International Journal of Applied Science and Engineering Review

IJASER

ISSN: 2582-6271

Vol. 6, Issue. 6, Nov-Dec 2025, page no. 20-35

To cite this article: Wembakoy Okolongo Albert, Nzila Nebangwe Joseph, Toponi augustin, Mosuambole Lotima Boselo Philippe, Muyengbe Akumbanote Elisée, Basandja Longembe Eugène and Losimba Likwela Joris. (2025). EPIDEMIOLOGY AND FACTORS ASSOCIATED WITH SEVERE ACUTE MALNUTRITION IN THE URBAN-RURAL HEALTH ZONE OF ISIRO IN THE DEMOCRATIC REPUBLIC OF CONGO, International Journal of Applied Science and Engineering Review (IJASER) 6 (6): 20-35 Article No. 249 Sub Id 374

EPIDEMIOLOGY AND FACTORS ASSOCIATED WITH SEVERE ACUTE MALNUTRITION IN THE URBAN-RURAL HEALTH ZONE OF ISIRO IN THE DEMOCRATIC REPUBLIC OF CONGO

Wembakoy Okolongo Albert[1,2,3], Nzila Nebangwe Joseph[5], Toponi augustin[3], Mosuambole Lotima Boselo Philippe[3], Muyengbe Akumbanote Elisée[4], Basandja Longembe Eugène[1] and Losimba Likwela Joris[1].

[1].Faculty of Medicine and Pharmacy, Department of Public Health, Universities of Kisangani;
[2].Faculty of Medicine and Pharmacy, Human Nutrition, Universities of Kisangani;
[3].Higher Institute of Medical Techniques of Isiro (ISTM-Isiro);
[4].Faculty of Economics and Management, Uélé Universities;
[5].Provincial Health Division of Haut-Uélé.

DOI: https://doi.org/10.52267/IJASER.2025.6602

ABSTRACT

Introduction: Acute malnutrition continues to affect the lives of millions of children worldwide. In 2020, an estimated 45.4 million children were wasted—a figure representing 6.7% of children under five worldwide. Of these, 13.6 million are severely wasted, suffering from severe acute malnutrition (SAM). In Haut-Uélé Province, According to MICS 2018 Among children under 5 years old, 10% suffer from acute malnutrition (31,000) and 35% (109,000) suffer from chronic malnutrition in the Isiro Health Zone.

Methods: This is a cross-sectional study with a descriptive aim conducted in the Isiro ZS in the Haut-Uélé province during the period from May 15 to June 15, 2023.

Data were entered using Excel software and imported into STATA 15 for statistical analysis.

Descriptive statistics were reported on proportions for categorical variables and mean (±SD) for quantitative variables with symmetrical distribution.

Results: Our study shows that the prevalence of severe acute malnutrition is 17.47% and moderate acute malnutrition is 11.82%, compared to chronic malnutrition at 0.63%.

Conclusion: Our study demonstrates that malnutrition remains a public health problem. It is multifactorial, but also sociodemographic, economic, and behavioral, and most frequently affects children between the ages of 6 and 24 months.

International Journal of Applied Science and Engineering Review

IJASER

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

KEYWORDS: Epidemiology, severe acute malnutrition, urban-rural health zone of Isiro in DRC

INTRODUCTION

Malnutrition is a pathological condition resulting from the relative or absolute deficiency or excess of one or more essential nutrients, whether this condition is clinically manifested or detectable only by biochemical, anthropometric or physiological analyses. The WHO estimates that in 2000, one in three people in the world suffered from malnutrition [1].

Acute malnutrition continues to affect the lives of millions of children worldwide. In 2020, an estimated 45.4 million children were wasted – a figure representing 6.7% of children under five globally. Of these, 13.6 million were severely wasted, suffering from severe acute malnutrition (SAM) [2].

In 2009, the Food and Agriculture Organization of the United Nations (FAO) estimated the number of people suffering from severe undernutrition at more than one billion worldwide. According to the FAO, another 1.02 billion people suffer from undernutrition, a serious form of malnutrition, 99% of whom live in developing countries. Worldwide, approximately 1.5 million children die from severe wasting. In Asia and the Pacific, 642 million people are malnourished [1]. Nearly 6 million die each year from malnutrition-related causes, 1.5 million from undernutrition, and 178 million suffer from stunting, partly because they do not consume enough food or vitamins. Similarly, 146 million children under five are underweight. The rate of acute malnutrition was 20% in the Sahelian strip of Chad in August 2010. It exceeded 17% in Agadez and Zinder in Niger in October 2010 [1].

Child malnutrition remains a major public health challenge worldwide and in sub-Saharan Africa in particular. The State of Food Security and Nutrition in the World report published by FAO, IFAD, UNICEF, WFP and WHO indicates that the prevalence of undernourishment is 20% in Africa, 7% in Latin America and the Caribbean, and more than 12% in Asia. The number of stunted children under 5 years of age is 149 million, a figure that has declined by 10% over the past six years, but falls short of the 2030 target of halving the number of stunted children [3].

Sub-Saharan Africa is the region with the highest prevalence (percentage of the population) of hunger [4]. One in four people is undernourished. Malnutrition causes the death of 3.1 million children under 5 each year, nearly half (45%) of all causes of death. One in six children, or 100 million children, is underweight in developing countries. One in four children suffers from stunting. In developing countries, this figure can reach one in three children [4].

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

In Cameroon, one third of children under 5 years old (33%) suffer from chronic malnutrition and 6% from acute malnutrition. Of these cases of chronic malnutrition, almost half (14%) have the severe form and the infant and child mortality rate remains high at 122‰ [5].

In Mali, according to the fifth edition of the Mali Demographic and Health Survey (EDSM V), 38% of children under 5 years of age suffer from chronic malnutrition, 19% of which is severe. Malnutrition affects 13% of children under 5 years of age, 5% of which is severe. More than a quarter of children under 5 years of age (26%) are underweight. In 9% of cases, it is severe underweight [4].

In the Democratic Republic of Congo (DRC), although the prevalence of acute malnutrition has generally decreased (16% in 2001, 11% in 2010 and 7.9% in 2014), it still exceeds the critical threshold of 10% in several provinces, gOverall, between 2007 and 2023–24, we do not observe no very significant change in the nutritional situation of children: in fact, the prevalence of acute malnutrition has changed little, from 46% in 2007 to 43% in 2013-14 and 45% in 2023-24.[6,7].

In Lubumbashi, the Kandala study reveals that the rate of child malnutrition remains very high in the provinces dependent on the mining industry, compared to the rates observed in the eastern provinces shaken by armed conflict [8].

In the province of Tshopo and the host city of Kisangani (FAO, 2021) precisely in Wanie-rukula, according to in-depth food security analyses, more than 55.1% have inadequate food consumption, 55.7% allocate more than 50% of their income to the purchase of food and 11.2% have recent crisis and emergency strategies to cope with the food supply of their households [9].
In the province of Haut-Uélé,According to MICS 2018 Among children under 5 years old, 10% suffer from acute malnutrition (31,000) and 35% (109,000) suffer from chronic malnutrition [10].
From the above, we asked the main question:

What is the epidemiological profile and factors associated with severe acute malnutrition in children aged 6-59 months in the Isiro health zone?

This allowed us to ask the following secondary questions:

- What is the prevalence of severe acute malnutrition in children aged 6-59 months in the Isiro health zone?
- What are theepidemiological profile andAre the factors associated with malnutrition severe in children aged 6-59 months in the Isiro ZS?

Goals:

International Journal of Applied Science and Engineering Review

IJASER

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

1. General objective

Contribute to the reduction of morbidity and mortality due to severe acute malnutrition in children aged 6-59 months and describe the associated factors in the Isiro health zone.

2. Specific objectives

- To determine the prevalence of severe acute malnutrition in children aged 6-59 months in the Isiro health zone.
- Identifying the epidemiological profile and factors associated with malnutrition are severe in children aged 6-59 months in the Isiro ZS.

II. MATERIALS AND METHODS

Our study was carried out in the urban-rural health zone (ZSUR) of Isiro. It has 20 health areas (AS) including seven (7) urban health areas and thirteen (13) other rural health areas.

Our study population consists of all children aged 6-59 months living in the Isiro ZS.

This is a cross-sectional study with a descriptive aim conducted in the Isiro ZS in the Haut-Uélé province during the period from May 15 to June 15, 2023.

SAMPLING

a. Sample size

We will use the cluster sampling technique using the following formula [11]:

$$n = \frac{z_\alpha^2 * pq}{d^2} * f$$

Legend:

z=1.96

p = 45%

q= 1- p

d= 5% (0.05%)

f = 1.8 (cluster effect)

z_α^2=1.96 x 1.96 = 3.8416

p = 45% = 0.45

q = 1-p = 1- 0.45 = 0.55

d = 0.05 x 0.05 = 0.0025

n= 3.8416 (0.45x 0.55) x1.8= 685 + 10% anticipated non-response=685+69=754 subjects to be surveyed.
0.0025

For an expected prevalence of acute malnutrition in children aged 6 to 59 months of 45% according to the MICS 2023-2024 survey, with the coefficient Z=1.96; cluster effect of 1.8 and degree of precision of 5%,

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

the sample size with an anticipated non-response rate of 10%, the minimum final sample size is754 subjects. For our case, we surveyed 956 subjects beyond the minimum sample size to grant the probability of chance to the entire health zone (HZ).

Determination of the number of clusters

The clusters are neighborhoods in urban areas and villages or localities in rural areas. For our study, we selected 26 subjects per cluster, the total number of maximum clusters to be surveyed was 29 for a maximum size of 754 subjects. These clusters are distributed between two strata (rural and urban) according to their demographic weight.

b. Sampling technique

We used the two-stage cluster sampling technique:

- The simple random drawing of 29 grapes based on the exhaustive list of all the bunches of the targeted environment under study in the Isiro ZS according to the residential environment;
- Random selection of households by the systematic sampling technique determined as follows: counting all households in the cluster (n), calculating the sampling interval (k) by dividing the number by 26; randomly drawing a number between 1 and k which will correspond to the first household to be surveyed to which the sampling interval will be progressively added to find the other households.

The 29 clusters are distributed in 6 health areas (HAs) drawn in a simple random manner out of a total of 20. These health areas were divided into two strata (rural and urban stratum). Out of 13 rural HAs we drew three with 14 clusters taking into account the demographic weight of each HA including: Djombe health area 4 clusters, Mbene health area 4 clusters and Bunie health area 7. On the other hand, out of 7 urban HAs, we drew 3 with 14 clusters including: Mayogo health area 6 clusters, N'sele health area 4 clusters, Tuluba health area 4 grapes.

Variables of interest

Dependent variable: Nutritional status of the child: normal or malnourished

Independent variables

- Mother/childcare provider characteristics: age, sex, education level, marital status, occupation;
- Identification of the child 6 to 59 months: age, sex, vaccination status, vitamin A supplementation status and Mebendazole deworming, use of LLINs;
- Anthropometric data of the child: weight, height, MUAC, bilateral edema.

Data collection technique

The data were present in the guided interview of mothers/caregivers of children aged 6 to 59 months using

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

a pre-established questionnaire. They were supplemented by the measurement of anthropometric data and the search for edema as well as the documentary review for the verification of vaccination status, vitamin A supplementation and Mebendazole deworming of children.

We used as an indicator of nutritional status the weight/height ratio expressed as Z-score according to the WHO 2006 standards, in children aged 6 to 59 months. We included in our study all children aged 6 to 59 months residing in the study environment.

Nutritional edema must meet the following characteristics: it is bilateral, recent, ascending, soft, painless, permanent and symmetrical (BRAMIPS).
The collection of anthropometric data was carried out as follows:

- ***Arm circumference***using the MUAC tape on the left arm;
- ***Weight measurement***: using SECA personal scales to weigh children. This scale allows for quick, easy and accurate weighing. Double weighing was carried out for babies and young children; they were weighed while held in their mother's arms;
- ***Size measurement***: is carried out with a height rod in a standing position for children over 87 cm and then in a lying position for children measuring less than 87 cm. A wooden stick measuring 100 cm and marked at 87 cm was used to determine height (height less than or greater than 87 cm).
-

Data analysis technique

Data were entered using Excel software and imported into STATA 15 for statistical analysis.
Descriptive statistics were reported on proportions for categorical variables and mean (±SD) for quantitative variables with symmetrical distribution.
The nutritional status of the children was assessed as follows:

- If the PB 115 mm = M<Severe Acute Malnutrition (SAM);
- If the PB between 115 and 125mm = Moderate and Severe Acute Malnutrition;
- If the PB is greater than 125 mm= Good nutritional status.

For acute malnutrition, two levels were retained:

- P/T< −3ET and/or edema = Severe Acute Malnutrition (SAM);
- P/T< −2AND and/or edema = Global Acute Malnutrition (GAM).

For growth retardation and underweight, only one level was retained:

- Moderate and severe growth retardation = T/A indices less than minus 2 z-Scores of the reference population;
- Moderate and severe underweight = P/A indices less than minus 2 z-Scores of the reference population.

International Journal of Applied Science and Engineering Review

IJASER

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

The bivariate analysis was carried out between the dependent variable "nutritional status" (Good or bad) and the following dichotomous or dichotomized independent variables: maternal education level (low or high), sex, age, vaccination status, deworming with Mebendazole and vitamin A supplementation of the child.

The relationship between nutritional status and the explanatory variables of interest was investigated using Pearson's Chi-square.The strength of association was estimated using raw ORs.

To account for potential confounding factors, a stepwise, downward logistic regression model at the 10% threshold was used, taking into account all explanatory variables significantly associated with malnutrition ($p<0.05$). All variables were dichotomized, the modified OR derived from the model was presented as well as the WALD Chi2 p-value.

III RESULTS OBTAINED

Table 1: Age of mothers surveyed (year)

Variable	Observations	Average	Standard deviation	Min	Max
Age	956	31.16	10.36	14	68

Table 1 shows that the average age of the respondents was 31.16 with a standard deviation of 10.36, with a minimum age of 14 years and a maximum of 68 years.

Table 2: Sociodemographic characteristics of the surveys

	n=956	**100%**
AGE CLASS (years)	**Frequency**	**Percentage**
14 to 23	255	26.67
24 to 33	367	38.39
34 to 43	234	24.48
44 to 53	58	6.07
54andPlus	42	4.39
SEX		
Female	807	84.41
Male	149	15.59
MARITAL STATUS		

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

Bachelor	363	37.97
Married	593	62.03
LEVEL OF STUDY		
Primary	432	45.19
Secondary	511	53.45
university	13	1.36
OCCUPATION		
With employment	205	21.44
Unemployed/Housewife	751	78.56
RELIGIONS		
Catholic	551	57.64
Protestant	277	28.97
Revival Church	122	12.76
Muslim Church	6	0.63

LThe analysis of table 2 indicates that the age group of 24 to 33 years of childcare providers is more dominant, i.e. 38.39% against the age group of 54 years and over, i.e. 4.39%. Regarding gender, the female gender was in the majority, i.e. 84.41% against the male gender, i.e. 15.59%. The sex ratio for this case is 5.27. Regarding marital status, married people were in the majority, i.e. 62.03% against single people, i.e. 37.97%. Regarding the level of education, secondary education was more observed, i.e. 53.45% against university education, which was weakly represented, i.e. 1.36%. Regarding occupation, the majority of respondents are unemployed (housewife), i.e. 78.56%. Regarding religion, Catholic Christians are more dominant, with 57.64%, followed by Protestant Christians with 28.97%, compared to Muslims with 0.63%.

Table 3: Age of children (months)

Variable	Observations	Average	Standard deviation	Min	Max
Age	956	28.10	15.29	6	59

LTable 3 shows the average age of the children surveyed was 28.10 with a standard deviation of 15.29, with a minimum age of 6 months and a maximum of 59 months.

International Journal of Applied Science and Engineering Review

IJASER

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

Table 4: Sociodemographic characteristics of children

	n=956	100%
AGE (months)	**Frequency**	**Percentage**
6 to 24	499	52.20
25 to 59	457	47.80
SEX		
F	499	50.63
M	457	49.37

LThe analysis of this table shows that children aged 6 to 24 months were in the majority (52.2%) compared to the age group 25 to 59 months (47.8%) and the female gender was dominant (50.63%). The sex ratio is 1.10.

Table 5: Anthropometric parameters of children

	n=956	100%
SIZE (cm)	**Frequency**	**Percentage**
≤75	560	58.58
76 to 95	338	35.36
96 and more	58	6.07
PB (cm)		
<115	127	63.81
115 to 125	219	22.91
126 and over	610	13.28

LTable 5 shows that the size of children with a figure below the norms was the majority with 560 children out of 956 or 58.58%. Regarding branchial compliance (PB) children with an index below 115 were the majority.

Table 6: Vaccination status

	n=956	100%
VAR/VAA (fully vaccinated)	**Frequency**	**Percentage**
Yes	799	83.58
No	157	16.42

International Journal of Applied Science and Engineering Review

IJASER

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

CThe table shows that 799 children out of 956 or 83.58% were fully vaccinated against 157 children out of 956 or 16.42% who did not receive the measles vaccine (VAR) and yellow fever vaccine (VAA).

Table 7: Children with malnutrition

	n=956	100%
MAM (Malnut.AcuteModerate)	**Frequency**	**Percentage**
Yes	113	**11.82**
No	843	88.18
MAS (Malnut. Severe Acute)		
Yes	167	**5:47 p.m.**
No	789	82.53
MNC (Malnut.chronique.)		
Yes	6	0.63
No	950	99.37

LTable 8 shows that the prevalence of moderate malnutrition is 11.82%, acute malnutrition is 17.47% against chronic malnutrition at 0.63%.

Table 8: Severity level according to WHO

ANALYSIS AND INTERPRETATIONS				
Public health significance				
Public health significance of the prevalence of different types of malnutrition in children aged 6 to 59 months				
Acute malnutrition	Chronic malnutrition	Underweight	Prevalence	Nutritional situation
< 5%	< 20%	< 10%	Weak	Acceptable
5 to 9%	20 to 29%	10 to 19%	Moderate	Precarious
10 to 14%	30 to 39%	20 to 29%	High	serious
15% and more	40% and more	30% and more	Very high	Critical

International Journal of Applied Science and Engineering Review

IJASER

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

Comparing these results in Table 8 with WHO standards, the Isiro ZS has a high prevalence with a critical risk of severe malnutrition.

Table 9. Prevalence of mnutrition *and associated factors (bivariate analysis)*

	Presence of malnutrition						
Variables	No	percent	Yes	percent	frequency	percent	p=v
Diarrhea	n=831	%	n=125	%	n=956	%	**0.025**
No	450	85.88	74	14.12	524	54.81	
Yes	381	88.19	51	11.81	432	45.19	
IRA	n=831	%	n=125	%	n=956	%	**0.002**
No	328	91.36	31	8.64	359	37.55	
Yes	503	84.25	94	15.75	597	62.45	
Measles	n=831	%	n=125	%	n=956	%	**0.001**
No	712	85.58	120	14.42	832	87.03	
Yes	119	95.97	5	4.03	124	12.97	
Towards intest.	n=831	%	n=125	%	n=956	%	**< 0.001**
No	398	92.13	34	7.87	432	45.19	
Yes	433	82.63	91	17.37	524	54.81	

Pearsonchi2, Fisher's exact method

Bivariate analysis of malnutrition and associated pathologies shows the link between malnutrition and four pathologies including diarrhea, acute respiratory infections (ARI), measles and intestinal worms with p-value < 0.05.

Table 10: Stepwise, top-down logistic regression model.

Variables	Malnutrition		ORa	CI95%	p-value
Diarrhea	n=956	%			
	No	54.81	0.642	[0.428-0.964]	0.033
	Yes	45.19			
IRA					
	No	37.55	1,912	[1,235-	0.004

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

				2,959]	
	Yes	62.45			
Measles					
	No	87.03	0.219	[0.087-0.553]	0.001
	Yes	12.97			
Intestinal worms					
	No	45.19	2,883	[1 860-4 466]	< 0.001
	Yes	54.81			

All four pathologies showed a contribution to severe acute malnutrition with statistically significant confidence interval and p-value.

IV. DISCUSSION

As the title indicates, the chapter is devoted to the discussion, comments and comparison of our results with other results of previous studies.

We obtained a prevalence of 14% for acute malnutrition. Severe acute malnutrition represents 4.4% (or 31.5% of the total number of malnourished people) and moderate acute malnutrition 9.6%.

IV.1 Prevalence of severe acute malnutrition

Our study shows that the prevalence of severe acute malnutrition (SAM) is 17.47% and moderate acute malnutrition (MAM) is 11.82%, compared to chronic malnutrition at 0.63%. Brahima T, et al 2014 in the Tahoua region, the prevalence of GAM and SAM was respectively 13.1% [95% CI: 11.9 – 15.4] and 2.3% [95% CI: 1.7 – 3.1] [10]. Sangho O et al 2013 in the Barouéli health district in Mali obtained a prevalence of 14% for global acute malnutrition of which severe acute malnutrition represented 4.4% (31.5% of the total malnourished) and moderate acute malnutrition 9.6% [1]. Ouermi et al found in Burkina Faso, an overall prevalence of severe acute malnutrition of 6.69%. Yaméogo et al. in BF cited by Ouermi found 6.35%(3). Koum DK et al in Cameroon found the hospital prevalence of severe acute malnutrition to be 8.75% (n=35/400), marasmus was the most observed clinical form (10). Guindo et al. in Mali cited by Ouermi et al found a frequency of 11.3%(3).

Our result is higher than that of Brahima T, Ouermi, Sangho, Yaméogo and Koum DK. It should also be noted that our prevalence of severe acute malnutrition is 17.47% is higher than the standard whose acceptable proportion should be < 5%, the precarious prevalence varies from 5-9%, the serious prevalence

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

varies from 10-14% and the critical prevalence varies from 15% and more. The result of our study proves that the form of severe acute malnutrition in the Isiro health zone is critical, that is to say severe acute malnutrition is higher in Isiro this is explained by the isolation of the environment whose roads are degraded and the cost of living is too expensive not allowing households to access food products recommended for the good growth of infants, the high rate of illiteracy and unwanted births, early marriages to name a few contribute to the precarious lifestyle. In addition, the situation of the war in the East which has been tearing the country apart for more than 3 decades does not allow for a stable cost of living [12].

Although our prevalence of severe acute malnutrition of 17.47% in the Isiro health zone is higher than the norm, this figure is lower than that found by Kesse FA et al in 2025 in the Tshopo province (neighboring province) who found a prevalence of malnutrition in the Wanie-rukula health zone of 69.6%; the number of malnutrition cases is more observed in the MOBI health area (34.6%) followed by the KIPOKOSO health area (34.0%) and finally the MADULA health area (31.4%) [8]. This increase was observed by Koné K et al in Mali) in 2018 who found wasting at 21.3% with 93.9% of severe form (marasmus 75.8%, kwashiorkor 16.1% and mixed form 2%). Wasting was more frequent before 2 years of age, i.e. 16%, while underweight and growth retardation during the survey period were more frequent after 2 years of age, i.e. 27% and 28% of cases respectively [13].

IV.2 Profile epidemiological and factors associated with severe acute malnutrition in children aged 6-59 months in the Isiro health zone

Bivariate analysis shows that diarrhea contributed to 45.19% of malnutrition cases, acute respiratory infections (ARI) contributed to 62.45%, measles contributed to 12.97% and intestinal worms contributed to 54.81% of the total cases of severe acute malnutrition. Pearson's chi2 test as well as the exact test of ficher shows the association between the four presumed pathologies and malnutrition with p-value < 0.05. Our result on intestinal worms corroborates that found by Kambale RM, et al in 2016 in Bukavu on Infectious profile and mortality of children aged 0 to 5 years admitted for severe malnutrition cited main complications by gastroenteritis (45.71%) and hospital mortality was 20% [6].

IV.2 Sociodemographic and economic characteristics

The result of our study shows that children aged 6 to 24 months were in the majority (52.2%) against the age group 25 to 59 months (47.80%) and the female gender was dominant (50.63%). The sex ratio is 1.10. Coulibaly HB. In 2023 in the Kalaban-Coro health district in Bamako; found the most represented age group in his studies in the 6 to 12 month age group with 41.6% or; almost half of the children and that of F. Traoré cited by Coulibaly who found 58.5% in the 12 to 23 month age group and Y. Traoré found 55% in the same 12 to 24 month age group [14].

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

The result of the present survey is higher than that of Coulibaly in 2023 in Bamako but slightly lower than that of Sangho O and Traoré in Mali 2013. This superiority is explained by the lack of stable income of parents, especially mothers or childminders, especially since the majority of respondents, 78.56%, do not have paid employment on the one hand and on the other hand the level of education of parents and/or childminders have a low level of education because out of the 100% only 13, 1.36%, have university studies. This situation would be the basis of lack of employment, consequently very low income for the survival of households, thus causing malnutrition.

Furthermore, Diallo O. in 2020 Bamako, Mali, mentioned that the occupation of mothers: Housewives represented 60% of the number of respondents. This is lower than that obtained by FALL LO A in Senegal in 2011 (77.7) but similar to our result according to which 78.56% of the women surveyed are unemployed or housewives. Although they are more available to take care of their child nutritionally, they may, however, lack the resources to contribute to improving their family's diet in terms of quality and quantity. The absence of professional occupation of mothers is certainly an opportunity in terms of time availability to take care of their offspring, but also a socioeconomic obstacle to food availability. Indeed, the exercise of a professional activity by the mother increases family resources and should therefore reduce the risk of malnutrition. But this activity also has a negative impact because the mother cannot take care of her young child during the day [15].

CONCLUSION

The epidemiology of Severe Acute Malnutrition (SAM) reveals high prevalence in the urban-rural area of Isiro and among children aged 6-59 months, with associated factors including poor access to nutritious food, infectious diseases (diarrhea, measles, acute respiratory infection (ARI)), poor hygiene and drinking water, and inadequate feeding practices (exclusive breastfeeding). Sociodemographic factors such as the number of children in the family,Lack of adequate schooling of fathers and mothers, low household income level and lack of knowledge of best health practices through infant and young child feeding lead to creating the basis of malnutrition in children are also associated with an accumulated risk of SAM.

REFERENCES

[1]. Sangho O, Doumbia A, Samaké MN, Traoré FB, Traoré M, Iknane AA. Prevalence of acute malnutrition in children aged 6-59 months in the Barouéli health district. Mali public health [Internet]. 2013 [cited 11 June 2025];76-9. Available at: http://revues.ml/index.php/msp/article/view/1432

[2]. FASO B, SUDAN T, GA O, SO N, LIE M, KIS P, et al. Acute malnutrition continues to affect the lives of millions of children worldwide. In 2020, an estimated 45.4 million children were wasted—this figure represents 6.7% of children under five years of age globally. Of these, 13.6 million are severely

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

wasted, suffering from severe acute malnutrition (SAM). [cited 11 June 2025]; Available at: https://admin.concern.org.uk/sites/default/files/documents/2022-09/063%20ERNE%20CMAM%20Surge%20Approach%20Update%20%28Fr%29.pdf

[3].Ouermi AS, Kalmogho A, Traoré Sanogo B, Savadogo H, Guira I, Barro M, et al. Severe acute malnutrition in children aged 6 to 59 months: current situation in the pediatric department of the Ouahigouya regional university hospital (Burkina Faso). AFRICAN JOURNAL OF CLINICAL CASES AND REVIEWS [Internet]. 2021 [cited 11 June 2025];5(3):426-34. Available at: https://biblio.ugent.be/publication/8773077/file/8773078.pdf

[4].FALL LO A Severe acute malnutrition and socio-economic characteristics of mothers in Senegal in 2011.

[5].Ndié J, Tchapda R, Tchanga B, Wina P, Takoukam I, Bayoro I, et al. Epidemiological aspects of severe acute malnutrition at the internal nutritional and therapeutic center (CNTI) of the Tcholliré Health District. Med Afr noire (Online) [Internet]. 2017 [cited 11 June 2025];57-64. Available at: https://pesquisa.bvsalud.org/portal/resource/pt/afr-199016

[6].Kambale RM, Kasengi JB, Kivukuto JM, Cubaka LM, Mungo BM, Balaluka GB. Infectious profile and mortality of children aged 0 to 5 years admitted for severe acute malnutrition: a retrospective cohort study at the Nutritional and Therapeutic Center of Bukavu, Democratic Republic of Congo. The Pan-African Medical Journal [Internet]. 2016 [cited 11 June 2025];23:139. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC4885721/

[7].Demographic and Health Survey EDS-RDC III 2023–24: Key Indicator Report, The DHS Program ICF Rockville, Maryland, USA June 2024

[8].Nkumisongo S, Ntanga MN, Lutumba OM, Lubo DL, Kashila FM, Nkombo MN, et al. Readmission of children under 5 years of age treated for severe acute malnutrition in Lubumbashi, Democratic Republic of Congo. Congolese Nurse Journal [Internet]. 2022 [cited 11 June 2025];6(1):33-9. Available at: http://ric-journal.com/index.php/RIC/article/view/34

[9].Kesse FA, Ntambwe SB, Dourma M, Matangelo GEE, Babintu LMB. Determinants of the resurgence of acute malnutrition in children aged 6 to 59 months, a study conducted in the rural health zone of Wanierukula/Tshopo, Democratic Republic of Congo. Congolese Journal of Science and Technology [Internet]. 2025 [cited 11 June 2025];4(1):48-54. Available at: https://rcst.cd/index.php/rcst/article/view/229

[10].Public Health E of S. MICS RDC III 2018 Report [Internet]. Kinshasa School of Public Health. 2020 [cited June 12, 2020]. Available at: https://espkinshasa.net/rapport-mics-2018/

ISSN: 2582-6271

Vol. 6, Issue.6, Nov-Dec 2025, page no. 20-35

[11].Nutritional protocol in DR Congo according to the SMART methodology June 2016 national surveys March 2017Developed by the National Nutrition Program (PRONANUT)

[12].Brahima T, Salou H. Assessment of the coverage and accessibility of the nutrition program of Doctors of the World (MDM) in the health district of Illela. 2014 [cited 11 June 2025]; Available at: https://www.coverage-monitoring.org/wp-content/uploads/2015/03/Rapport-SQUEAC-MDM_Niger_Illela-2014.pdf

[13].Koné K. Prevalence of malaria parasitemia, malnutrition and anemia at the end of the malaria transmission season in Koumantou (Mali) in 2018. [Internet] [PhD thesis]. USTB; 2020 [cited 11 June 2025]. Available at: https://library.adhl.africa/handle/123456789/13888

[14].Coulibaly HB. Study on risk factors related to acute malnutrition in children aged 6 to 59 months in the Kalaban-Coro health district [Internet] [Doctoral thesis]. University of Science, Technology and Engineering of Bamako; 2023 [cited 11 June 2025]. Available at: https://bibliosante.ml/handle/123456789/12371

[15].Diallo O. Severe acute malnutrition and socioeconomic characteristics of mothers in Commune VI of the Bamako district in Mali. Mali Public Health [Internet]. 2020 [cited 11 June 2025];76-9. Available at: http://revues.ml/index.php/msp/article/download/1814/1264