



# Evaluation of infant and young child feeding practices in the city of Koutiala (Mali) from April 01 to 30, 2021

KONE A<sup>1\*</sup>, TRAORE M<sup>2</sup>, TRAORE Z. M<sup>3</sup>, DIAKITE S<sup>1.</sup>, DEMBELE O<sup>2</sup>, FOMBA D<sup>4.</sup>, COULIBALY A<sup>1</sup>, KONE A. D<sup>5</sup>, DOLO A<sup>1.</sup>, OUOLOGUEM T<sup>6.</sup>, KONE O<sup>7</sup>

1. Regional Health Directorate
2. Sikasso Hospital
3. Koutiala Reference Health Center
4. IRC: International Rescue Committee
5. USAID (Palladium)
6. General Directorate of Health and Public Hygiene (Mali)
7. National Institute of Public Health of Bamako

**Corresponding Author(s):** Madou Traoré

Infectiologist and head of the medical service at Sikasso hospital, Mali. Email:

[samanierga1975@gmail.com](mailto:samanierga1975@gmail.com)

## Résumé :

**Introduction/Objectifs :** En raison du peu d'études réalisées au Mali sur l'évaluation des pratiques d'alimentation du nourrisson et du jeune enfant, que la présente étude a été réalisée. Elle avait comme objectif était Evaluer les pratiques d'alimentation du nourrisson et du jeune enfant dans la ville de Koutiala du 01 au 30 Avril 2021.

**Méthodes :** Une étude transversale et analytique par sondage en grappe a été réalisée chez les enfants de 6-59 mois avec interview des mères d'enfants de 0 à 23 mois résidants dans la ville de Koutiala. L'étude s'était déroulée en deux phases : une phase de collecte du 01 au 20 Avril 2021 et une phase consacrée à l'encodage, la saisie, l'épuration, l'analyse des données et la rédaction du 21 au 30 Avril 2021.

La saisie et l'analyse ont été faites aux logiciels Epi-Data et SPSS, le test de Chi<sup>2</sup> avec un seuil de signification  $p < 0,05$  à un intervalle de confiance à 95% a été utilisé.

**Résultats :** L'étude a montré que 47,9% des mères d'enfants étaient âgées de 15-25 ans. Près de 27,9% des mères d'enfants avaient un niveau d'instruction secondaire ; 62% étaient des ménagères et 87% étaient des femmes mariées. Près de 90,9% des mères avaient mis leurs enfants au sein dans les 30mn qui ont suivi l'accouchement contre 3,1% après 30mn. Près de 81,8% des mères d'enfants avaient une bonne connaissance sur la qualité du colostrum. Près de 88,3% des mères ont introduit l'alimentation de complément entre 6-23 mois de l'enfant contre 10,9 qui avaient introduit entre 0-5 mois. Seulement 24,5% des mères tétaient leurs enfants 8 fois et plus par jour ; 41,4% des mères ont allaité leurs enfants jusqu'à 2 ans contre 31% qui ont arrêté d'allaiter avant 2 ans.

**Mots clés :** Evaluation, Alimentation, Nourrisson, Koutiala

## SUMMARY

**Introduction/Objectives:** Due to the few studies carried out in Mali on the evaluation of infant and young child feeding practices, this study was carried out. Its objective was to evaluate infant and young child feeding practices in the city of Koutiala from April 01 to 30, 2021.

**Methods:** A cross-sectional and analytical study by cluster survey was carried out among children aged 6-59 months with interview of mothers of children aged 0 to 23 months residing in the city of Koutiala. The study took place in two phases: a collection phase from April 01 to 20, 2021 and a phase devoted to encoding, entry, purification, data analysis and writing from April 21 to 30, 2021.

Data entry and analysis were done using Epi-Data and SPSS software, the Chi2 test with a significance level  $p < 0.05$  at a 95% confidence interval was used.

**Results:** The study showed that 47.9% of mothers of children were aged 15-25. Nearly 27.9% of mothers of children had secondary education; 62% were housewives and 87% were married women. Nearly 90.9% of mothers had put their children to the breast within 30 minutes after delivery, compared to 3.1% after 30 minutes. Nearly 81.8% of mothers of children had a good knowledge of the quality of colostrum. Nearly 88.3% of mothers introduced complementary feeding between 6-23 months of the child's month against 10.9 who had introduced between 0-5 months. Only 24.5% of mothers breastfed their children 8 or more times a day; 41.4% of mothers breastfed their children until they were 2 years old, compared to 31% who stopped breastfeeding before they were 2 years old.

**Keywords:** Assessment, Feeding, Infants, Malnutrition

## **INTRODUCTION :**

Good nutrition is essential to ensure the healthy and optimal growth of children and the population's resistance to different diseases. During early childhood, adequate nutrition also helps ensure adequate motor and cognitive development [1].

In addition, the economic growth of a country depends, among other things, on well-nourished populations, capable of learning new skills and contributing to the development dynamics of their communities [1].

Malnutrition, especially during early childhood, affects vital functions, particularly cognitive ones, and contributes to a significant extent to the installation of poverty through obstacles linked to a low capacity for learning and productivity. In addition, it is estimated that more than a third of deaths of children under five are directly or indirectly attributable to malnutrition [1].

Nutrition is increasingly recognized as a basic pillar for the social and economic development of communities and a country [2].

According to Poirier, UNICEF Regional Director for West and Central Africa, "good nutrition for children, from their earliest days, protects them against disease and infection and promotes their recovery when they fall sick" [3]. Efforts to reduce malnutrition and mortality in infants and young children are essential to contribute to the achievement of the Sustainable Development Goals SDGs [2].

It is well recognized that the period between birth and two years of age is a critical time for the promotion of optimal growth, health and development [4].

While it is true that excess malnutrition is a growing problem, we should note that deficiency is the most widespread [5].

Globally in 2020, one in nine people still suffer from hunger or undernourishment, while 149 million children under the age of five are still stunted [3].

According to UNICEF and the WFP, 14.5 million cases of acute malnutrition in children under 5, including a third of its severe form, are expected in 2020 in West and Central Africa if adequate measures are not taken. Children suffering from severe acute malnutrition are more exposed to complications related to COVID-19 [3].

Mali has one of the highest infant and child mortality rates in the world, with 101 deaths per 1000 live births [6].

About 11% of children die before their 5th birthday, of which an estimated 45% of these deaths are attributable to malnutrition [7].

**OBJECTIVES OF THE STUDY:** was to evaluate infant and young child feeding practices in the city of Koutiala from April 01 to 30, 2021.

Research question is: What are the aspects that influence mothers of children aged 0-23 months in the city of Koutiala in the application of good practices in infant and young child feeding.

The research hypotheses are:

- The food and nutritional practices of mothers of children in Koutiala without proper awareness are a determining factor in the nutritional situation of early childhood
- Factors influencing infant and young child feeding practices are known and improved.

## **METHODS :**

This is a cross-sectional and analytical study by cluster survey was carried out among children aged 6-59 months with interview of mothers of children aged 0 to 23 months residing in the city of Koutiala from April 01 to 30 April 2021.

We proceeded by a random sampling (in cluster) through the enumeration for the identification of the target households of the survey with the calculation of a sampling step to retain the households which will be included in our survey (data source) and in each household selected for the survey the mother of a child was surveyed about the feeding of her infant and/or young child,

A questionnaire (Mom and children) with several administered components and in face-to-face mode made it possible to collect data with closed and open questions

The data entry activity was carried out using the EPI Data 3.1 software and the analysis was carried out with the SPSS version 21.0 computer software; The results are presented in tables and graphs; The significance level was  $P < 0.05$  and the confidence interval estimated at 95%. The agreement of the administrative and health authorities (Head doctor, Mayor, village chief/neighbourhood chief) was required to conduct the study. Free and informed consent was requested for participation in the survey.

**RESULTS :**

**Sociodemographic characteristics**

**Table I:** Distribution of mothers of children according to age

Age(year)	Effective	Percentage (%)
<b>15-25</b>	<b>184</b>	<b>47,9</b>
26-35	141	36,7
46 and plus	59	15,4
<b>Total</b>	<b>384</b>	<b>100</b>

In our study we have a predominance of women aged 15-25 years (47.9%) followed by the age group 26-35 years (36.7%).

**Table II:** Distribution of mothers of children according to level of education

Education Level	Effective	Percentage (%)
Primary	97	25,3
<b>Secondary</b>	<b>107</b>	<b>27,9</b>
University	41	10,7
Not educated	93	24,2
Literate	46	12,0

<b>Total</b>	<b>384</b>	<b>100</b>
--------------	------------	------------

In the study, 27.9% of women had secondary education.

**Table III:** Distribution of mothers of children according to occupation

<b>occupation</b>	<b>Effective</b>	<b>Percentage (%)</b>
<b>Household</b>	<b>238</b>	<b>62,0</b>
Trader	38	9,9
Pupil	27	7,0
Student	51	13,3
Official	14	3,6
Others	16	4,2
<b>Total</b>	<b>384</b>	<b>100</b>

More than half of the women surveyed were housewives (62%) followed by students (13.3%)

**Table IV:** Distribution of mothers of children according to marital status

<b>Marital status</b>	<b>Effective</b>	<b>Percentage (%)</b>
<b>Married</b>	<b>334</b>	<b>87</b>
Single	13	3,4
Widow	2	0,5
Brides	35	9,1
<b>Total</b>	<b>384</b>	<b>100</b>

Of the 384 women surveyed, 334 were married, i.e. 87%, and 35 brides, i.e. 9.1%.

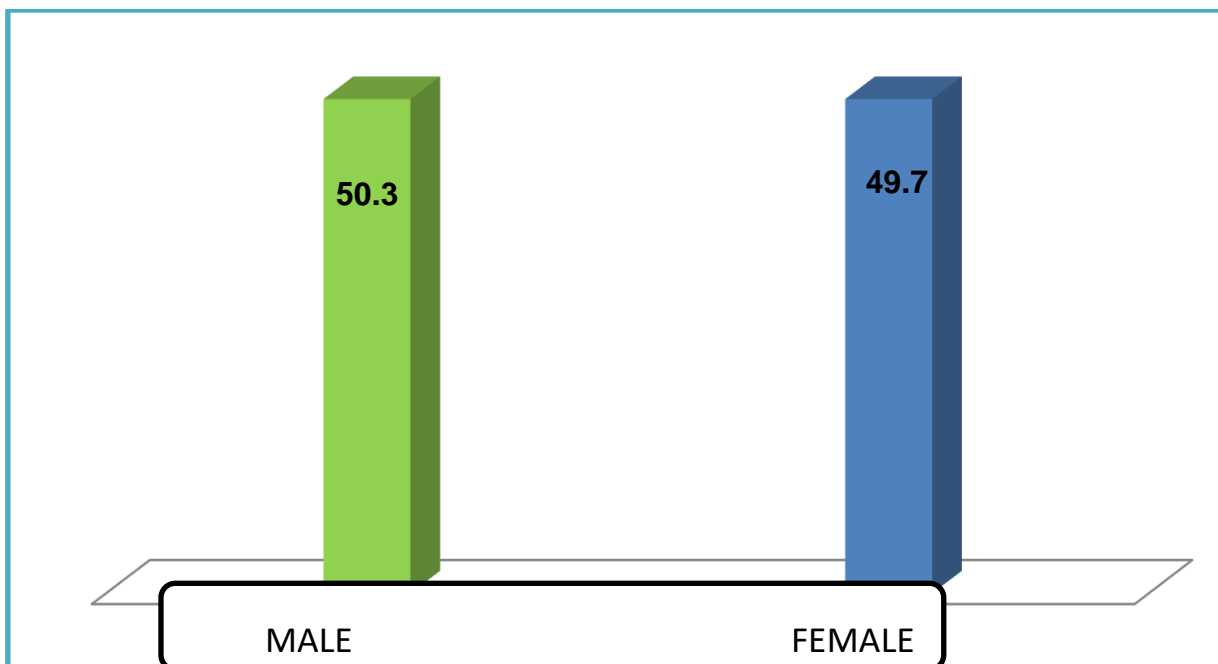


Figure 1: Distribution of children according to their child sex.

We have a slight predominance of the male sex (50.3%) compared to the female sex (49.7%) with a sex ratio of 1.01.

Mothers' knowledge of infant and young child feeding practices.

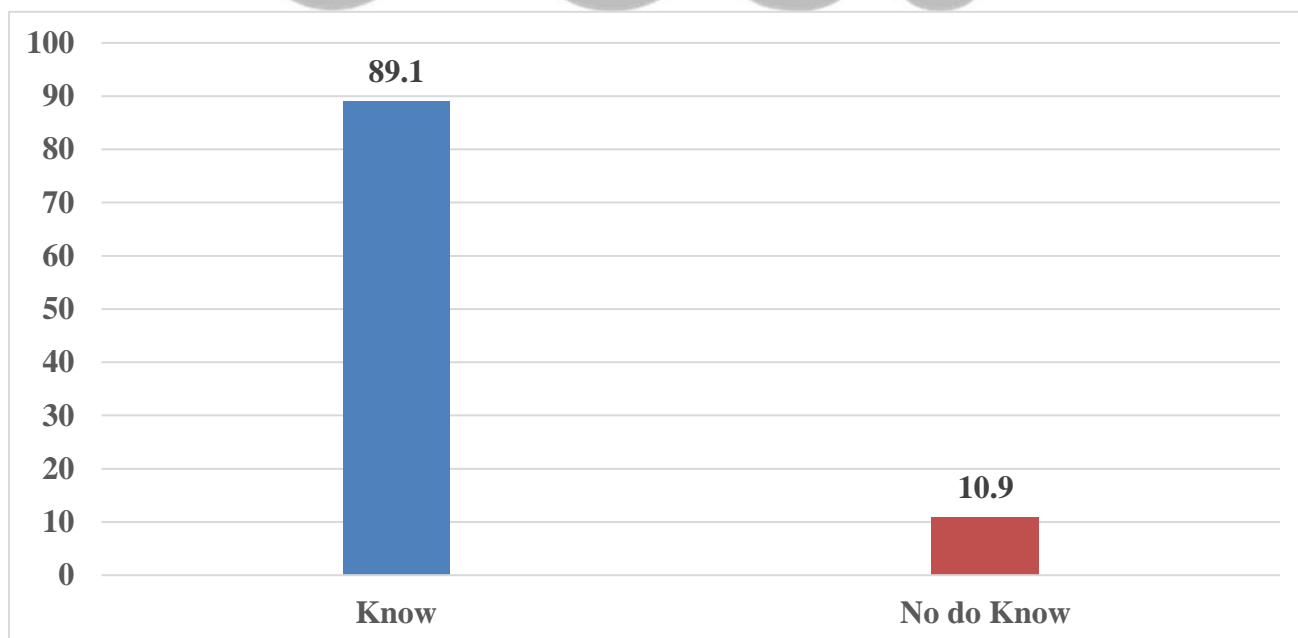


Figure 2 : Distribution of mothers according to their knowledge of the benefits of early initiation of breastfeeding

In our study 89.1% of mothers of children knew the benefits of early initiation of breastfeeding.

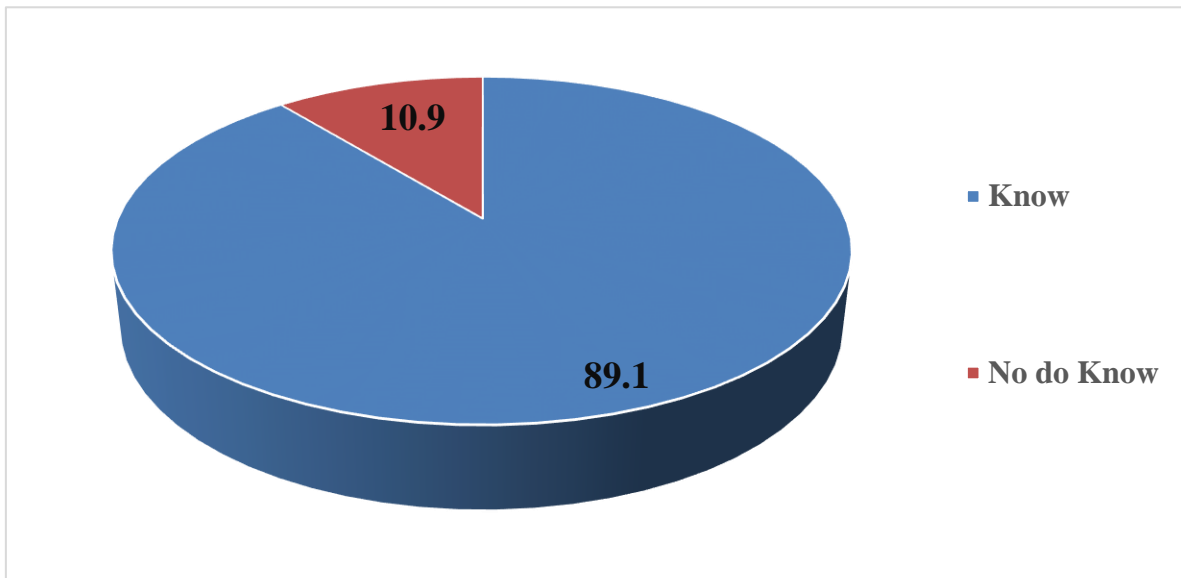


Figure 3: Distribution of mothers according to their knowledge of the definition of exclusive breastfeeding.

In our study, knowledge of the definition of breastfeeding was observed in 54.2% of mothers of children.

**Table V:** Distribution of mothers of children according to knowledge of the quality of colostrum.

Knowledge of the quality of colostrum	Effective	Percentage (%)
Good	314	81,8
Bad	30	7,8
Dirty	37	9,6
Forbidden by custom to give to babies	3	0,8
<b>Total</b>	<b>384</b>	<b>100</b>



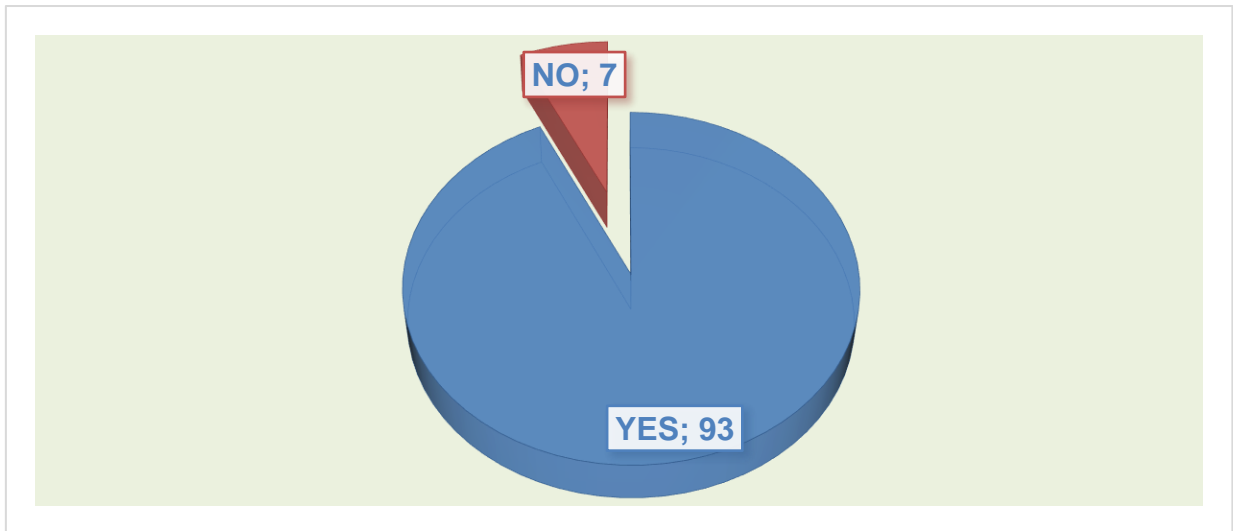
More than half of the mothers of children found the quality of the colostrum good against 9.6% who admitted that the colostrum was dirty.

**Feeding practices in infants and young children.**

**Table VI:** Distribution of mothers of children according to the time of breastfeeding after birth.

<b>The time of breastfeeding after birth.</b>	<b>Effective</b>	<b>Percentage (%)</b>
Immediately (less than 30 mins)	214	55.7
Within a minute of birth	115	29.9
Within 24 hours after delivery	31	8.1
More than 24 hours after birth	24	6.3
<b>Total</b>	<b>384</b>	<b>100</b>

In our study we found 55.7% of children were put to the breast within 30 minutes of delivery, and this figure is lower than that found by A. KONE (64%) in his study in Bamako.



**Figure 4:** Distribution of mothers of children according to the use of colostrum

**Table VII:** Distribution of mothers of children according to the number of suckles per day

Number	Effective	Percentage (%)
Less than 8 times	64	16.7
8 times	35	9.1
<b>More than 8 time</b>	<b>94</b>	<b>24.5</b>
Do not know	191	49.7
<b>Total</b>	<b>384</b>	<b>100</b>

In our study only 24.5% of women nursed their children more than 8 times a day.

**Table VIII:** Distribution of mothers of children according to the duration of breastfeeding

<b>Distribution of mothers of children according to the duration of breastfeeding</b>	<b>Effective</b>	<b>Percentage (%)</b>
Less than 2 years	119	31.0
<b>Up to 2 years</b>	<b>159</b>	<b>41.4</b>
More than 2 years	106	27.6
<b>Total</b>	<b>384</b>	<b>100</b>

The duration of breastfeeding was greater than 2 years in 41.4% of children in our study.

**Table IX:** Distribution of mothers of children by age of introduction of complementary feeding.

<b>Age</b>	<b>Effective</b>	<b>Percentage (%)</b>
Between 0 to 5 months	42	10.9
<b>Between 6 to 23 months</b>	<b>339</b>	<b>88.3</b>
Do not know	3	0.8
<b>Total</b>	<b>384</b>	<b>100</b>

More than half (88.3%) of the children were subjected to the complementary feeding regime between 6 and 23 months in our study

Relationship between infant and young child feeding knowledge and practices of mothers

**Table X:** Distribution of mothers of children according to knowledge and practices of mothers of children in terms of AME

KNOWLEDGE about exclusive breastfeeding	AME practice							
	breast milk only		Breast milk + other food		Milk maternal + water		Total	
	N	%	N	%	N	%	N	%
Yes	<b>191</b>	94,6	6	35,29	62	37,6	259	67,4
No	<b>11</b>	5,4	11	64,7	103	62,4	125	32,6
<b>Total</b>	<b>202</b>	<b>100</b>	<b>17</b>	<b>100</b>	<b>165</b>	<b>100</b>	<b>384</b>	<b>100</b>

In the study, 94.6% of women who practiced exclusive breastfeeding knew about exclusive breastfeeding compared to 5.4% who practiced did not know about breastfeeding. With a chi-square of 19.075 and a P of 0.004 (P<0.05)

**Table XI:** Distribution of mothers of children according to knowledge of the quality of colostrum and practice by mothers of children

Knowledge of colostrum quality	Pratice				Total	
	Pratice		don't practice			
	N	%	N	%	N	%
Good	296	<b>82,9</b>	18	66,7	314	81,8
Bad	23	<b>6,4</b>	7	25,9	30	7,8
Dirty	35	<b>9,8</b>	2	7,4	37	9,6
Prohibited by customs	3	<b>0,8</b>	0	0	3	0,8
<b>Total</b>	<b>357</b>	<b>100</b>	<b>27</b>	<b>100</b>	<b>384</b>	<b>100</b>

In the study 82.9% of women who gave colostrum to their children knew the quality of colostrum against 9.8% who thought it was dirty quality milk. With a chi-square=13.38 and P=0.04 lower than the P-Value (P<0.05) shows that there is a statistically significant link between knowledge of the quality of colostrum and its practice by mothers of children

**DISCUSSION :**

**Sociodemographic characteristics:**

In our study, the most represented age group was between 15 and 25 years old among mothers of children with 47.9%, this result is higher than that of K SANOGO [5] who found 40.6 % in his study in 2011 in the Point G district in commune III of the district of Bamako-Mali.

Nearly 27.9% of women had secondary education, which is lower than that of K. SANOGO [5] who found 29% in his study in 2011 in the Point G district in commune III of the district of Bamako-Mali.

Housewives represented nearly 62% in the study, this result is higher than that of M COULIBALY [12] who found 52.5% in his study in Sabalibougou (district of Bamako).

We find that married women represented 87% of the women surveyed in our study, which is higher than that found by M Coulibaly [12] in his study (65.85%) in 2019 in Sabalibougou (district of Bamako).

The age group 0-11 months was the most represented among the children of the mothers surveyed with 62% and the male sex with 50.3%

#### **Mothers' knowledge of infant and young child feeding practices.**

In our study, almost 55.7% of the mothers of children put the children to the breasts within 30 minutes of delivery and 89.1% experienced at least one benefit from the early initiation of the child. within; this result is higher than that found by K SANOGO [5] in his study in 2011 (41.3%) in the Point G neighborhood in commune III of the Bamako-Mali district. In the same study we find that 89.6% of mothers of children knew the advantage of breastfeeding. Nearly 54.2% of mothers of children knew the definition of exclusive breastfeeding, this result is higher than that of M COULIBALY [12] who found 37.5% in his study in 2019 in Sabalibougou (district of Bamako). And 78.9% mothers breastfed their children up to 2 years old, this result is higher than that of M COULIBALY [12] who found 55.83% in his study in 2019 in Sabalibougou (district of Bamako).

In the study, 56% of the mothers of children knew the age of introduction of the complementary food (6 months) in the children, this result is lower than that of K SANOGO [5] who found 92% in his study in the Point G neighborhood in commune III of the district of Bamako-Mali.

### **Feeding practices in infants and young children.**

In our study we found that 55.7% of the children were put to the breast within 30 minutes after delivery, and this figure is lower than that found by A. KONE (64%) in his study in commune III in Bamako (11), Mali. Only 24.5% of women breastfed their children more than 8 times a day, which is in line with the standards required by PMS (8 to 12 times per 24 hours). The duration of breastfeeding was more than 2 years in 41.4% of children. More than half (88.3%) of the children were subjected to the complementary feeding regime between 6 and 23 months in our study.

### **Relationship between infant and young child feeding knowledge and practices of mothers**

In the study, 94.6% of women who practiced exclusive breastfeeding knew about exclusive breastfeeding compared to 5.4% who practiced did not know about breastfeeding. With a chi-square at 19.075 and a P at 0.004 ( $P < 0.05$ ). This shows that there is a statistically significant link between the practice and knowledge of exclusive breastfeeding. In the study 82.9% of women who gave colostrum to their children knew the quality of colostrum against 9.8% who thought it was dirty quality milk. With a chi-square=13.38 and  $P=0.04$  lower than the P-Value ( $P < 0.05$ ) shows that there is a statistically significant link between knowledge of the quality of colostrum and its practice by mothers of children.

### **Conclusion :**

This study aimed to describe the feeding practices of infants and young children in Koutiala. The results show that the practice of infant and young child feeding is acceptable in the city of Koutiala, the early breastfeeding rate (within 30 minutes after delivery is 55.7%, the breastfeeding rate up to 2 years was 78.9%, 89.1% of mothers surveyed knew the benefits of

early initiation of breastfeeding Inadequate feeding practices refer not only to the quality and quantity of food given to children, but also at the stages of their introduction, hence the need to strengthen actions in favor of infant and young child feeding practices and this strengthening requires the involvement of several sectors, namely health, the promotion of women, children and families.

#### **REFERENCE :**

1. Mali-Online. Enquête nutritionnelle smart <https://mali-online.net/enquete-nutritionnelle-smart2020.p19> ;
2. INSTAT. Enquête Nationale Nutritionnelle Anthropométrique et de Mortalité Rétrospective Mali (SMART) [. Institut National de la Statistique du Mali |INSTAT.2019 p 18 <https://www.instat-mali.org/fr/publications/enquete-nationale-nutritionnelle-anthropometrique-et-de-mortalite-retrospective-mali-smart> ;
3. UNICEF. L'État de la sécurité alimentaire et de la nutrition dans le monde 2020. IFAD 2020 p40 <https://www.ifad.org/fr/web/knowledge/publication/asset/42000691>.
4. Rapport UNICEF. La situation des enfants dans le monde 2019 : enfants, alimentation et nutrition. SUN. 2019 .60 P : <https://scalingupnutrition.org/fr/news/la-situation-des-enfants-dans-le-monde-2019-enfants-alimentation-et-nutrition/> ;
5. K. Sanogo. Connaissances et Pratiques de mères en matière d'alimentation de la petite enfance au village du Point G en commune III du district de Bamako 2011p1,3,8,9,10,11 ;
- 6.FR358. EDS MALI. 2018 p: 643 <https://dhsprogram.com/pubs/pdf/FR358/FR358.pdf>;
7. LANCET 2013. Nutrition and health in women, children, and adolescent girls 2013 P 25 <https://thousanddays.org/resource/nutrition-and-health-in-women-children-and-adolescent-girls/> ;



**8. S. Sidibé.**Prise en Charge de la Malnutrition Aigüe Chez les Enfants de 0-59 mois Dans La Commune VI 2019 p :4 ;

**9. INSTAT.** Enquête Nutritionnelle Anthropométrique Et De Mortalité Rétrospective ; Décembre 2020 ; 10e Edition ; Mali

**10. M. Coulibaly.** Connaissances, attitudes et pratiques des mères d'enfant par rapport à l'alimentation de la petite enfance dans l'aire de santé Sabalibougou.

Master INFSS- Bamako Mémoire, 2019, p9

**11. A. KONE :** Connaissances attitudes et pratiques des mères par rapport à la nutrition des enfants de moins de 5 ans dans la commune III, Bamako Mémoire, 2015, P24.

© GSJ