

Evaluation of the Care of Malnourished Children Hospitalized at the Ureni of the Kayes Reference Health Center in 2021

M. MBUKEMBO¹, B. NIARE², O. DIALLO³, Y.I. TRAORE⁴, I. HALHOUSSEINI⁵,
S. DIARRA⁶, C. KEITA⁷, I. BENGALY⁸

¹ Expert and engineer in health information systems, Coordination of the NGO Action against Hunger, Mali.

²Bamako Regional Health Department, Mali

³CHU le Luxembourg, Ophthalmology Department, Mali

⁴Reference Health Center of Kayes, Mali

⁵Trainee at the Kayes Health Center, Mali

⁶Reference Health Center of Kayes, Mali

⁷Commune II reference health center

⁸Reference Health Center of Kayes, Mali

University Health Center of Koniakary, Kayes, Mali

Author Correspondent: Samou Diarra, Health Center of Reference of Kayes, Mali, Region of Kayes, Area: Attbougou: Tel: 75 16 60 07.

doi: 10.51505/ijmshr.2023.7302

URL: <http://dx.doi.org/10.51505/ijmshr.2023.7302>

Received: April 08, 2023

Accepted: April 28, 2023

Online Published: June 21, 2023

Abstract

Summary

Introduction: The Kayes health district, with more than 56 community health centers, has only one URENI (Intensive Nutritional Recovery and Education Unit). This situation can lead to an overload of work for the staff and impact on the care of hospitalized patients. It is in this context that this study was initiated to evaluate the management of patients at the URENI of the CSRéf. The general objective was to evaluate the management of malnourished patients at the URENI of the Kayes health center in 2021. The specific objectives were to describe the management of malnourished children hospitalized at the Kayes CSRéf; to determine performance indicators.

Methodology: Our study took place at the URENI of the Kayes Reference Health Center. It was a descriptive study based on a retrospective survey from June 28 to August 27, 2021. Our study population consisted of all malnourished patients hospitalized at the URENI of the CSRéf during the study period whose records were found.

Results: The sex ratio was in favor of girls, the vast majority of patients were in the 6-24-month age group, the recovery rate was over 90%. Difficulties remain in the administration of the measles vaccine and in the referral of children.

Conclusion: The management of malnutrition at the URENI of the CSRéf is satisfactory in terms of performance indicators. However, a study on client satisfaction is necessary to complete our perspective.

Keywords: Malnutrition, PCIMA, URENI, Kayes, Mali,

1. Introduction

According to the WHO, malnutrition is a pathological state resulting from the relative or absolute insufficiency or excess of one or more essential nutrients, whether this state is manifested clinically or is detectable only by biological, anthropometric or physiological analyses [1].

Malnutrition paralyzes children, makes them more vulnerable to disease, weakens their intellect, decreases their motivation and undermines their productivity [2].

After years of decline, recent statistics from the joint report of the Economic Commission for Africa (ECA) and the Food and Agriculture Organization (FAO) show that malnutrition affects 821 million people worldwide [3].

Of these, 257 million are in Africa, including 237 million in sub-Saharan Africa and 20 million in North Africa. Compared to 2015, there was an increase of 34.5 million people in Africa [3].

In Mali, the main results from the SMART 2021 survey show that the prevalence of global acute malnutrition (GAM) was 10.0% at the national level, which corresponds to a serious nutritional situation. According to the results of the same survey, the national prevalence of chronic malnutrition (stunting) was 21.9%, the nutritional situation with respect to underweight at the national level is 17.6% [4].

According to the EDSM-VI (Mali Demographic and Health Survey, 6^e edition), the prevalence of global acute malnutrition varies according to the regions of Mali with 18.9% in Ségou, 13.8% in Mopti, 9.2% in Sikasso compared to 10.9% in Bamako, 11.4% in Kayes and 9.9% in Koulikoro [5].

In the Kayes region, according to the SMART 2021 survey, the prevalence of global acute malnutrition (GAM) was 11.5%, which corresponds to a serious nutritional situation. According to the results of the same survey, the regional prevalence of chronic malnutrition (stunting) was 22.3% [4].

The Kayes health district, with more than 56 community health centers, has only one URENI (Intensive Nutritional Recovery and Education Unit). This situation can lead to an overload of work for the staff and impact on the management of hospitalized patients. It is in this context that the present work was initiated to evaluate the management of the URENI of the CSRéf.

2. Objectives

• General objective

Evaluate the management of malnourished patients at the URENI health center in Kayes in 2021.

• **Specific objectives**

- Describe the management of severely malnourished children hospitalized at the CSRéf of Kayes
- Determine performance indicators;

3. Study methodology

Our study took place at the URENI of the Kayes Reference Health Center (CSRéf). It was a descriptive study based on a retrospective survey from June 28 to August 27, 2021. Our study population consisted of all malnourished patients hospitalized at the URENI of the CSRéf during the study period.

Inclusion criteria: All malnourished children hospitalized at the URENI of Kayes whose file was found and completely filled out.

Non-inclusion criteria: Children hospitalized at the URENI with incompletely completed or unfound hospitalization records were not included in our study;

Sampling: We conducted an exhaustive sampling.

Variables

Quantitative variables (age, weight, height, length of stay and BP). Qualitative variables (gender, reason for consultation, associated pathologies, treatment received, discharge mode)

Data Collection Technique: Data were collected from the medical record. The information collected from the records was recorded on pre-established and tested survey forms.

Data entry and analysis:

The records were manually searched. They were entered and analyzed on SPSS 16.0. The results were presented in tabular form. The document was written using Microsoft Word 2013.

Ethical aspect:

Patient anonymity was preserved by assigning a number to all files.

4. Results

Distribution of children by gender

During our study, we counted 316 girls or 54.96% of the sample and 259 boys or 45.04%. The sex ratio was 1.2 in favor of girls.

Distribution of children by age

The most represented age group was children 6 to 24 months, representing 92.5% of the children.

Distribution of children by admission mode

Table I: Distribution of children by mode of admission

Admission mode	Workforce	Percentage
Spontaneous	322	56,0
Health Center	253	44,0
Total	575	100,0

The majority of children (56%) were admitted spontaneously and 44% were referred by other facilities.

Care of malnourished children

• **The MS-Number on file**

The MAS number was on all (100%) of the children admitted and was correctly written in 86% of the cases.

• **Systematic antibiotic treatment**

The second-line regimen was the most commonly used, i.e., Ceftriaxone Injection plus Gentamycin Injection.

• **Drug treatments administered to patients**

Apart from the systematic antibiotic treatment, Nystatin suspension (58.8%) was the most prescribed, followed by Albendazole (17.9%), Metronidazole (3.7%), Metopimazine/Vogalen® (3.3%). Other drugs were administered as Metoclopramide, Resomal, Azythromycin, Fluconazole, Debridat, Rhinathiol syrup, Artesun injectable, Carbocysteine. Also 10.4% did not receive any treatment other than systematic antibiotic therapy during hospitalization.

• **Nutritional treatment in phase 1**

The majority of children admitted during phase I received therapeutic F75 milk (94.4%). And 5.6% received diluted F100.

• **Nutritional treatment in the transition phase**

We notice that at the transition phase, the majority of children are on Plumpy Nut (81%), followed by F100 therapeutic milk (6.3%).

Performance indicators

• *Distribution of children by type of outing*

Table II: Distribution of children by type of exit

Output type	Workforce	Percentage
Successfully treated	530	92,2
Medical reference	32	5,6
Deceased	9	1,6
Abandonment	4	0,7
Total	575	100,0

The majority of the children admitted were successfully treated (92.2%) with 5.6% of medical referrals. The death rate was 1.6% and 0.7% drop out.

• **Distribution of children according to associated pathologies**

Table III: Distribution of children according to associated pathologies

Associated complication	Workforce	Percentage
Diarrhea and/or dehydration	260	45,2
Anorexia	128	22,2
Severe oral candidiasis	39	6,7
Malaria	53	9,4
IRA	79	13,7
Anemia	12	2,2
Convulsion	4	0,6
Total	575	100

Diarrhea with or without dehydration was the most frequent complication with 45.2%.

Administration of the measles vaccine

The number of children who received the measles vaccine was 129 (22.4%). It should be noted that 24.3% of these children were less than 9 months old.

IEC sessions provided to mothers or caregivers

Mothers or caregivers who received I.E.C. sessions represented 79.7% of the cases and 20.3% (117 mothers or caregivers) did not receive any I.E.C.

5. Discussions

Constraints and weaknesses of our study

We conducted a descriptive and retrospective study of 2 months (from June 28 to August 27, 2022) on 575 records of children hospitalized at the URENI of the Kayes health center in 2021. We encountered problems with the records, most often related to notification errors.

Socio-demographic characteristics

• **Gender**

During our study, the female sex was a little more predominant with 54.96% with a sex ratio of 1.2. This female predominance is reported by a study conducted by Maïmouna SIDIBE at the Kalaban Coro reference health center in 2018 which objectified a sex ratio of 1.1 [7].

• **Age**

The most represented age group was children from 6 to 24 months, i.e. 92.5% of children. Our result is comparable to that of MOHOMODOU ABDOULMOUMINI who found 81.2% of children for the same age group [8].

They agree with the data in the literature that this age group is the most vulnerable because it also corresponds to the period of weaning practice in the community. This observation calls into question the practice of infant and young child feeding. The URENI should not take comfort in taking care of nearly 600 children even if it successfully treats more than 90% of them. It is imperative to put in place vigorous actions by the different actors to reinforce the prevention of malnutrition through sustained sensitization on the determinants of malnutrition. The "Infant Activity Support Group" strategy, according to the DHIS2 in 2022, made it possible to carry out 8048 home visits, 1021 nutritional demonstrations and 1734 IEC/CCSC. We should also think about reinvigorating the community relay package so that households can benefit from the appropriate information to maintain their health and prevent disease. Every malnutrition is too much in the community, provided that the knowledge and technologies to prevent it exist, are simple and accessible.

• **Admission mode**

In the health district of Kayes, in 2021, there were more than 54 URENAS with approximately 44 Community Health Agent sites. In doing so, we note that the majority of children were directly put into the program (spontaneous mode). This may be due to a lack of referrals or to the influx of patients referred by the district URENAS to the hospital URENI. In addition, the Kayes referral health center is located in a non-functional health area adjacent to another non-functional area. In all cases, under-referral should not be ruled out insofar as several supervisions of nutrition activities in the URENs have noted that some children are not referred. The distance of certain CCom to the CSRéf and the impassable roads during the rainy season and poverty explain the absence of referral of other cases. It should be added that the World Food Program (WFP) and ACF (Action contre la Faim) help those accompanying hospitalized patients by providing three meals a day, prescription costs, and payment of round-trip transportation for patients with a transfer form.

Taking charge

• **Nutritional treatment**

At the end of our study, 94.4% of children received F-75 milk in the acute phase and the 5.6% who did not receive F-75 were children under 6 months of age. This meets the standards of the national protocol for the integrated management of acute malnutrition. It should be added that during periods when there is a shortage of F-75 milk, diluted F-100 milk (F-100D) is given to patients in phase 1. This practice is equally effective with F-75 in cases of marasmus, but less effective in cases of edema.

In our study, the most common nutritional treatment received in the transition phase was the PPN (RUTF: Ready-to-use Therapeutic Food), which was used in 81% of cases. This option is also a paradigm shift because previously the routine was to systematically put the children in the transition phase on F-100 milk before putting them on PPN. This allowed us to reduce the length of stay of patients in the program at the URENI.

• **Antibiotics**

In our study 568 cases or 98.8% of patients received the combination of Ceftriaxone + gentamycin. This result can be explained by the fact that patients with severe infections are systematically treated with Ceftriaxone + gentamycin at the URENI of Kayes and 508 of these patients, or 88.3%, received amoxicillin as an oral relay.

The Ceftriaxone and Gentamycin regimen of the second intention according to the protocol. Thanks to its apparent effectiveness, its adoption has become routine at the URENI of the CSRéf of Kayes.

• **Antifungal**

In our study 58.8% of the patients had received Nystatin as antifungal agent and only 0.3% had received Fluconazole. This result shows the frequency of fungal infections in malnourished patients, indicating a weakened immune system.

• **Measles Vaccination**

The number of children who received the measles vaccine was 129 (22.4%). It should be noted that 24.3% of these children were less than 9 months old. This shows that some patients who should have received the vaccine missed it, highlighting a weakness in the management. In practice, we note that many accompanying persons do not have the child's vaccination record at the time of hospitalization, which constitutes a reason for its administration until proven otherwise.

• **Pathologies associated with severe acute malnutrition**

Diarrhea with or without dehydration was the most frequent complication with 260 cases or 45.2% of children. This high rate of diarrhea/dehydration in our study could be explained by the fact that in malnourished children there is a decrease in immune defenses, increasing bacterial proliferation in the intestine.

Our result is superior to that reported by SISSOKO F S who found 41.6% of comorbidity between SAM and diarrhea in a study conducted at the GT University Hospital in 2009 [9].

Performance indicators

At the end of our study, we obtained 530 cases (92.2%) of stabilization (successfully treated). This high rate could be explained by the effective resources made available to the URENI of Kayes for the management of severe acute malnutrition. According to the URENI standard, which recommends a stabilization or recovery rate of over 75% of admissions, this result is acceptable. In addition, the URENI of the CSRéf implements the PCIMA SURGE approach, which makes it possible to plan for work overloads that could compromise the quality of care. This approach identifies actions according to the different critical phases (alert, serious, emergency), their costs and those responsible. The difficulty with this strategy remains the lack of support from the district manager, who does not finance these actions. However, negotiations continue. Other explanations may be the maintenance of the guard to monitor hospitalized children, the audit of deaths, and the close monitoring of the URENI support physician.

Deaths were observed (9 cases or 1.6%.) The cause most associated with these deaths was the delay in admission. In our study, this death rate is acceptable according to the performance criteria of the PCIMA protocol which recommends a death rate of less than 10%. Our result is lower than that of Savadogo AS in 2007 in the Segou region who found 20 cases (5.0%) of death [10].

Also, 4 cases dropped out of treatment, i.e. 0.7%. This rate is acceptable according to the URENI standard, which should be less than 15%. This low dropout rate in the Kayes URENI can be explained by the fact that the partners take full responsibility for the children and their companions free of charge by covering the costs of treatment, food and travel. Similar results were noted by Coulibaly K in 2012 in the health district of Tessalit in the Kidal region, which did not record any cases of abandonment [11].

Brachial perimeter

The median PB value at admission is low with a value of 110mm or 19.5%, and may indicate a low level of community mobilization. Indeed, if malnourished children are not identified at an early stage, community screening activities are not carried out regularly and consequently children arrive late at the care facilities. In addition, late identification of malnourished cases has an impact on the response to treatment and length of stay. Our result is lower than that of S. Diarra in the same service at the CS Réf of Kayes in 2019 which is 57% [12].

Conclusion

Our retrospective study from January 1 to December 31, 2021 revealed that at the URENI of the CS Réf in Kayes, children aged 6 to 24 months were the most affected by severe acute malnutrition (92.4%). The level of care provided is satisfactory, in accordance with the PCIMA standards and recommendations for the management of SAM. However, the study does not take into account the level of client satisfaction. This is why it would be appropriate to initiate a study in this sense to assess the adequacy between the quality of care and client satisfaction.

Recommendations

To the health authorities and the administration of CS Réf in Kayes

- Expand and equip the URENI of the CS Réf de Kayes ;
- Educate the children's mothers for better hygiene;
- Ensure compliance with Surge planning;
- Improve URENI hygiene;
- Strengthen awareness of the ANJE ;
- Strengthen the activities of the GSAN.

To the nursing staff

- Put more effort into screening for acute malnutrition;
- Reinforce measles vaccination in indicated patients;
- Ensure case referral is strengthened;
- Ensure GSAN monitoring;
- Ensure preventive supervision of children

To the public

- Strengthen active screening for acute malnutrition;
- Motivating GSANs;
- Respect the advice given by the community relays, the GSAN.

Bibliographic references

"Strategy to Improve Child and Youth Nutrition in Developing Countries".

Information Center 39, avenue Pasteur DAKAR (Senegal) August 1999; 8- 9

WHO. The consequences of malnutrition according to the WHO.

FAO/CEA. Regional overview of food security and nutrition in Africa 2018.

National Institute of Statistics (INSTAT). Enquête Nationale Nutritionnelle Anthropométrique et de Mortalité rétrospective suivant la méthodologie SMART, Mali 2019, page: P53

National Institute of Statistics (ISNTAT). Demographic and Health Survey in Mali 6th edition (EDSM VI). 2018; 35-40.

Mali Demographic and Health Survey 5th edition.

M Sidibé Evaluation of the activity report of the URENI of the Kalaban Coro Reference Health Center in 2019.8. UNICEF. UNICEF Conceptual Framework. 2013.

ABDOULMOMINI MOHOMODOU Evaluation of the nutritional status of children aged 6 to 59 months seen at the URENI of the Reference Health Center of Commune VI in the district of Bamako

Sipa SF evaluation of the URENI's activity assessment of children aged 0-59 months hospitalized in the pediatric department of CHU Gabriel Touré. 2010, Thesis of medicine Bamako, Mali No 10M326, P-100.

Savadogo. Malnutrition in children from 0 to 5 years old in the Niamakoro Fomba hospital in Segou. 2007

Kassoum C. Management of acute malnutrition in children aged 6 to 59 months in the health district of Kidal and Tessalit. 2012. Thesis of medicine Bamako, Mali.

S. Diarra, determinant of PB in the management of URENI of the CSRéf of Kayes in 2019.