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Early Initiation of Breastfeeding in the Reference Health Center: Maternal Practices and Knowledge in Bamako, Mali

Authors:
Inhissa Ben BENGALY[1], Issa Souleymane GOÏTA[2.4], Maimouna TRAORE[1,6], Aboubakary KONATE[5], Famouke CAMARA[2], Bakary Sayon KEITA[1,6], Aminata FAMANTA[1], Fatoumata DICKO TOURE [3.4]

Affiliations:
[1]National Institute of Public Health, Department of Emergency Health Operations Public.
[2]Faculty of Medicine and Odontostomatology (FMOS), University of Sciences, Techniques and Technologies of Bamako (USTTB), Mali.
[3]Gabriel TOURE University Hospital.
[4]Department of Family Medicine and Community Medicine, FMOS/USTTB, Mali.
[5]National Office for Reproductive Health.
[6]National Center for Scientific and Technological Research (CNRST), Bamako, Mali

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Abstract

Summary:

Introduction: Early breastfeeding, defined as the initiation of breastfeeding within one hour of birth, is an essential intervention for neonatal survival.
The objective and purpose of this study was to evaluate the early initiation of breastfeeding of newborns in the gynecology-obstetrics department of the reference health center of commune VI of the district of Bamako.

Materials and methods A descriptive cross-sectional study was conducted from October 1 to November 30, 2022 **,** at the Reference Health Center (CSRef) of Commune VI. It included 300 hospitalized postpartum mothers who met the inclusion criteria. Data were collected through direct interviews using a structured questionnaire and then analyzed with Epi Info 3.5.32011. Adherence to ethical principles, including informed consent and participant anonymity, was guaranteed.

Results: The majority of mothers (54%) were between 20 and 29 years old, and 88.45% were married. The study showed that 89.44% of mothers gave breast milk as their first food, while 10.56% used alternatives (date juice: 46.89%, honey: 40.63%). Midwives were the primary

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source of information (36.3%). Although 97.65% of mothers were aware of the benefits of early breastfeeding, only 34.56% knew the recommended duration (less than one hour).
Conclusion: Early breastfeeding is widely practiced in Commune VI, however knowledge about the optimal timing and exclusion of alternatives remains insufficient.

Keywords: Early initiation, breastfeeding, practices, knowledge, Bamako, Mali

Introduction:

Early breastfeeding involves offering the breast to the newborn within the first hour after birth [1] . The WHO highlights the many benefits of early breastfeeding for the newborn; however, it is generally accepted that without nipple stimulation, lactation typically ceases within two weeks [1] . Indeed, neonatal mortality is highest during the first 24 hours of life. The main causes are infections, prematurity, and respiratory distress [2] . Early and exclusive breastfeeding is an essential intervention for improving neonatal survival [2] . The WHO recommends initiating breastfeeding early to facilitate its establishment, promote mother-child bonding, and prevent the risks of neonatal hypoglycemia and hypothermia [3] . Skin-to-skin contact at birth facilitates the establishment and exclusivity of breastfeeding [3] . In a rural area of Ghana, a study showed that early breastfeeding, initiated within the first hour after birth, could prevent 22% of neonatal deaths, and that breastfeeding initiated on the first day could prevent 16% [4] . Several mechanisms explaining this reduction in mortality have been proposed, including early stimulation of the immune system through exposure to the high levels of immunoglobulins and lymphocytes present in colostrum [4] . In addition to reducing neonatal mortality, early breastfeeding offers benefits for the mother, as early stimulation of lactation is linked to the secretion of oxytocin, which decreases the risk of postpartum hemorrhage [4] .

Analysis of the literature has shown that several factors and hospital practices can constitute barriers to early breastfeeding [4] . Indeed, even in hospitals labeled "baby-friendly," studies have demonstrated that women who give birth by cesarean section experience a significant delay in breastfeeding compared to women who give birth vaginally [4] .

The mother needs adequate support and guidance on how to position and feed her newborn [5].
“Breast milk combines three qualities ideally sought after elsewhere: the lowest price, the highest quality and the most attractive presentation” [6].

Getting informed before birth: This is the ideal time to learn about basic breastfeeding practices and to address topics such as misconceptions, inhibitions and difficulties [7].

To increase the rate of initiation, breastfeeding and its duration, it is recommended that health professionals support mothers in their plans, that the message promoting breastfeeding include messages for partners and that breastfeeding on demand without a fixed interval between feedings is promoted [8].

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Inadequate breastfeeding practices are responsible for approximately 1.4 million child deaths worldwide [9].
Few studies have assessed mothers' knowledge of early breastfeeding in the health district of Commune VI in Bamako. It is in this context that the present study was initiated, with the aim of contributing to the improvement of early breastfeeding of newborns and mothers' knowledge.

Materials and methods

Type, period and framework of study:

This was a descriptive and cross-sectional study, conducted from October 1st to November 30th, 2022 within the gynecology-obstetrics department of the Reference Health Center (CSRef) of Commune VI of the district of Bamako, Mali.

Population:

The study population consisted of mothers hospitalized in postpartum care (days 1 to 3) who had given birth to one or more live newborns.

Inclusion criteria: Mothers hospitalized in postpartum care, who gave birth to a live newborn and gave their informed consent.

Exclusion criteria: Mothers with a serious medical complication preventing the interview from taking place, or newborns admitted to intensive care/neonatal resuscitation immediately.

Variables studied:

The main variables analyzed were:

- Age
- Sex
- Marital status
- Education level
- Occupation
- breastfeeding practices
- Alternatives mentioned
- Awareness
- Sources of information

Sampling:

We opted for a non-probability quota sampling method. The individuals surveyed were postpartum women, selected according to predefined inclusion and exclusion criteria, until the fixed quota size was reached.

Sample size:

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The sample size was calculated using the following formula **:**
($n = t^2.p.(1-p)/m^2$)

The parameters are as follows:

- **p** (expected proportion): 73.3% (i.e. 0.733), according to a previous study carried out in Mali [5] ;
- **t** (confidence level): 1.96 (corresponding to a risk of error α=5% in the normal distribution table).
- **m** (margin of precision): 5% (i.e. (0.05).

$n = (1.96)^2.0.733.(1-0.733)/(0.05)^2 = 300$

$n = 300$

Our sample consisted of 300 women, following childbirth.

Data collection tool:

The data were collected by interviewing mothers of newborns, using structured questionnaires administered during direct interviews, supplemented by data from the mother's medical record.

Analysis:
The data was entered and analyzed using Epi Info version 3.5.3.

Study procedure: The study was conducted in four phases.

The first phase:
The aim was to make contact with women who had given birth in the postpartum period, greeting them and obtaining their consent to participate in the study.

The second phase:
This involved filling out survey forms with answers to questionnaires at the bedside of women in labour for a few days, until a sample of 300 people was obtained.

The third phase:
This involved entering the survey form data into EPI INFO - version 3.5.3 and analyzing the results.

Fourth phase:
In this phase, we discussed the results of the survey and drew conclusions in order to write the scientific manuscript.

Ethical considerations:
Informed consent was obtained from each participant, and anonymity and confidentiality were guaranteed.

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Results:

Sociodemographic characteristics of the 300 participants:

The survey included 300 mothers of children hospitalized postpartum at the maternity ward of the reference health center in Commune VI, Bamako district. The 20-29 age group was the most represented (53.2%), with a maximum age of 40 years and a mean age of 23 ± 8 years.
The majority of mothers were married (88.45%) and had not received formal education (57.1%). Housewives 71.29%, female traders 18.81%, civil servants 5.94% and others 3.96% **(Table 1).**

2. Pathologies associated with pregnancy:

Maternal health and associated pathologies

The vast majority of pregnant women in the sample (83.16%) had no particular pathology. For the remaining 16.84%, the most frequent complications were arterial hypertension (8.08%), anemia (3.70%), diabetes and sickle cell disease (2.36% and 1.68%) of the sample **(Table 2).**

Gender parity profile of women who have given birth
The study showed a diverse distribution according to the number of previous deliveries: multiparous women constituted the largest group in the sample (36.31%), followed by pauciparous women (27.06%), primiparous women (23.43%) and grand multiparous women (13.2%). **(Table 3).**

Previous breastfeeding experience
Analysis of breastfeeding history revealed that 84.07% of women had experienced no problems in their previous breastfeeding experiences. Among the 15.93% who had experienced difficulties, breast pain was the most frequent (61.75%), followed by breast engorgement (25.5%) and breast abscesses (2.1%) **(Figure 1)** .

Clinical status of newborns
The neonatal outcome was positive in this study, with 99.32% of newborns healthy at birth and only 0.68% of cases having suffered perinatal anoxia.

3. Knowledge about breastfeeding

More than half of the patients (54.79%) reported having received no information on breastfeeding. Among those who had been informed, the most frequently cited source of information was the midwife (36.3%), followed by obstetric nurses (28.89%), the media (17.04%), on the street (11.85%), gynecologists (3.70%) and general practitioners (2.22%). **(Table 4).**

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4. Knowledge about early breastfeeding:

A large majority (89.44%) believed that breastfeeding was the first food to give a child after birth. Despite this theoretical consensus, among the alternatives cited when breastfeeding was not possible immediately, date juice (46.89%) and honey (40.63%) predominated over saline solution (12.5%).

Mothers were more aware of the importance of immediate breastfeeding after birth (97.65%), while only (2.35%) thought the opposite. **(Figure 2).**

Among the benefits identified, child protection was the most represented (64.74%), followed by growth (27.66%) and other benefits (7.6%). **(Table 5).**

More than half of the participants (53.36%) did not give a precise answer on the timing of initiation, (34.56%) correctly identified that the child should be put to the breast less than one hour after delivery and a minority of women cited a delay of 2 hours (9.4%) or 3 hours (2.68%). **(Figure 3) .**

Table 1: Sociodemographic characteristics of participants (n = 300)

Variable modalities	Frequency (n)	Percentage (%)
Age range		
15-19 years old	68	22.7
20-29 years old	160	53.2
≥ 30 years old	72	24.1
Marital status		
Bride	265	88.45
Bachelor	23	7.59
Divorcee	8	2.64
Widow	4	1.32
Education level		
Not enrolled in school	170	57.1
Primary	63	20.79
Secondary	44	14.52
Superior	23	7.59
The profession		
Housewife	213	71.29
Merchant	57	18.81

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Official	18	5.94
Others	12	3.96

Table 2: Distribution according to pregnancy-related pathology

Variables	**Frequency (n)**	**Percentage (%)**
pregnancy-related illnesses		
None	250	83.16
HTA	24	8.08
Anemia	11	3.7
Diabetes	7	2.36
Sickle cell disease	5	1.68
Stomach problems	3	1.01
Clinical status of newborns at birth		
Healthy	298	99.32
Perinatal anoxia	2	0.68

Table 3: Distribution of women who gave birth according to parity

Variables	**Frequency (n)**	**Percentage (%)**
Gender parity among women giving birth		
multiparous	107	36.31
Pauci pare	82	27.06
Young mom	71	23.43
Large multiparous woman	40	13.2

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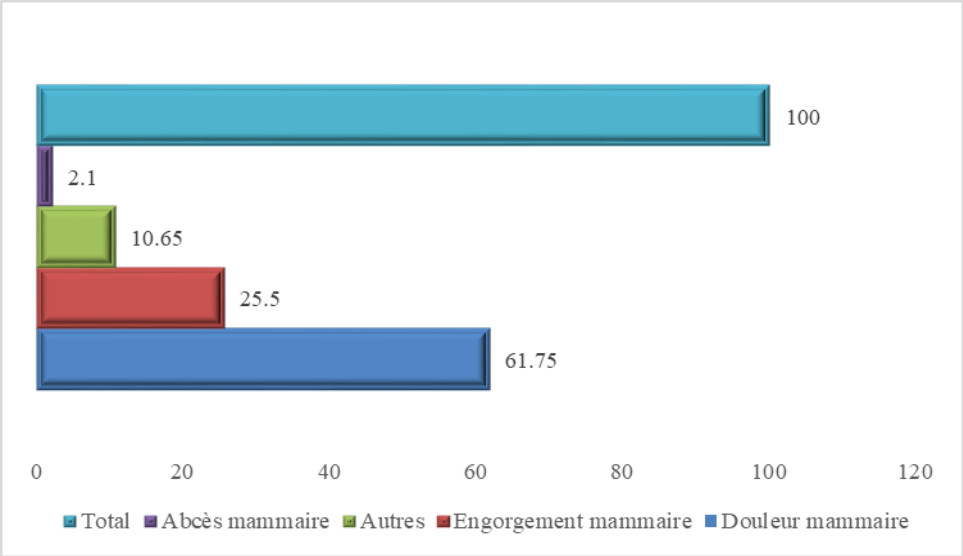


Figure 1: Distribution according to the presence or absence of problems related to previous breastfeeding and the types of problems encountered during this breastfeeding.

Table 4: Reception and source of information breastfeeding **(n = 300)**

Variables	Frequency (n)	Percentage (%)
Receive information about breastfeeding		
NO	163	54.79
YES	137	45.21
The method of acquiring information on breastfeeding		
midwife	49	36.3
obstetric nurse	41	28.89
Media	23	17.04
Street	16	11.85
Gynecologist-Obstetrician	5	3.7
Doctor	3	2.22

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Table 5: Food type, alternatives and advantages

the types of food given first after delivery and the recommended first-choice alternatives		
Yes (89.44%)	**No (10.56%)**	
	The top-choice alternatives mentioned	**Percentage**
	date juice	46.89
	Dear	40.63
	physiological saline solution	12.5
	The top-choice alternatives mentioned	Percentage
knowledge about the types of benefits that early breastfeeding provides to the newborn		
YES (97.65%)	NO (2.35%)	
	Types of services	**Percentage**
	Ensuring the protection of the child	64.74
	Allows the child to grow up quickly	27.66
	Others	7.6

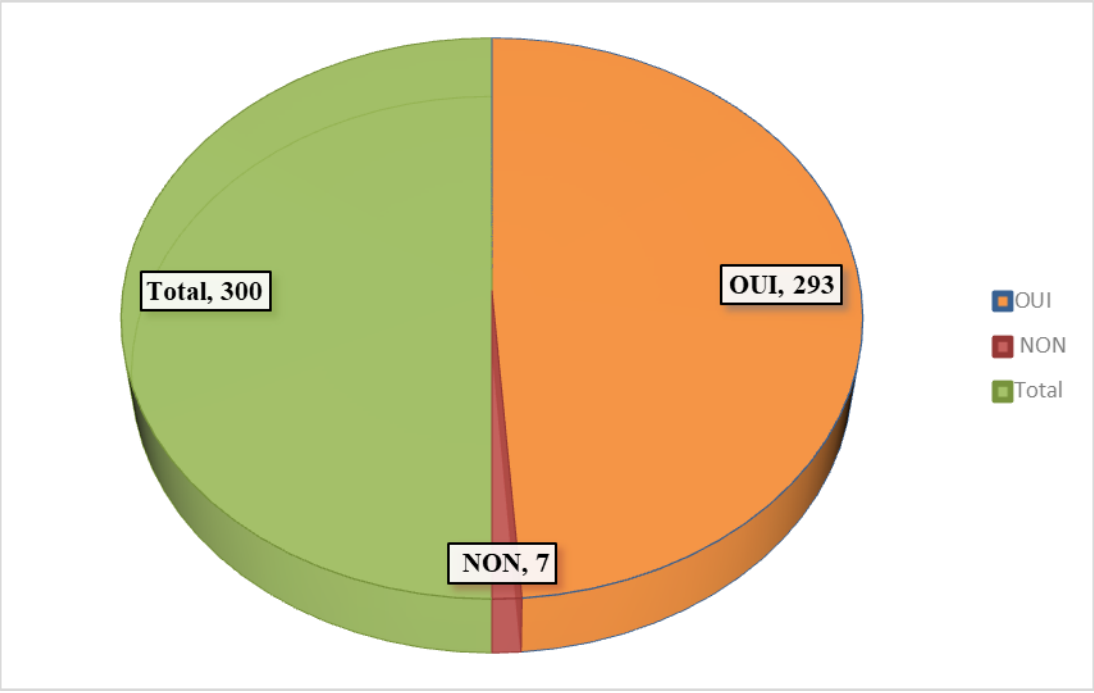


Figure 2: Distribution according to knowledge of the benefits of early breastfeeding

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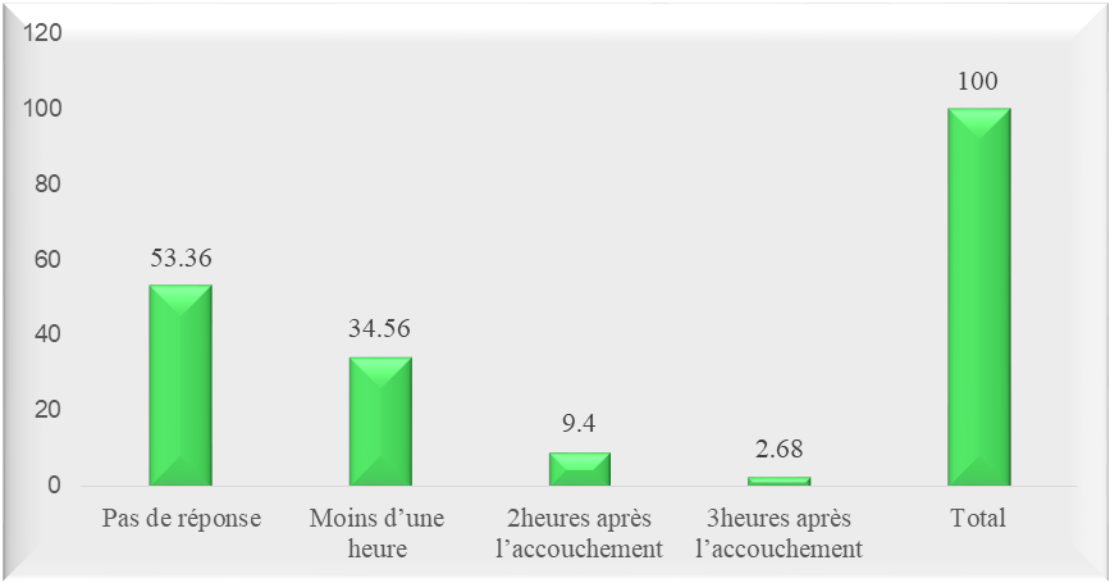


Figure 3: Distribution according to knowledge about the appropriate time to start breastfeeding after childbirth

Discussion:

This prospective and descriptive study conducted with 300 women who gave birth at the CSRéf of Commune VI of Bamako highlighted important results despite some difficulties related to the survey method (interviews with tired or unresponsive mothers).

Sociodemographic characteristics:

The majority of mothers were aged between 20 and 29 years (53.2%), with a maximum age of 40 years and an average of 23 years. This result is similar to that of SIDIBE AK et al., whose most represented age group was between 20 and 29 years (10) .

Almost all individuals in the sample were married (88.5%), this result is lower than that of TAOUFIKI L in Rabat where 100% were married (4) , this difference could be explained by the rarity of births outside marriage in Morocco.

More than half were not in school (57.1%), this result differs from that of DIARRA I et al in Benin with 48.3% who were not in school (11) , this could be explained by a higher school enrollment rate in Benin compared to Mali.

More than half of our respondents were housewives (71.29%), this result is close to that of DIARRA I et al with 81.4% (11), this difference could be explained by the size of their samples being larger than ours.

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Perinatal history:

Hypertension was the most frequent pregnancy pathology (8.08%), our result is closer to that of TAOUFIKI L with 6% of cases of HTA (4) .

Multiparous women were the most represented (36.3%), unlike TAOUFIKI L in Morocco where primiparous women predominated with 43.3% (4) this could be explained by a higher birth rate in Mali.

In our study, most (84%) had not experienced any problems during previous breastfeeding; in case of difficulty, breast pain was most often reported (61.8%), this result differs from that of DIARRA A where breast pain represented 38.5% (12) .

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In our study, the overall health of the newborns was good (99.32% healthy). This result is comparable to that of DIAWARA Y, which was 95.6% of cases (13) .

Knowledge about breastfeeding:

Less than half of the mothers (45.2%) had received information on breastfeeding, primarily from midwives (36.3%). This rate is low compared to that of the DIARRA A study (12) , which was 78.3%. This difference could be explained by the presence of numerous media outlets and their involvement in raising public awareness, as well as by the role of obstetric nurses in postpartum care in informing new mothers.

Knowledge about early breastfeeding:

Breast milk was the first food given by 89.4% of mothers, a result similar to that of Sanogo K who found 86.6% (14) .

As an alternative, date juice was cited by almost half (46.9%), a result close to that of Sanogo K which was 51% (14) .

The vast majority (97.7%) recognized the benefits of early breastfeeding, a result significantly higher than that of the DIAWARA Y study in Niono, which obtained 60% (13) . This difference could be explained by better information on breastfeeding in the city center.

Child protection was cited as a major advantage (64.74%), a higher rate than that of GORO A in KORO (39.4%) (15). This difference could be explained, on the one hand, by a lower level of information in remote areas and, on the other hand, by the presence of other advantages linked to their customs.

However, more than half (53.4%) did not know the ideal time for initiation; only 34.56% mentioned breastfeeding within the hour following delivery, this rate is higher than that of LAMYAE M who found 6.7% within the hour following delivery in Morocco (6), this difference

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could be explained by the fact that the practice of early breastfeeding is more widespread in West African countries and in the world.

In summary, the study shows that mothers were well aware of the benefits of early breastfeeding but lacked precise information on the ideal time to start. Socioeconomic factors (low education level, stay-at-home motherhood) and cultural habits influence practices. Greater awareness, particularly through the media and healthcare professionals, appears necessary to promote the adoption of this beneficial practice.

Conclusion:

Early initiation of breastfeeding remains a global priority, and ongoing efforts are being made to strengthen this practice. This study, conducted with 300 mothers at the CSREF (Community Health and Family Resource Center) in Commune VI, revealed that 34.56% initiated breastfeeding within the first hour after birth, while 45.21% had access to breastfeeding information, primarily provided by midwives (36.3%). Nearly 97.65% recognized the benefits of breastfeeding, with protecting the newborn being the main reason cited (64.74%).

However, certain factors, such as cesarean sections, limit its application. Strengthening the information system therefore appears essential for its improvement.

Recommendations:

- To train and raise awareness among healthcare staff, particularly midwives and obstetric nurses.
- Intensify health education campaigns targeting mothers and families.
- Systematically integrate the promotion of early breastfeeding into prenatal and postnatal consultations.

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Conflicts of interest:

The authors declare that they have no conflict of interest.

Author contributions:

- Famouke Camara was responsible for data collection.
- Maimouna Traoré was responsible for writing the article.
- Issa Souleymane Goïta supervised the development of the protocol, the collection of data, the analysis and the final drafting of the manuscript.
- Inhissa Ben Bengaly supervised the development of the protocol, data collection, analysis, and final drafting of the article.

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