a study being conducted by MSF and Epicentre (MSF's research association), in collaboration with the DoH in Koutiala. Before you decide whether or not to participate, it is important that you understand the contents of this information leaflet, which explains the different aspects of the study. You can read this leaflet, or it can be read to you, and we will explain it to you and answer any questions you may have. Before you decide whether or not to take part in this research, it is important that you understand why this research is being carried out and what it involves. Please take the time to read this information letter carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. If you decide to take part, you will be given this information sheet to keep and asked to sign a consent form. If you decide to take part, you will always be free to withdraw at any time without giving any reason. The decision to withdraw at any time or not to participate will not affect any aspect of your child's current or future treatment.

Why was I asked to take part?
We are asking you if you would like to take part because you are a beneficiary of medico-nutritional treatment as part of the Community Management of Acute Malnutrition (CMAM) programme.

What is the purpose of the study?
The aim of this study is to assess the feasibility and acceptability of integrating a psychosocial stimulation intervention (FUSAM) into the therapeutic feeding programme (TFP) in Koutiala for children aged between 6 and 23 months suffering from severe acute malnutrition (SAM). In other words, we would like to evaluate the integration of a few psychosocial stimulation sessions into the normal services provided in the health centres and at the MSF hospital for the CMAM programme. With the aim of improving the services provided, we propose that parents and their children take part in this study in order to gain a better understanding of the impact of the services provided on the children's health and development and on their relationship with their primary carer.

What does it mean for me to take part?
You may be invited to take part in one of the different phases of the study: either the initial assessment, which will help us to adapt the intervention to the local context in Mali, or the implementation of the intervention itself and its evaluation. You may be invited to take part in one or both phases, depending on when you and your child are followed up at the health centre or hospital.

- *Initial assessment*

If you are asked to take part in the initial assessment, and if you agree to do so, you will be asked a few questions about yourself and your family. The questionnaire should last between 45 and 60 minutes. You will also be asked to answer a few questions about your health and your child's health and development. The interview will take place in the health centre where your child is normally cared for. It should take place during one of your visits to the health centre, or at the hospital if your child is in hospital. However, if we suggest that you come at another time for the purposes of the study, transport costs corresponding to the distance between your home and the health centre / hospital by public transport will be allocated to you to facilitate your travel.

- *Implementation of the intervention*

You may also be offered to take part in the psychosocial intervention, which will last 5 sessions of 1 hour each (spread over a month or so). If your child is being monitored at the health centre, the first session will be carried out during the second nutritional check-up and then for the following 4 sessions. If your child is in hospital, the sessions will begin during the transition phase, once the child's health has stabilised and without interfering with the care provided by the health staff, and will continue in hospital for the next session or at the health centre after discharge. You will be asked to answer a few questions about your health and your child's health and development, as well as your knowledge of certain childcare practices, and what you think (perceive) about certain childcare practices. We will also take into account some important data such as your child's birth weight and take some of your body measurements (height and weight). The questionnaire should take about 60 minutes to complete. You will be asked to answer these questions at two different times: the week before the first intervention session and then after the end of the intervention.

We will also invite you to take part in a free play session with your child. During this session, two members of the healthcare staff will observe you and your child. This will give us a better understanding of how children and their carers communicate and interact with each other.
The intervention itself will consist of 5 psychosocial stimulation sessions, including sessions on communication and play, breastfeeding and feeding practices, massage, bathing, sleep and relaxation needs, and family sharing. During these sessions, you will be invited to take part in practical exercises and share your concerns and thoughts about your child's development and care. You will be invited to ask as many questions as you like. If you are not available to attend these sessions, because someone else usually goes to the health centre / hospital with your child, you can consent to your child having subsequent study visits with someone else (who may be one of your other children for example or another carer). However, your child will not be included until you have given your formal consent.

You will also be asked to take part in an additional interview at the end of the intervention to assess its acceptability. This questionnaire will assess the extent to which you liked or disliked the intervention, what could be improved or changed, and what you got out of it. This questionnaire should take between 20 and 30 minutes. Your discussion with an interviewer will be audio recorded. This will allow us to go back over your answers and simplify the analysis process. Like all the other data in the study, the recordings will not contain any personal information and will be identified by a unique study number. They will be stored on a secure MSF/Epicentre server. After the end of the

study, like all other data, they will be transported to the MSF office in Bamako and stored securely for five years, after which they will be destroyed.

What are the potential benefits?
By participating, we hope that the information provided by you and your peers can be used to develop new services that will benefit children suffering from severe acute malnutrition in the future. Compensation will be provided if you take part in an interview (phases 1 and 3). This will include a snack for you and one for your child, as well as a protective ration (food ration). Finally, if you take part in the intervention itself, you will benefit from the advice and discussions given by a psychosocial agent, who should help you to improve your knowledge and skills in caring for your child. Finally, we will offer to take a photograph of you and your child (if you agree) during one of the sessions. No copies will be kept by the study team.

What are the possible risks?
We do not expect participation in this study to involve any physical risk, as there is no sampling or physical examination other than the body measurements mentioned above. However, asking personal questions or providing personal information may be embarrassing for some participants. You may refuse to answer any question without any consequences for your current or future treatment. Interview procedures will take place face-to-face in a private room where you can indicate that you feel comfortable answering questions; if this is not possible or you feel uncomfortable, please let us know and an alternative will be offered. You can stop the interview at any time; this will not affect your usual care. If the person collecting the data notices that you are extremely uncomfortable and that you may need support, he or she will report this to the study coordinator, who will discuss with you possible solutions to provide you with emotional support.
If the person collecting the data becomes aware of a situation that could put you or your child in a dangerous position, he or she will report it to the study coordinator, who may have to report it to the local authorities so that you or your child can receive the best possible support. In this case, there is a risk of a breach of confidentiality, as your identity may be revealed to protect you or your child.

There are also risks to participants and staff from Covid-19 infection. To minimise the risk of SARS-Cov2 transmission during the study, the team will adopt infection prevention and control (IPC) measures, such as maintaining adequate distance from participants and choosing well-ventilated or open spaces for interviews and clinical examinations, where possible. Study team members will also be provided with personal protective equipment (PPE), including medical masks, gloves and alcohol-based hand sanitizers, for use during interviews and for psychosocial intervention, in accordance with MSF's IPC protocols. If the basic IPC measures cannot be followed, a subsequent appointment or an interview in another location will be proposed.

How will my information be protected (confidentiality)?
All information collected about you and your experiences during the research will remain strictly confidential. Your child's name and contact details will be removed from any information you provide. If you agree to take part, you will be given a unique study number. All the information you provide will contain your study number, but not your name. Forms, lists, log books, appointment

books, consent form and any lists that link your study numbers to other identifying information will be kept in a separate, locked file in a restricted area.
The paper forms will be stored in a locked cabinet/secure room in the MSF office in Koutiala and the electronic data (including the audio recording) will be stored on a secure MSF/Epicentre server. After the end of the study, all data (including audio recordings) and study documents will be transported to the MSF office in Bamako and stored securely for five years before being destroyed. The computers will be password protected. Once the study is complete, you can also contact the MSF team in Bamako, Mali. You have the right to request access to your data, to receive a copy of it for another use, to correct or complete it, and to request its deletion at any time.
You are free to stop the storage of your data at any time without giving any reason, and this will not affect access to healthcare services for the present or the future. If you object, your data may only be deleted if this does not seriously compromise the achievement of the research objectives.

Do I have to take part?
It is up to you to decide whether or not to participate. If you decide to take part, you are always free to withdraw at any time without giving any reason, and this will not affect access to healthcare services now or in the future.

How will the results of the study be used?
We expect the results of this study to be disseminated within the health centre and hospital where it took place, within the MS, as well as MSF/Epicentre and ACF, and also outside the organisation at international conferences and in international journals.

Once the study is complete, the information gathered will be analysed by an independent researcher in France and the health centres and hospitals that took part in the survey will receive a summary of the results. The final report will be shared with all partners (Ministry of Health, MSF/ACF Epicentre). MSF will work with local authorities and health centres to share the results of the survey with the community. The results will also be shared and published at international conferences and in international journals.

Who can I contact if I have any questions or concerns?
You can contact us at any time on the following telephone numbers:

1. Principal investigator :

Claire BOSSARD, Epidemiologist, Epicentre at claire.bossard@epicentre.msf.org (+27 724483045)
Marc Ounténi COULDIATY, medical coordinator, MSF OCP Bamako, Mali at msff-bamako-comed@paris.msf.org (local contact) +223 78 45 97 13

2. President of CNESS, Tel: 20 23 95 62; Email: cnessnational@yahoo.fr
3. Permanent Secretary of CNESS, Tel : 20229544 / 76475136 Email : cnessnational@yahoo.fr

This protocol has been reviewed and approved by the following research ethics committee: National Ethics Committee for Health and Life Sciences (CNESS) in Mali and the MSF ERB. The study is funded by Médecins Sans Frontières.
If you have any questions that you would like to ask someone independent of the study, or if you would like to make a complaint about this study, you can contact the National Ethics Committee for Health and Life Sciences (CNESS) in Mali on the following number: (223) 20 23 95 62.

If you have any questions about data protection, please contact the MSF coordinator at msff-bamako-comed@paris.msf.org or the data protection officer at dpo@epicentre.msf.org.

Appendix 2 Informed, voluntary and free consent form for participants (accompanying persons / parents ≥18 years)

To the interviewer: Read this statement to the interviewee and obtain his/her consent before starting any assessment.

Title of study: Stimulation psychosociale en nutrition (STIMNUT), Koutiala Mali

1. I confirm that I have read and understood the information sheet dated _____ for the above-mentioned study and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and that this will in no way affect my rights.

3. I agree to my interviews being recorded in order to facilitate the analysis process.

4. I agree that the data from this study may be used in reports, presentations or other documents produced by the organisation.

5. I agree to take part in the above study

_____ _____ _____

Name of participant Date Signature or thumbprint

If I took part in the intervention, I agree to a photograph of me and my child being taken at one of the sessions.

Yes □ No □

Name and signature of the MSF team member confirming that the CONSENT form has been read and understood by the participant :

_____ _____ _____

Name of member of staff Date Signature

The aim of this interview guide is to provide guidance on the questions to ask parents/carers taking part in the study.

The general aim of these in-depth interviews is to find out about the beliefs, practices, standards, values, difficulties and any questions parents/carers *of MAS children have about caring for young children, focusing on their health, nutrition and psychosocial development.*

The guide is divided into two sections: The first section is made up of open questions designed to give parents/carers *the opportunity to express themselves and share their experiences as* parents/carers*.*

The second section will focus more specifically on socio-demographic information about the child, the mother and the family.

During the in-depth interview, it is important to be a good listener, empathetic and non-judgemental. As a reminder, the participant's well-being is most important. The first questions should put the participant at ease and establish a relationship of trust. When presenting the content of the interview, it is important to remind the participant that there is no right or wrong answer and that we are only interested in their opinion and experience. It is also important to remind them that their answers will remain confidential and anonymous, and that they are free to refuse to answer the questions and to withdraw from the study without penalty.

Before starting the interview, make sure that the person you are going to interview is comfortable and at ease, that the place is private, and then remind them of the objectives of the interview. This will enable you to continue to receive the care you or your child needs.

Example of an introduction:

Thank you for agreeing to talk to us today. As I explained earlier, we are conducting this study to gain a better understanding of the experience of parents/carers *of MAS children.*

We are very interested in your opinions, so please feel free to express yourself as much as you like. There are no "right" or "wrong" answers, and anything you say will remain confidential and will not be associated with your name in the results report. You can also refuse to answer the questions or withdraw from the study without penalty.

Note: **in bold**: main questions; *in italics: suggestions for further study;*

[In brackets]: *Clarifications for the interviewer, not to be used as probing questions.*

101	What are the first words that come to mind when you think of "caring for a child"?	Open answer	
102	Do you have anyone who has advised you on how to become a parent? Who? What did they advise you?	Open answer	
103	In your opinion, what factors help children to develop physically and mentally?	Open answer	
104	Could you describe a typical day for your child? *What does he/she do during the day? Who is he/she staying with?*	Open answer	
105	Can you describe when your child eats (*does he eat before or with the family? Same meal or different meal? Who feeds the child?)*	Open answer	
106	Does your child sometimes refuse to eat?	Yes	1
		No	2
		Don't know/can't remember	99
107	What happens if the child refuses to eat?	Open answer	

Child development and psychosocial care KAP

201	How important is interaction with children from birth?	Very important	1
		Quite important	2
		Neutral	3
		Not very important	
		important	4
		Not important	5
		I don't know.	99
202	What do you usually do to appreciate/encourage your child?	Open answer	
203	Sometimes if a child doesn't behave properly (makes a noise, knocks something over, etc.) they are scolded. Do you think this is good practice?	Open answer	
204	What do you usually do when your baby is distressed, unhappy or crying?	Open answer	

205	Can you describe when you give your child a bath? (Prop: Who gives him/her a bath? How often? Can you describe the exchanges you have with your child while you are bathing him/her?)	Open answer	
206	Sometimes it's a bit difficult for parents to talk/exchange with their babies (due to lack of time...) what do you think?	Open answer	
207	Do you think it's possible to interact with children while doing other activities such as housework?	Yes	1
		No	2
		Don't know/can't remember	99
208	Do you have time to play with your child?	Yes	1
		No	2
		Don't know/can't remember	99
209	If so, how do you play with your child?	Open answer	
210	If you have time to play with your child, how often do you do so?	Never	1
		Occasionally	2
		Regularly	3
211	Do you usually use toys to play with your child?	Never	1
		Occasionally	2
		Regularly	3
212	If you use toys, what type of toys do you use to play with your child?	Open answer	
213	Do you usually massage your child?	Never	1
		Occasionally	2
		Regularly	3
214	Do you think it's useful to massage a baby when they're ill or malnourished?	Open answer	
215	Are there specific parts of the body that you massage more often? If so, which ones? *(several choices possible)*	Belly	1
		Back	2
		Feet	3
		Head	4
		Face	5
		Hands	6

		Legs	7
		Other specify	8
216	Do you think baby massage is important?	Yes	1
		No	2
		Don't know/can't remember	99
217	Can you describe the moment when you put your child to bed?	Open answer	
218	What does your child do when he wants to sleep?	Cry	1
		Doesn't want to play/commit	2
		Pulling on the ears	3
		Finger sucking	4
		Yawn	5
		Shaking arms and legs	6
		Rubbing your eyes	7
		Other specify	8
		Don't know/can't remember	99
219	Can you describe your child's sleep routine during the day?	Open answer	
220	Can you describe your child's sleep routine?	Open answer	
221	How important is a good night's sleep for a child?	Very important	1
		Quite important	2
		Neutral	3
		Not very important	4
		Not important	5
		I don't know.	99

NUTRITION

301	Nutritional code :		|_|_|_|_|_|_|_|_|_|_|_|_|_|
302	Date of admission to the treatment programme	Day/month/year	|_|_|/|_|_|/|_|_|
303	Type of nutritional treatment		
304	When do you think a child should start breastfeeding?	Immediately (within two hours of birth)	0
		After 2 hours	1
			2

			3
		I don't know	99
305	In your opinion, how long should a baby be fed exclusively on breast milk? **Exclusively means without any other food or drink, even water.*	Days Month Don't know/can't remember	|___|___|___| |___|___| 99
306	In your opinion, when should other foods other than breast milk be introduced into the child's diet?	Days Month Don't know/can't remember	|___|___|___| |___|___| 99
307	Is your child currently breastfed?	Yes No Don't know/can't remember	1 2 99
309	When did you start breastfeeding your child (including colostrum)?	Immediately (within one hour of birth) ≥ 1 hour Never I don't know.	 0 1 2 3 99
310	What kind of breastfeeding do you do at the moment?	Exclusive (breast milk only) Breast milk + water Dominant Mixed	 1 2 3
	311 In general, do you think the duration of your baby's feedings is adequate (less / more) Open answer		
		N/A	4
312	Did you give the child any other liquid (powdered milk, for example) before 6 months?	Yes No Don't know/can't remember	1 2 99
313	What is the first food you would give or have given your child?	Open answer	
314		Yes	1

	Would you like more information on breastfeeding and complementary feeding practices?	No Don't know/can't remember	2 99
315	If so, can you tell me what else you'd like to know?	Open answer	

ID |__| |__| |__| |__| |__| |__| |__| |__| |__| |__|

Birth

401	How was your baby born (type of birth)?	Normal	1
		Instrumental with forceps/ventouse	2
		Caesarean section	3
		I don't know.	99
402	Where did you give birth to your child?	At home	1
		At the health centre/hospital/NGO	2
		TBA House	3

CHILDCARE

403	Who prepares the meals? *Several answers possible (if more than one, indicate the number in order of importance)*	Mother	_____
		Father	_____
		Parents	_____
		Grandma	_____
		Grandfather	_____
		Co-wife	_____
		Brothers and sisters	_____
		Other, please specify	_____
		I don't know.	99
404	Who is responsible for the bath? *Several answers possible (if more than one, indicate the number in order of importance)*	Mother	_____
		Father	_____
		Parents	_____
		Grandma	_____
		Grandfather	_____
		Co-wife	_____
		Brothers and sisters	_____
		Other, please specify	_____
		I don't know.	99

Write any additional information relating to the child's care at home

IDENTIFICATION

	Date of interview :	day/month/year	|_|_|/|_|_|/|_|_|
501	INTERVIEWER ID :		
502	ID. CHILD/MOTHER :		
503	Code Child/Mother :		
504	Type and name of centre	OTP centre: specify name	1
		IPD Hospital	2

CHILD

505	Gender	Woman	1
		Men	2
506	Date of birth	Day/month/year	|_|_|/|_|_|/|_|_|
507	Or if the date of birth is unknown, the age	Years	
		Month	
508	Child's BIRTH weight or perceived birth weight	Kg	|_|_|_|_|
509	Was the baby premature (born before 37 weeks)?	Yes	1
		No	2
		Don't know/can't remember	99

510 Number of children in the **family**
511 Place in the siblings of the child in question

PARENT / CARER

512	Mother Date of birth	Day/month/year	|_|_|/|_|_|/|_|_|
513	Or if the date of birth is unknown, the age	Years	
		Month	
514	Mother's status :	Married to	1
		Simple	2
		Lives with his family	3
		Co-wife	4
		Don't know/can't remember	99
515	Who looks after the children at home?	One person	1
		More than one person	2
516	Who is the main carer at home? (Who is the main carer for the child?) *If more than one person, indicate the number in order of importance*	Mother	____
		Father	____
		Grandma	____
		Grandfather	____
		Brothers and sisters	____
		Co-wife	____

SOCIAL AND ECONOMIC STATUS

517	Mother's level of education	Illiterate	1
		Primary	2
		Secondary	3
			4
518	Father's level of education	Illiterate	1
		Primary	2
		Secondary	3
			4
519	What income-generating activities does the household engage in?	Agriculture / livestock	1
		Other source of income	2
		Self-employed or business owner	3
		Salaried employment	4
		Day labourer (no fixed income)	5
		Sending funds	6
		Retailer	7
520	Does the mother work?	Yes	1
		No	2
		Don't know / NA	99
521	If yes, specify where	Same village	1
		Another village	2
		This district	3
		Other district	4
		Other countries	5
		Other (please specify)	6
522	Does the father work?	Yes	1
		No	2
		Don't know / NA	99
523	Who decides on the child's food/healthcare expenses?	Father	1
		Mother	2
		Co-wife	3
		Other (please specify)	4
524	At mealtimes, how many children (<5 years old?) eat from the same plate?	Number of children under 5	|_|_|
525	Sometimes children your child's age have access to food, sometimes it's more complicated. How will you assess your child's access to food at mealtimes?	Very good	1
		Good	2
		Medium	3
		Difficult	4
		Very difficult	5
		Number of people ≥ 15	|_|_|

	526 Agricultural production unit	Number of children aged >5 and <15	|_|_|
VULNERABILITY STATUS (to be looked up in the MEDICAL RECORDS - or following discussion with the mother)			
527	Vulnerability factors (CHILDREN)	Malnourished child	1
		Early pregnancy	2
		Children orphaned by a single parent	3
		Child orphaned by 2 parents	4
		Children in foster care	5
		Disabled children	6
		Victim of violence	7
		Mother or father missing/deceased	9
528	Vulnerability factors (MERE)	Seriously ill adults	1
		Adults with disabilities	2
		Pregnant woman	3
		Separated or divorced (spouse)	4
		Widowed	5
		Nursing mothers	6
		Victim of violence	7
		General psychological distress	8
		Refugee	9
		Registered	10
		Moved	11
		Marginalised community	12

STIMNUT interview guide phase 1 :

Individual interviews - Key informants

The purpose of this interview guide is to provide guidance on the questions to ask key informants participating in the study. These questions should be adapted to the position, circumstances and characteristics of the interviewees.

The overall objective of the semi-structured interviews with key informants in the Koutiala community is to learn about community practices, norms and values regarding the care of young children within families, focusing on their health, nutrition and psychosocial development, and to describe some of the barriers and facilitators to child care. Key informants have first-hand knowledge of the community and can provide information on the issue of interest and their perspectives on possible solutions. The guide is divided into three sections: The first section will explore the respondent's status and role in the community, their views on health and social issues affecting the community and young children in particular. The second section will focus more specifically on community practices, customs, processes and norms concerning nutrition and psychosocial stimulation of young children. The third section is devoted to the recommendations made by the people interviewed.

During the in-depth interview, it is important to be a good listener, empathetic and non-judgemental. As a reminder, the participant's well-being is most important. The first questions should put the participant at ease and establish a relationship of trust. When presenting the content of the interview, it is important to remind the participant that their answers will remain confidential and anonymous in the reports, and that they are free to refuse to answer the questions and to withdraw from the study without penalty.

Before starting the interview, make sure that the person you are going to interview is comfortable and at ease, that the location is private, and then remind them of the objectives of the interview.

Example of an introduction :

Thank you for agreeing to talk to us today. As I explained earlier, we are conducting this study to understand the factors that affect the health of young children, in particular their nutritional status and psychosocial development. When we say young children, we mean children aged between 6 and 23 months. We want to know how members of your community look after their children on these issues, what challenges they face and what helps them. We have invited you to this interview because, as a (Insert position or title of key informant), your views and perceptions can help us to understand the factors that affect the health and growth of young children. We would also be very grateful if you could give us ideas and suggestions on how MSF can adapt its programmes to support young children and their carers more effectively. I would like to make it clear that we are not working for the local health services. MSF has asked us to conduct this research independently. We are very interested in your opinions, so please feel free to express yourself as much as you like. There are no "right" or "wrong" answers, and anything you tell me will remain confidential and will not be associated with your name in the results report. You can also refuse to answer the questions or withdraw from the study without penalty.

START RECORDING

Note: **in bold**: Main questions; *in italics: Suggestions for probing;* [In brackets]: *Clarifications for the interviewer, not to be used as probing questions.*

A. Role in the community and description of the community

1. **Can you tell me a bit about yourself and what your role is? What do you do for the community?**
   - *How long have you lived in this community?*
   - *What are your responsibilities?*
   - *What are your main activities with young children (6-23 months) and their carers?*

2. **Can you tell me about your community?**
   - *What are the positive aspects of life in your community?*
   - *What are the negative aspects of life in your community?*
   - *What problems or challenges are affecting your community?*
   - *What specific problems affect young children in your community?*

3. **Can you tell me what care practices exist in your community for adults, children and especially young children?**
   - *Which people or structures provide care services in your community? Which ones provide services for young children or are intended for them?*
   - *What do people do when they are ill or have health problems? Who do they consult?*
   - *What do people do when their children are ill or have health problems? Who do they consult? Who makes the decision to take the child to the doctor?*
   - *In general, what do community members think of the health services available in the community?*
   - *And more specifically, what do they think of the health services available for children?*

B. Childcare, health, nutrition and the psychosocial development of children

4. **What does a childminder usually do? Are there any specific tasks involved in looking after children under the age of 2?**
   - *What are the main practices/activities?*
   - *Who is/are the main carer(s)? If a parent, what is the role of the other parent? Who else is involved?*

- *Who makes decisions about childcare practices/activities? Who decides why?*
- *What is considered good childcare practice/activity in your community? Why or why not?*

Examples:
1; Nutrition/food: How/ how often are young children fed? by whom? How are children fed (breast-fed, exclusively or mixed)? Who decides what the child is fed? Who provides/purchases the food? Who cooks the food (if necessary)?
2. Bathing: How/ how often are young children bathed? Who bathes them? Who decides when they are bathed?
3. Sleep/nap: When/how are children put to sleep? Who puts them to sleep? Who decides when children go to sleep?
4. Leisure activities/entertainment/games: When/how do children entertain themselves/play? With or by whom? Who decides when children play/entertain themselves? Are toys used? Which toys?
5. Are other practices/activities carried out with the child? When/how, by whom? Who decides? Why these practices/activities?

5. ***What is the community's perception of psychosocial stimulation for the development of young children under the age of 2?***
   - *Do they think it's important? Why or why not?*
   - *If psychosocial stimulation is important, what activities or practices are used?*

6. ***What constraints might a carer face when looking after a young child?***

C. <u>Comments and recommendations</u>

7. **Do you think it is possible to help and encourage carers/parents facing these difficulties? How could this be done? Do you have any recommendations for improving the situation of carers/parents in health centres?**

8. **Our interview is drawing to a close. Do you have any comments or questions on the subjects we've covered?**

Before concluding the interview, summarise the main issues discussed and clarify any outstanding questions raised during the interview or any apparent contradictions.

Thank the participant for their time and participation and end the interview.

Appendix 5 Tool 3 Discussion group guide for carers/parents of non-malnourished children - Initial situation report

STIMNUT interview guide Phase 1 :

Discussion group for carers / parents of non-malnourished children

The aim of this interview guide is to provide guidance on the questions to ask carers of non-malnourished children participating in the focus group discussion. These questions should be adapted to the position, circumstances and characteristics of the interviewees.

The general aim of group discussions with carers of non-malnourished children is to learn about community practices, norms and protective values in relation to the care of young children within families and to identify key factors that can have a positive effect on the health, nutrition and psychosocial development of young children. Parents of non-malnourished children may have practices, approaches or strategies that can inform the care provided to children suffering from severe malnutrition or at risk of severe malnutrition. This guide is divided into three parts: The first section will aim to briefly describe the participants' general perceptions of childcare, organisation and support, the second section will focus more specifically on their care practices and processes relating to the health, nutrition and psychosocial stimulation of young children. The third section will focus on respondents' comments and recommendations regarding childcare activities.

During the discussion group, your role will be to moderate and facilitate, not to lead the discussion. You should also have an observer to take notes on non-verbal communication. Above all, you must ensure that all the topics of interest are explored, and only intervene to ask for clarification, to challenge participants who are not speaking and to respect time. As always, it's important to be a good listener, empathetic and non-judgemental. By listening carefully and making eye contact, participants understand that their contribution is valuable, which encourages them to share even more. As a reminder, the well-being of the participants is most important. Initial questions should help to put participants at ease and establish a relationship of trust and comfort within the group. When introducing the discussion, it is important to remind participants that their answers will remain confidential and anonymous in the reports, and that they are free to refuse to answer the questions and to withdraw from the study without penalty.

Before starting the interview, make sure that the members of the group are comfortable and that the place is private, then remind them of the objectives of the discussion.

Example of an introduction :

Thank you for agreeing to take part in this panel discussion and for giving us your time. As you know, we are currently working to improve the services we support for severely malnourished young children aged between 6 and 23 months and their carers. We want to find out more about how carers and parents in the community, like you, care for and nurture their young children, particularly in relation to issues of health, nutrition and mental stimulation. We invited you to this interview because, as parents and carers *of young children who are not malnourished, your perceptions and experiences can help us to understand which practices and activities can have a positive effect on the health and growth of young children. We would also very much appreciate your ideas and suggestions about the kind of support parents and carers may need, and how MSF can adapt its programmes to support young children and carers more effectively.*

We hope that in our discussion today you will all be able to share and compare your experiences and perceptions of caring for young children. We have a few specific topics to cover and questions to ask, but we hope that these will help to initiate and stimulate a free and open discussion. We have an hour and a half discussion planned and as we have several topics to cover, I may move on to the next question from time to time, but please feel free to stop me if you want to add or ask something.

We're going to record our discussion because we want to make sure we don't forget any comments. However, I would like to assure you that all your comments are confidential and

will only be used for our research purposes. The recording will not be broadcast outside our team and, in subsequent reports, nothing you say will be associated with your name. In addition, there are a few basic rules that we must follow:

- *We're very keen to get everyone involved, because we value your input and we'd like to hear your honest and open thoughts. So I may call on you if I haven't heard back, or I may suggest that we move to a round-table format so that everyone has a chance to have their say.*
- *As we will be recording the group, and out of respect for others, we ask that only one person speaks at a time. You can raise your hand or wave to us, the moderators, when you wish to intervene in the discussion.*
- *There are no right or wrong answers, and we value all contributions equally, so please feel free to have your say, whether you agree or disagree. It's actually useful to hear different points of view. You're also encouraged to ask any questions you like as we go along, either to me or to the other members of our discussion.*

I would like to make it clear that we are not working for the local health services. MSF has asked us to carry out this research independently. We are very interested in what you would like to share with us, you can speak freely. You can also refuse to answer questions or withdraw from the study without penalty.

If you have any questions or concerns, we'll answer them and then proceed with the group discussion.

START RECORDING

Note: **in bold**: Main questions; *in italics: Suggestions for probing;* [In brackets]: *Clarifications for the interviewer, not to be used as probing questions.*

B. General perceptions and organisation of care for young children

1. **What are the first words that come to mind when you think of "caring for a child"?**
2. **Can you tell me how you look after children in your community**?
    - *Who looks after the children? Who is/are the main carer(s)? If one parent, what is the role of the other parent? Who else is involved? What other support is available?*
    - *Who makes decisions about childcare practices/activities? How do they do it? Why are decisions made?*
    - *What problems/factors prevent you from caring for your child?*
3. **What are the challenges and difficulties involved in looking after a young child? How can these difficulties be overcome?**

D. <u>Practices and processes concerning the health, nutrition and psychosocial development of young children</u>

4. What do the carers in your family space usually do when a child is ill or has a health problem?

- *Who do they consult first (traditional therapist or health service)?*
- *When do they consult? Where do they go?*
- *What is the general opinion of the healthcare services available for children?*

5. What do young children usually eat in your family environment? And what happens when they refuse to eat?

- *How/ how often do young children eat?*
- *Who feeds the child?*
- *Who decides what the child eats?*
- *Who supplies/delivers the food? Who cooks the food (if applicable)?*
- *<u>Is the child offered another meal if he or she refuses to eat?</u>*
- *<u>Do parents want to know the reasons for refusal?</u>*
- *<u>Is the child taken to the health centre or to traditional therapists or religious leaders when he refuses to eat?</u>*

6. What are the bathing habits of the young children in your family?

- *How/where/frequently are young children bathed? Who bathes them*?
- *Who decides when to bathe?*

- **What are the sleeping habits of the young children in your family?** *When/how are children put to bed?*
- *Who decides? Who decides when the child sleeps?*
- *How long does the child sleep?*
- *What happens if a child refuses to sleep?*

7. What kind of activities does a young child do in your family environment?

- *How does your child play/entertain themselves?*
- *When/how do children entertain themselves/play? Where with whom?*
- *Who decides when children should play/entertain themselves?*

- *Are the toys being used? Which toys?*

8. **What does the child's carer usually do in the following situations?**
   - **The child is distressed, agitated and upset.**
   - **The child has done something good and is looking for praise.**
   - **The child misbehaves or disobeys.**

9. **Are there any activities to do with the children? What activities? Why do you do these activities with them?**

10. **What do you consider to be good practice/activities for children's well-being?**

    Why or why not?

E. <u>Comments and recommendations</u>

11. **What are your recommendations and advice on caring for young children?**
    a. *Other parents/carers*
    b. *Nutritional programmes and services*
12. **Our discussion is coming to an end. Do you have any other comments or questions on the subjects we've covered?**

Before concluding the group, the observer can summarise the main points that were discussed and clarify any outstanding issues that were raised during the interview or any apparent contradictions.

Thank the participants for their time and participation and end the interview.

Appendix 6 Ethical authorisations

MINISTERE DE LA SANTE ET
DU DEVELOPPEMENT SOCIAL

REPUBLIQUE DU MALI
UN PEUPLE-UN BUT-UNE FOI

COMITE NATIONAL D'ETHIQUE POUR LA SANTE ET LES SCIENCES DE LA VIE (CNESS)
Sis à Djikoroni-Para face au Boulevard Mohamed VI
Contigu au CHU-Hôpital de Dermatologie de Bamako
(ex CNAM/Institut Marchoux).
Tél. : 20 23 95 62 / BPE : 5241 Bamako-Mali
Email : cenessnational@yahoo.fr/ presidenteness@gmail.com

N°2022 097 /MSDS-CNESS

Bamako, le 13 JUIL 2022

Le Président du Comité National d'Ethique pour la Santé et les Sciences de la Vie

A

Madame Claire Bossard
Investigateur Principal

du protocole de recherche intitulé «Adaptation contextuelle et évaluation de la faisabilité et de l'acceptabilité d'une intervention de stimulation psychosociale en nutrition pour les enfants atteints de malnutrition aiguë sévère à Koutiala, Mali (STIMNUT)».

Le Comité National d'Ethique pour la Santé et les Sciences de la vie ayant étudié votre protocole version 3 du 05/07/2022 vous donne son approbation pour la mise en œuvre dudit Protocole après observation des procédures administratives. La mise en œuvre de l'étude ne pourra démarrer qu'après l'obtention d'une autorisation dûment signée par une autorité administrative.

Nous avons apprécié les corrections dont votre protocole a fait l'objet après un premier passage devant le Comité National d'Ethique pour la Santé et les Sciences de la vie (CNESS).

Nous insistons sur le fait que vous devez nous avertir de tout évènement indésirable survenant au cours de l'étude et lié à l'étude dans les sept (7) jours ouvrables.
Nous insistons également sur l'élaboration de la fiche de consentement éclairé, libre et volontaire de chaque participant et de la renouveler à chacune des étapes.

La protection et la confidentialité doivent être respectées en toute rigueur.

Nous vous rappelons que le CNESS peut venir contrôler l'exécution de vos travaux sur le terrain à tout moment.

Le CNESS exige de votre part un rapport annuel décrivant l'évolution de vos travaux et un rapport final avant toute publication dans des revues. En cas de restitution publique, le CNESS demande à être présent en même temps que les autorités concernées.

Madame l'Investigatrice principale, nous vous souhaitons succès dans votre recherche et nous vous présentons nos salutations distinguées.

Professeur Sambou SOUMARE
Officier de l'ordre du Mérite de la Santé

MINISTERE DE LA SANTE • Le Président •

Dr Claire Rieux
Medical Director
Médecins Sans Frontières
14-34 Avenue Jean Jaurès
75019 Paris, France

Cc : Mathieu Bichet, Klaudia Porten

25 March 2022.

Re: Ethics approval of "Psychosocial Stimulation in Nutrition (STIMNUT) - Contextual adaptation and feasibility and acceptability assessment of a psychosocial stimulation in nutrition for children with severe acute malnutrition in Koutiala (STIMNUT), Mali", version 2 dated in March 2022 (ID:2201).

Dear Dr Rieux,

Thank you for your reply to our review of the above-mentioned protocol. We are happy with the answers of the investigators and thus, approve the protocol. Please ensure that all people associated with the research receive a copy of the final, approved protocol.

Please note that:
- If the study is not started within the next twelve months, this approval will not be valid anymore, and you should submit a Request for Amendment (with the new schedule and the rationale for the delay);

- Any planned substantial revisions/changes to the protocol must be submitted to the Ethics Review Board through a Request for Amendment, for further review and approval;

- Any occurrences during the research that may affect its ethical acceptability, such as serious adverse events or other unforeseen events, must be reported to the Ethics Review Board;

- Once the study is completed or if it is stopped prematurely, the Ethics Review Board should be notified with an End of Study Notification. Please also send us copies of the final research report and any related publications.

- Please note that some research studies involving human participants should be registered in one of the WHO-accepted primary registers (https://www.who.int/ictrp/network/primary/en/). It is the researchers' responsibility to check when this is the case. We recommend that researchers check if individual studies need to be registered.

This approval is contingent upon approvals of the protocol by all necessary local ethics committees/institutional review boards and, when applicable, national regulatory authorities.

Please send us in due time a copy of the ethics approval of the National Ethics Committee for Health and Life Sciences (CNESS) in Mali.

With best regards

For the ERB,

Raffaella Ravinetto
Chairperson, Ethics Review Board

Appendix 7 Socio-demographic description of the study population (n=18, carers of MAS children)

Variable	Terms and conditions	n	%
Study site	hospital	8	44
	OTP	10	56
Type of nut treatment	URENI phase 1	2	11
	URENI transition	6	33
	URENAS phase 2	10	56
Duration of treatment, median days [IQR] (min, max)	11.5 [4-24] (min: 3, max: 41)		
Child sex	Girl	9	50
	Boy	9	50
Child age	Median at 1 [IQR 0.6-1.1], min age: 6 months, max age: 18 months)		
Prematurity	yes	13	72
	no	5	28
Mother's age	19-24 years old	6	33
	25-30	9	50
	> 31	1	6
	DCD	1	6
	dnk	1	6
Mother's status	Married to	17	94
	Lives with his family	1	6
Mother's level of education	Illiterate	14	78
	Primary	4	22
	Secondary	0	
Does the mother work?	Yes	7	39
	No	11	61
Father's level of education	Illiterate	12	67
	Primary	2	11
	Secondary	4	22
Does the father work?	Yes	14	78
	No	4	22
What income-generating activities does the household engage in?	Agriculture / livestock	12	67
	Other source of income	1	6
	Day labourer (no fixed income)	1	6
	Retailer	4	22
Number of children in the family, median [IQR] (min, max)	8.5 [4, 11] (min: 1, max: 25)		

Breastfeeding and infant nutrition

304	When do you think a child should start breastfeeding?	AA	Immediately (within two hours of birth)	13
			After 2 hours	3
			dnk	2
			3 months	1
305	In your opinion, for how long should a child be fed exclusively on breast milk?*exclusively means without any other food or drink, even water.	AA	5 to 6 months	1
			6 months	6
			10 months or more	4
			Don't know/can't remember	4
			0	1
306	In your opinion, when should other foods other than breast milk be introduced into the child's diet?	AA	2	4
			3	12
			12	1
307	Is your child currently breastfed?	AA	Yes	15
			No	3
309	When did you start breastfeeding your child (including colostrum)?	AA	Immediately (within one hour of birth)	12
			≥ 1 hour	3
			dnk	3
310	What kind of breastfeeding do you do at the moment?	AA	Exclusive (breast milk only)	2
			Breast milk + water	2
			Dominant	
			Mixed	11
312	Did you give the child any other liquid (powdered milk, for example) before 6 months?	AA	Yes	11
			No	7
			Don't know/can't remember	

314	Would you like more information on breastfeeding and complementary feeding practices?	AA	Yes	16
			No	1
			Don't know/can't remember	1
403	Who prepares the meals? Several answers possible (if more than one, indicate the number in order of importance)	AA	Mother	15
			Father	3
			Parents	0
			Grandma	1
			Grandfather	1
			Co-wife	6
			Brothers and sisters	3
			Other, please specify	0
			I don't know.	0
Psychosocial care				
404	Who is responsible for the bath? Several answers possible (if more than one, indicate the number in order of importance)	PSY / bath	Mother	15
			Father	1
			Parents	0
			Grandma	6
			Grandfather	0
			Co-wife	1
			Brothers and sisters	2
201	How important is interaction with children from birth?	PSY / interraction	Very important	16
			Quite important	1
			Neutral	0
			Not very important important	0
			Not important	1
207	Do you think it's possible to interact with children while doing other activities such as housework?	PSY / interraction	yes	10
			no	8
208	Do you have time to play with your child?	PSY / play	yes	15
			no	3
210	If you have time to play with your child, how often do you do so?	PSY / play	Occasionally	7

211	Do you usually use toys to play with your child?	PSY / play	Regularly	8
			Never	0
			Occasionally	6
			Regularly	9
213	Do you usually massage your child?	PSY / massage	Never	1
			Occasionally	10
			Regularly	7
215	Are there specific parts of the body that you massage more often? If so, which ones? (several choices possible)	PSY / massage	Belly	10
			Back	16
			Feet	13
			Head	9
			Face	8
			Hands	13
			Legs	13
216	Do you think baby massage is important?	PSY / massage	yes	18
			no	0
218	What does your child do when he wants to sleep?	PSY / sleep	Cry	16
			Doesn't want to play/commit	1
			Pulling on the ears	0
			Finger sucking	0
			Yawn	12
			Shaking arms and legs	1
			Rubbing your eyes	3
			Don't know/can't remember	
221	How important is a good night's sleep for a child?	PSY / sleep	Very important	18
			Quite important	0
			Neutral	0
			Not very important	0
			Not important	0
			I don't know.	0

Other domestic health practices

515	Who looks after the children at home?	PRA	One person	3
			More than one person	14
516	Who is the main carer at home? (Who mainly looks after the child?)*If more than one person, indicate the number in order of importance	PRA	Mother	12
			Father	8
			Grandma	7
			Grandfather	0
			Brothers and sisters	1
			Co-wife	4
523	Who decides on the child's food/healthcare expenses?	PRA	Father	17
			Mother	3
			Co-wife	0
			dnk	1
524	At mealtimes, how many children (<5 years old?) eat from the same plate?	AA	Number of children under 5 (median)	4.3 [2, 6] max 15
525	Sometimes children your child's age have access to food, sometimes it's more complicated. How will you assess your child's access to food at mealtimes?	AA	Very good	9
			Good	4
			Medium	3
			Difficult	1
			Very difficult	1
106	Does your child sometimes refuse to eat? (1 dk)	AA	yes	14
			no	3

Colour legend associated with the table :

AA	Breastfeeding and infant nutrition
PSY	Psychosocial care
PRA	Domestic health practices

Appendix 9 Thematic analysis tables (key informant interviews)

A look at the community

The following table presents the results of the content analysis of 13 key informant interviews. More specifically, the table contains the representations of the community and the socio-cultural tensions identified. Their specific features are described and illustrated on the basis of various verbatims (the Occurrences (Occ.) column refers to all the interviews in which the sub-theme is present).

Table 5 - Thematic analysis tables (key informant interviews)

Theme	Sub-theme	Description	Occ.	Verbatim
Community representation	*A hard-working, supportive community*	The potential for exploitation (in terms of agriculture) and the tendency to act collectively are highlighted.	2 healthcare workers ; 3 NGO agents ; Local authority ;	*"Generally speaking these communities are receptive, they adapt to change, even if it's not easy, they are mobilisable."* (International NGO officer) *"A stable, hard-working community with the resources we need" (Humanitarian project officer)* *"The positive aspects are the solidarity, the community pulls together if there's a problem"* (International humanitarian project officer). "It's a community based on mutual aid, people are very supportive here" (Local authority) *"Our main activity here is farming, and during the dry season we grow vegetables"* (Traditional birth attendant).
	Research and access to healthcare: an ambivalent issue	Developments in terms of seeking and accessing care in the event of illness are fading in the face of the fact that some families are staying away from health centres, described as "*refractory*".	NGO agent ; 2 healthcare workers	*"Even in cases of malnutrition, children were left to fend for themselves by their heads of household, either through ignorance or lack of resources. Lately we've been seeing more and more of them coming to the health centres" (Local NGO officer).* *"Among the community there are always refractors. They only come to the community health centers when they are seriously ill. In the same way, some pregnant women only come when they're ill" (Nurse).*

				"One difficulty is that some women don't bring their children to the malnutrition screening with MSF. This can have serious consequences, including death. There are always people who are reluctant". (Traditional birth attendant)
Socio-cultural tensions that affect children's development	*Insecurity*	The rise of attack groups is affecting families in the community.	ngo agent	*"We're hearing about the movements of groups and attacks in the neighbouring region that are spreading to our region. This is worrying.* (NGO worker)
	Traditional lifestyles	Certain local practices and beliefs are in contradiction with children's rights and care (e.g. child marriage)	2 NGO agents	*"These communities are often traditionalist. In terms of protection, we face challenges, especially when it comes to children's rights. There is also the weight of habits and customs, there are certain practices that are not really to be encouraged. (International NGO officer)* *"For example, if we prepare soup, it's the elderly who eat it and we think that if we give it to the child, he'll be spoilt. We need to leave the old practices behind to help the children develop better. (International humanitarian project officer)*
	Large families	The number of children is seen as a constraint on the quality of childcare	Humanitarian project officer; Local authority; Health worker	*"In many places, the wife or husband doesn't look after the child properly, because we have a lot of children. (Humanitarian project officer)* *The children suffer from malnutrition because the mothers do not take care of them. The women who come with the children are usually pregnant because they don't practise family planning. The men don't help them either (community worker).*
	Eating local food	Contrast between local food production and consumption.	Healthcare worker ; 2 NGO agents ; Local authority	*"Women produce a lot of vegetables but their consumption remains low. This is either due to ignorance or greed". (Nurse)* *"I've noticed that what they produce, like in Sikasso, because I've been there for two years, they don't consume it. They don't consume that, and conservation isn't done very well either, because of what they produce and they don't conserve the produce very well. (International NGO officer)*

				"It's hard to believe that we are malnourished, which means that what we produce we don't consume. And what we consume, we don't know how to use. Otherwise we have everything here to avoid malnutrition" (Local authority)

A cross-section of care practices and constraints

The table below presents the results of the content analysis of 13 key informant interviews. More specifically, each column presents the different themes relating to the care practices we identified, as well as the constraints on childcare mentioned by the participants.

Types of care practices	*A healthy, balanced diet*	A healthy, balanced diet is emphasised by almost all participants. *Only one participant also mentioned the importance of a balanced diet since pregnancy (Local Authority).	4 health workers, 5 NGO workers, local authority 2 traditional therapists	*"Good practice is proper nutrition..." (Nurse)* (Nurse) *"A good practice is to give the baby rich food as well as the breast*". (Traditional birth attendant)
	The quality of breastfeeding	The quality of breastfeeding is mentioned, but little is said about it	3 health workers, 2 local authorities	*"Adopt the ideal breastfeeding position. When breastfeeding the baby, the mother should look at him and talk to him. At the moment he's happy (laughs)" (Traditional midwife)*
	Ensuring children's hygiene	Pro-hygiene behaviours were mentioned in almost all the interviews.	4 health workers, 3 NGO workers, 2 traditional therapists	*"Baths (nurse)* *"Hand washing (international NGO worker)* *"Wash him, clean him if he has faeces" (humanitarian project officer)*

	The game	*In a single interview, the need to maintain an emotional relationship with the child (traditional birth attendant).	1 NGO officer, 3 health workers	*. "... coax him, play with him. If he cries, we breastfeed him by pressing his body against yours, which develops affection between the child and his mother" (traditional midwife).*
	Ensuring your child sleeps well	Children's sleep is sometimes mentioned as a type of care practice, but is not developed.	2 healthcare workers	"Sleep" (community agent)
	Adopting preventive behaviour	These are behaviours that look after the child's health in medical terms	NGO officer; Health worker ; Local NGO agent	*"Vaccination" (traditional birth attendant); "use of mosquito nets" (international NGO worker).* *"We need to monitor the child's hearing and reactions to the way he walks, eats and talks, so that we can detect abnormalities early and take action before things get complicated". (Local NGO officer)*
	Signs of good health/illness	The identification of the child's illness and/or malaise is achieved by observing the child's play and mood.	Health workers, NGO worker, Traditional healer	*If the child is well, he eats well and sleeps well. But a child with a health problem, especially malnutrition, just cries and is in a bad mood all the time. (Nurse)* *If you see that a child is clean, it means they've eaten well too. It's difficult to meet a child of two who hasn't walked. If the child is still clean, tell yourself that he's eaten well.* *"If you see that the child is no longer playing, you must try to find out why. If you notice any abnormalities, you have to try to treat them so that they can continue to play as usual. (Traditional therapist, male)* *"If children play, they are happy. If they're happy, their parents are happy too. But if they're sick, their parents aren't happy. So it's very important. (Traditional midwife)*

				"If the child is healthy, the whole family is happy. But if it's sick, we're all sad. (Traditional birth attendant)
Constraints	*Overworked women*	The low level of childcare is linked to women being overburdened. Others explicitly link overweight women to malnutrition.	Health worker; 4 NGO workers ;	*"If you're a mother, the first constraint is time. In our communities, women are so overloaded that they don't have the time to look after their children properly, even if they want to". (NGO worker)* *"When we talk about malnutrition, when we talk about exclusive breastfeeding, it's the time that the woman has to devote to breastfeeding her child that she doesn't allow. Especially when she's working and the child is crying, and she comes to sit down, she gives the child the breast, if while suckling the child leaves the breast for a bit to have fun and come back, for the woman it's sated, that's it, or she comes to give it water and continues her work. I think it's the suckling and eating periods that are the cause of this affection". (Humanitarian project worker)* *"The women are so busy that they don't have time to look after the children. (Local NGO worker)* *"The woman has too much work to do, she has to go out to the fields, she has to fetch firewood, she has to prepare. She doesn't have much time to rest. But the man has time to rest. He can take advantage of his time off to look after the child. (International humanitarian project officer)* *"The big problem is that women work too much in the fields and very often don't have time to look after their children. After the field they are busy with housework until late at night, which is difficult to rectify. This is difficult to rectify". (Traditional midwife)*

	Neglect of carers	For example, a traditional therapist and a community health worker mentioned the lack of attention to children's safety (e.g. burns, injuries, etc.) as a constraint.	Traditional therapists, NGO workers; Health workers	*Some women don't look after the child, others hit it, that's not normal. Children need to be well looked after, they need to be tamed (traditional midwife).* *Parents also fail to look after their children. They are left to their own devices. Children can go out into the street without their parents knowing. Accidents, illnesses and many other things can happen there. So I think that's one of the big problems for children. Lack of follow-up for parents. (Traditional therapist, male)* *Now the women only see the health centre. You can get all the medicines you need from plants. The big problem with women now is that they don't take care of their children. That's their problem. (Traditional therapist, woman)* *Some children tell us in the street that "your medicine is bitter, I didn't take it". They don't protect children against mosquitoes. (Community relay)* *They are left to fend for themselves. You often meet children in the street and wonder whether they are even parents. For example, you don't know if the child has eaten properly or not, or if they've slept under a mosquito net or not.*
	Lack of resources	The participants point to the lack of financial resources as a constraint on childcare. Only one participant raised the issue of the lack of food products, particularly during the	2 NGO workers; Health worker; Local authority	*"Resources can also be a constraint. If a child falls ill and there's no money for prescriptions, especially for women, the decision comes from elsewhere. Even for free healthcare, it's often difficult for women to get their children access. (International NGO worker)* *The other constraint is that you may also be limited financially in this context. You may have the will to do it, but even if it's*

		rainy season (Community agent).		*minimal, you have to put in place the means to gather the necessary resources. And that too is a constraint. (Local NGO officer)*
	Difficulty getting to health centres	For people living in certain areas, access to health centres may be limited by transport links.	2 NGO agents	*"In terms of distance, if we take the Ngoutjina health area, which covers the non-functional Kapala, the distance between these two villages is between 07 and 10 kilometres. This means that people have to go to the nearest CHW site or health centre. As a result, the CHW site tends to become a community health centers ".* (NGO officer)
	Taboo foods	Certain foods with nutritional qualities for children are prohibited	2 NGO agents	*"The consumption of milk and dairy products at a certain age is often prohibited in some communities, as are eggs"* (International NGO officer). *"For example, it may be said that a child should not eat meat at night, drink milk or eat eggs in winter to avoid catching malaria. And we now know that this is not true. (International humanitarian project officer)*
	Lack of knowledge	The lack of care provided to children is associated with a lack of knowledge. In some cases, lack of knowledge is seen as a cause of malnutrition (NGO workers, local authority, health worker).	3 NGO agents, health worker, traditional therapist,	*The major constraint here is ignorance. I myself give my wife a lot of advice about looking after the children. Often the child falls ill without her knowledge. People don't attach any importance to looking after their children. (Community Relais)* *"We can do this because we don't know anything about it, that's a constraint". (Local NGO officer)* *"Lack of knowledge too, because there are practices that people don't know about; if you don't know about something, you can't do it".* (International NGO worker)

				"Women don't know how to prepare meals..." (Local NGO worker) "Children are not trained at school in the fight against malnutrition" (Local NGO worker) *The difficulties include ignorance and poverty (Nurse)* *The difficulty is ignorance, there's also poverty (Relais communautaire)* *"There are cases of lack of knowledge, not that they are reticent but they don't know, many people don't know that it's a fact of society. Because it's a subject that wasn't topical and wasn't known". (Local NGO officer)* *In some families, the children eat the same meal as the adults. That's what's forbidden, the child will have a big belly but there's hardly anything nutritious. (Local authority)*
Caring for children: gendered roles	*Childcare, a woman's business*	In all the interviews, the mother was considered to be the main carer for the child. However, she is also supported by other women: grandmothers, older sisters, nannies.	All interviews.	*It's the wife who takes care of the bath. As long as she's at home, she does it. Even if the mother isn't at home, it's the grandmother or older sister who does the bathing. Otherwise, especially among the Minianka, the man doesn't wash the child. (International humanitarian project officer)*

	In the event of illness, the power to decide on treatment lies with the human being	The man (head of the concession) is responsible for family members in the event of illness and for household expenses. Most of these men are fathers and husbands, and their role is to decide what type of care should be given to a sick child.	All interviews.	*"Sometimes they [the mothers] come and tell us that despite my wishes, such and such a person hasn't accepted." (International NGO officer)* *"Often, even if a child falls ill, the husband is slow to take the decision to take the child to the health centre, as the wife does not have the means, and even if she does have the means, she cannot take the decision to take the child to the health centre" (Humanitarian project officer).* *If the woman dares to do something because you have money, the day you don't have money, we'll say that the last time, it was you who left without our permission, as you're a haughty woman, you have to deal with it now. (Humanitarian project officer)* *"Everything is linked to man"* (international humanitarian project officer) *Negative aspects: men do not often allow women to come to the health centre for nutrition activities. (Local authority)* *"Women have travel problems and the problem of support from their husbands. But we are in the process of raising awareness among the men". (Local authority)*

Results of the verbal association "taking care of the child" (focus groups)

The table below shows the words that focus group participants associated with the term "*taking care of the child*".

FG35	FG36	FG37	FG38	FG39
Power supply	Power supply	Child maintenance	Child maintenance	Hygiene
Clothing	Maintenance	Be brave when dressing your child	Power supply	Health
Protection	Keeping the child	Search for birth certificate	Exclusive breastfeeding up to 6 months	*If the child is healthy, the mother is happy and the child is happy too.*
Schooling the child	Hygiene (avoid dirt)	Paying attention to the child's state of health	Giving oranges or bananas after breastfeeding	Washing the child if he cries
Health	Giving healthy food	Hygiene (avoid dirt, make sure the child is clean)	Giving porridge enriched with milk	If the child is potty-trained and **hungry**, he or she is given something to eat
	Give water	Coaxing the child	*After giving birth (...) I give decoctions of 'zondjè' (Leptadenia hastata).*	
		Recovering a child's joy if they are unhappy	Washing the child	
		The father's demonstration of love for his child	*"I give him decoctions of Zondjè (Leptadenia hastata) and Gnaman (Piliostigma reticulatum).* [...]. *If you do this even if you have a problem with breast milk, the child won't feel it*.	

Recommendations made by key informants

Type of recommendation	No. of occurrences	Verbatims
Raising awareness The participants suggested that more awareness-raising campaigns should be carried out to address the lack of knowledge about nutrition, health and healthcare.	Recommendation made in 7 interviews. (3 health workers; 4 NGO workers)	*"To help and encourage mothers, we need to raise their awareness. If a mother knows about the importance of good care practices, she can get organised to look after her children better.* (Nurse) *"The only recommendation is to step up communication and awareness-raising sessions.* (International NGO officer) *"For me, it's mainly about raising awareness. Raising awareness to help people become more aware and make decisions, that's the only thing I see"* (Humanitarian project officer).

		"I think that I, at my level, can make certain recommendations, in particular to be able to continue raising awareness in the communities, form nuclei and provide them with technical support that can be applied in the community in the various families". (Local NGO officer) *"The first thing is to organise awareness-raising and information sessions for women from time to time, because many of them lack knowledge".* (Local NGO officer) *"I call for malnutrition to be added to the education curriculum. Everyone needs to be trained in the causes and consequences of malnutrition. We must also continue to raise awareness and provide information".* (Local NGO officer) *"This situation can be remedied by raising awareness among women and, above all, men. It's ignorance that does it. We really need to raise men's awareness. If women listen to men, things can change. (Community relay)* *"We can help them by giving them more support and enough information about good childcare practices.* (Community worker)
Involving fathers and raising their awareness	Featured in 5 interviews (2 NGO workers; 1 health worker; 1 traditional therapist, local authority)	*"It is possible to help them. We need to continue raising awareness. Because even if the mother wants it and the treatment is free at the CSCOM, some decision-makers won't let the women come with their children. We need to give useful information not only to mothers, but also to decision-makers. If people know that a particular service is available in a particular place, they'll come along". (International NGO officer)* *"What can be considered good practice is that both parents should take care of the child, not just the mother, as she has a lot to do [...]. [...]. Because the woman has too much work to do, she has to go to the field, she has to look for firewood, she has to prepare. She doesn't have much time to rest. The man, on the other hand, has time to rest. He can take advantage of his time off to look after the child.* (International humanitarian project worker) *"If the mother is very busy, the father must be able to look after the child. That's what I was saying. The father has to help the mother because she's very busy. There even has to be someone other than the two parents to look after the child. That way, when it's time to cook, the mother can look after the child.* (International humanitarian project worker)

		"I ask you to bring fathers together to inform and educate them about good practice and its importance in the field of nutrition." (community relay) *"I ask the men to get more involved in looking after the children, they really need to help the women with these activities.* (traditional therapist, woman) *"What I have to say is that men must support women, because in most cases the problem lies with the men. The women make the request and decide. If a child is ill, they should go straight to the health centre. For example, a child may fall ill and his father is away, but if no decision is taken, the illness may set in before he returns. The challenge for us is to raise awareness and convince the men to support the women.* (Local authority)
Involving all members of the family	Present in 2 interviews (NGO officer, health worker)	*"We need to involve grandparents in everything we do in the community, because they have the last word". (International NGO officer)* *"As a matter of good practice, all members of the family should take care of the child. Because the woman has too much work to do. If she still has to look after the child alone, it's difficult. So all family members must learn good practice and look after the children together. (Community relay)*
Culinary demonstrations, encouraging the consumption of local products	Present in 2 interviews (2 NGO agents)	*"Thirdly, bring the women together once a week to give cookery demonstrations, as many women don't know how to prepare small dishes for the children, and exchange ideas amongst themselves.* (Local NGO officer) *"Promote local products, which are very rich (cowpea and baobab leaves) for children's nutrition".* (international humanitarian project officer)
Improving reception for parents at health centres	Present in 1 interview (local authority)	*"Ensure a warm welcome at the health centre for accompanying persons. Pay the nutrition officers. Provide an incentive for mothers (in the form of food) when they come to treat malnourished children, as waiting times are often long and mothers are hungry. And motivate the health workers. (...) Strengthen the capacity of the CHWs to deal with cases of moderate acute malnutrition (MAM) locally".* (Local authority)
Creating play areas for children	Present in 1 interview (NGO agent)	*"Secondly, to create a space for children in all neighbourhoods so that they can flourish.* (Local NGO officer)

Eating habits and practices among families in Koutiala (discussion groups)

Food habits and practices	FG35	FG36	FG37	FG38	FG39
Food given to children	**Dissensus** Some participants say they give the children the same meal as the adults, while others say they give the children porridge.	/	Tô or porridge	*"What health workers say is that children should be fed fortified porridge, milk and eggs, that's what good nutrition is all about".* Enriched porridge, milk, eggs, bananas, oranges	The foods vary according to the family's possibilities. The participants mentioned the following foods: Porridge, tô, rice, couscous. For children aged 6 to 23 months: breast milk, fish soup, bananas.
Perceptions of refusal to eat and actions	Replace with a food that the child likes, and if they still don't eat, take them to the health centre;	*Take the child to the health centre + play with the child, coax him,* talk to *him*	Perceived as an expression of the child's preferences ("he doesn't like that") + sign of illness. **Actions**: replace the food with another + watch your appetite In rare cases, participants said that some people take their children to traditional therapists/imams. Cf. extracts	*"You give him the breast, if he refuses, you give him porridge, if he refuses, right now you breastfeed him, he'll calm down."* Refusal of breast milk and other foods is interpreted as a symptom of illness	Refusal is interpreted as a sign of illness. The actions mentioned are: taking the child to health centres, replacing the food with another / with milk (breast milk or not), giving the child "*syrups"* or medicines that give the child an appetite.[29]

[29] The following extract explains that in cases where the child refuses to eat, the mother can use medicines to give the child an appetite: *"If he refuses to eat, you take him to the health centre, the health worker consults and can give syrups and other medicines that will enable the child to eat. We can also offer him another food he prefers or give him syrups to stimulate his appetite. Sometimes the health worker consults the child and the mother*". (FG39)

				Dissensus in terms of actions: Some participants said they turned to health centres, others said they turned to traditional therapists or religious people.	
Children's food choices	Father & mother		Father	Mother	Mother
Preparing meals + feeding	Role of mother + grandmother		Mother	Mother; nanny; father if mother not present	The mother prepares the meal but the parents give the food + sister
Routine (time, number of meals, etc.)	/	"There's *no specific time to eat, if the child is hungry you just give them something to eat*."	*"Small children can eat 4 times a day".*	*"Every time a child is hungry, he has to eat. If you feel he is hungry, you give him something to eat.*	*"If the child is healthy, he can eat three times a day.* *"He spends all day suckling.*
Withdrawal	/	Weaning takes place at 20 months of age unless the mother is pregnant (in which case weaning takes place earlier) or if the mother is ill (in which case weaning takes place immediately).	/	/	/
Introducing food	/	6 months (including water)	/	/	/

Play practices and habits (discussion groups)

	FG35	FG36	FG37	FG38	FG39
Who decides when the child plays	Mother	Mother	Father	Mother	/
Who plays with the child	Brothers	Mother, with other children	With other children, with siblings, mother	With other children, with nannies	Siblings, mother
Activities	Toys; brothers fighting; dolls; old kitchen utensils	Singing, dancing, smiling, toys	Outside, tree branches are cut to make things; for the little ones, toys (bells, dolls). The mother can make the child dance	Toys (dolls, bells, etc.)	Toys (dolls, bells, etc.)
Other	/	/	/	Helps establish an emotional bond	Helps establish an emotional bond + enables communication

In all the groups, the participants explained that the children play more with other children. In three groups, the participants said that it was the mothers who also played with the children. Two groups agreed that play is a way of establishing an emotional bond between parents and children. In terms of activities, the participants indicated the use of toys (e.g. dolls, bells, etc.) but also other objects (e.g. old kitchen utensils). In addition, two groups said that carers could play with the children through song and dance.

Sleeping and bathing practices and habits (discussion groups)

	FG35	FG36	FG37	FG38	FG39
Sleep habits					
Who takes care of it			Mother	Mother	/
Routine information	After bath and meal	After the bath; The child sleeps between 1 and 2 hours during the day	Healthy children sleep easily during the day between meals	After a bath	/

Specific actions	Use of mosquito nets,		If there is persistent refusal to sleep, take the child to the health centre; Use of mosquito nets; if houses are not cemented, beware of parasites (as children sleep on the floor)	Wear it on your back then put it in bed, use a mosquito net	/
Strategies for getting children to sleep	Mother lies next to her; breastfeeds; coaxes her;	Walking him to sleep		Breastfeeding, pampering and carrying your baby on your back	/
Bathing habits					
Who takes care of it	Grandmother; older sister; brothers; mothers	/	Mother	Grandmother, then mother	/
Who decides	Mother or grandmother	/	Mother	The mother. In certain circumstances the father (e.g. when it's cold)	/
Specific actions	Washing, massaging, dressing	*"Massage is not necessarily a tradition, but many do it, especially with shea butter. If you massage with shea butter, the child feels good. A lot of them have got into the habit of massaging after the bath with shea butter".*	/	Wash in a basin with soap or boiled plant. Heat the water if it's cold	/
Frequency	2 times a day	3 times a day (morning, noon and evening)		3 times a day (morning, noon and evening, before 5 p.m.)	3 times a day, not after 5pm

Other	/	In the event of respiratory illness, some doctors advise against washing children	Tradition of not washing children after sunset (*"our parents taught us, ..."*)	/	/

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