



Original Article

Determinants of Breastfeeding Initiation Among Newly Delivered Women in Yaounde, Cameroon: a Cross-Sectional Survey

Déterminants de la mise au sein précoce chez les mères en post partum : une étude transversale à Yaoundé

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ABSTRACT

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Background. Exclusive breastfeeding is essential for the mother's wellbeing, fundamental for the newborn's development and indispensable for the reinforcement of bonding. According to the WHO, breastfeeding after childbirth should be initiated within the first 30 minutes following delivery. Early breastfeeding contributes to the reduction of neonatal morbidity and mortality but is oftentimes not respected. The objective of this survey was to determine the factors associated with breastfeeding initiation. **Methods.** We conducted a cross-sectional study at the Yaoundé Gynaeco-Obstetric and Paediatric Hospital from December 2018 to May 2019. We included women with livebirth infants > 2000g, without breastfeeding contraindications during the first hour of immediate postpartum. **Results.** We enrolled 250 mothers, mostly from the Centre region (40%), with a secondary school education level in 43%. The vaginal route was the main mode of delivery (70%). The newborns had a mean gestational age of 38.4 ± 1.6 weeks with a male predominance. The average time of breastfeeding initiation was 120 minutes and only 40% of mothers had put the baby to breast within the first hour after birth. The factors associated with delayed breastfeeding initiation were delivery by caesarean section and the Centre region as origin or place of residence. **Conclusion.** The delay in the early initiation of breastfeeding was long, and influenced by a number of risk factors related to maternal, neonatal and interventional determinants. This may be reduced by the reinforcement of education and antenatal care in order to prevent complications and hence the delay of breastfeeding initiation.

RÉSUMÉ

Introduction. L'allaitement exclusif est fondamental pour l'état de santé et le bon développement de la mère et de l'enfant. Selon l'OMS, la mise au sein après l'accouchement doit se faire dans les 30 minutes suivant la naissance. La mise au sein précoce contribue à la réduction de la morbi-mortalité néonatale et n'est pas toujours respectée. **Objectifs.** L'objectif était de déterminer les facteurs influençant la mise au sein précoce. **Moyens et méthodes :** Nous avons mené une étude transversale dans les services de gynécologie et obstétrique et de néonatalogie, allant du 1^{er} décembre 2018 au 31 mai 2019. Nous avons incluse toutes les mères vivantes ayant donné naissance à un nouveau-né à terme ou prématuré > 2000g, sans contre-indication à la mise au sein, après la première heure post partum. **Résultats.** Nous avons enrôlé 250 mères, originaires de la région du centre dans 44,40% et d'un niveau d'éducation secondaire dans 43%. La voie basse était la principale voie d'accouchement (70% des cas). Les nouveau-nés avaient un âge gestationnel moyen de $38,4 \pm 1,6$ SA et un poids de naissance moyen de $3168,6 \pm 508,7$ g ; une prédominance masculine (sex ratio de 1,29). Le délai médian de mise au sein était de 120 minutes et seulement 40% des mères avaient mis le bébé au sein dans l'heure suivant la naissance. Les facteurs associés au retard à la mise au sein étaient l'accouchement par césarienne et l'appartenance à la région du Centre. **Conclusion.** Le délai de mise au sein dans notre série était très long après la naissance, et il était influencé par l'appartenance à la région du Centre et l'accouchement par césarienne.

INTRODUCTION

Breastfeeding is a natural process required for the growth and development of the baby. Breastmilk contains essential nutrients such as growth and immunological factors which are necessary for the neonate's development [1]. In effect, colostrum is considered as the first vaccine, a perfect food for the

newborn and is recommended within 30 minutes to one hour after birth [1]. The Early Initiation of breastfeeding (EIBF) has several benefits including the prevention of hypoglycemia and hypothermia, the early release of meconium and thus contributes to a certain measure for the prevention of neonatal jaundice. There is substantial

evidence that breastfeeding decreases neonatal mortality, morbidity, sepsis-related deaths, diarrhea and respiratory infections in neonates and children [2,3]. Furthermore, it has a protective effect against obesity and other chronic diseases in the long-term [2,3]. However, a newborn may fully enjoy these benefits only when breastfeeding is started early enough and given exclusively, at least during the first six months of life [3]. It has been reported that institutional or hospital delivery and care givers' support are the major cues to early initiation of breastfeeding [4–6]. A number of research studies advocate the fact that breastfeeding largely contributed to the reduction of about 804.000 deaths (11.6%) among under-five children worldwide in 2011 [7,8]. Countries like India during that period, had made it mandatory to keep the mother and baby in the hospital for at least 48 hours in case of normal delivery and seven days in case of caesarean section [9]. This had a significant impact on the enhancement of breastfeeding practices, as the mother and baby had to spend some days in the hospital under the watchful monitoring of the health staff. In Cameroon, according to the 2018 Demographic and Health Survey, 39.7% infants under 5 months of age were described as exclusively breastfed, though no further information about the time of breastfeeding initiation was given [10]. In sub-Saharan Africa in general, and in Cameroon in particular, data over the delay of breastfeeding at birth, as well as associated factors are scarce. This is why we conducted a study, with as main objective to determine the factors influencing early breastfeeding among newly delivered women in Yaoundé, capital city of Cameroon.

METHODS

We conducted a cross-sectional and analytical study over a six-month period from December 2018 to May 2020. The survey took place at the Yaoundé Gynaeco-Obstetric and Paediatric Hospital which is a University Teaching Hospital in Cameroon. We included all newly delivered women with livebirth infants weighing more than 2000g, with no contraindication to breastfeeding and who consented to participate in our study. Mothers with sick newborns unable to breastfeed or who had digestive disorders preventing breastfeeding, as well as mothers who chose breast-milk substitute feeding were excluded. The enrolled mothers were observed during the first hour after delivery to detect those that would spontaneously practice timely breastfeeding in conformity WHO's recommendations. Sampling was consecutive. The sources of information were mothers and medical records. A pretested questionnaire was administered and the variables sought were: age, education level, parity, region of origin, gestational age, route of delivery, birth weight, sex of the baby, birth status and time to breastfeed. Data were recorded and analyzed using CS Pro version 6.2 and SPSS version 20.0. Chi-square testing was used to establish statistical associations between the variables. The P value < 0.05 was used to characterize any statistically significant results. The Odds ratio with its 95% confidence interval was used to establish the risk relationships.

The various operational terms used were early breastfeeding, defined here as the initiation of the process within the first hour following delivery. Considerations such as baby clothing was not taken into account, however, skin-to-skin contact was encouraged and noted. Breastfeeding quantification based on measurable criteria such as the child's vigor in suckling, the type of arousal and the presence of swallowing were used for qualifying the act as successful or not. The early contact was used to describe any physical interaction between the mother and the newborn occurring within the first hour of life. Therefore, skin-to-skin contact and early breastfeeding were included. In effect, early skin-to-skin contact ideally begins immediately after birth and consists in placing the naked newborn on the mother's bare chest. This practice of intimate contact during the first minutes after birth is thought to facilitate attachment or bonding and interactions between mother and baby through sensory stimuli such as touch, warmth and smell. Early skin-to-skin contact usually allows for the newborn to find and hold the mother's breast by itself.

Ethical consideration

Ethical clearances from the Institutional Ethics and Research Committee of the Faculty of Medicine and Biomedical sciences of the University of Yaoundé 1 and the Yaoundé Gynaeco-Obstetric and Paediatric Hospital were obtained before the beginning of the survey. The data collected was kept strictly confidential and used only for the purposes of the study.

RESULTS

We enrolled 250 women who met the inclusion criteria during the study period.

Socio-demographic characteristics

The average age was 27.9 +/- 6.2 years. Recruited women were mostly housewives, with a secondary school education level, and mainly originating from the Centre region as shown in **Table 1**.

Table I: Socio-demographic characteristics

Variables	N	Percentages (%)
Profession		
Housewives	97	38.8
Civil servant	43	17.2
Student	38	15.2
Other	72	28.8
Region of Origin (n = 250)		
Centre	110	44.6
West	68	27.2
Other	72	28.2
Level of education		
Out of school	14	5.6
Primary	28	11.2
Secondary	107	42.8
University	101	40.4

Perinatal characteristics

In our series, 36 mothers had a pathology associated with pregnancy among which 18 cases of HIV infection (7.2%), 11 cases of hypertension (4.4%), 5 cases of hepatitis B (2%), 1 case of tuberculosis (0.4%). Mean

gestational age was 38.4 ± 1.6 ; mean birth weight was 3168.6 ± 508.7 . Vaginal delivery was the main route of delivery and 96% of the newborns had a good adaptation to extra-uterine life. Post-partum was generally uncomplicated and 24% of babies were admitted to the neonatology unit with the main diagnosis being the risk of infection (**Table 2**).

Table II: Perinatal characteristics

Variables	N	Percentages (%)
Mode of delivery		
Lower route	172	68.8
Cesarian section	78	31.2
Post – Partum		
Simple	230	92
Complicated	20	8
Gestational age		
< 37	21	8.4
[37 – 42[222	88.8
≥ 42	7	2.8
Birthweight		
< 2500g	18	7.2
[2500 – 4000[216	86.4
≥ 4000 g	16	6.4
Diagnosis on entry		
Risk of infection	15	25
Neonatal infection	14	23.3
Neonatal jaundice	14	23.3
Mild birth asphyxia	4	6.7
Other	13	21.7

Delay to initiate breastfeeding

The average time to start breastfeeding after delivery in our series was 120 minutes (2 hours). Only 38.8% of mothers had put the baby to breast within one hour of delivery (**Table 3**).

Factors determining the initiation of breastfeeding

Primary education level, Centre region, Caesarean delivery, HIV infection, gestational age below 37 weeks of pregnancy, low birthweight and neonatal infection at birth were associated with delay in breastfeeding after bivariate analysis. Logistic regression isolated the Centre region as origin, and Caesarean delivery as independent predictors of delayed initiation of breastfeeding (Table 4 and 5).

Table III: Distribution according to breastfeeding initiation

Time of breastfeeding initiation (minutes)	N	Percentage (%)
> 60	153	61.2
≤ 60	97	38.8
< 30	49	19.6
[30 – 60]	48	19.2

DISCUSSION

Early and timely breastfeeding may as well be considered as the percentage of newly born infant who are breastfed within the first hour following delivery. The results from this survey show a low level of Early Initiation of Breastfeeding (EIBF) in our context at 40%, which is quite lower than values obtained in the majority of developed countries such as Australia, where values as high as 98% have been reported [11]. This is also lower than incidences reported in countries such as Saudi Arabia (77.8%), Nepal (66.4%) and in some African developing countries such as Ethiopia (73.1%), though our sample size was relatively inferior [12–15]. One of the most significant determinants of breastfeeding initiation was the education level, qualified here as primary school level. In Cameroon, just as in most countries worldwide, education on breastfeeding starts at school, is relayed by mass communication through the media and precise during antenatal consultations by care givers who brief and train women on its importance and advantages [12,14–16]. Women are also thought breastfeeding techniques during the postpartum to prevent breast adverse effects. This motivates pregnant women and enhances predispositions to EIBF [12]. Nevertheless, low level of school education goes with poor understanding of instructions, ignorance, reinforcement of socio-cultural believes such as the “spoiled or bad milk” concept, which induces breastfeeding refusal. On the other hand, highly educated women may as well have job occupations, reducing their availability for breastfeeding [12]. However, failure of EIBF is more likely to occur in women with low level of school education, as it was the case in this survey.

Table IV: Factors associated with delayed breastfeeding

Variables	Time of breastfeeding		OR	p-Value
	> 60 min	≤ 60 min		
Primary education	22 (78.6)	6 (21.4)	2.5	0.045
Centre region	60 (66.7)	30 (33.3)	2.4	0.002
HIV infection	16 (88.9)	2 (11.1)	5.5	0.012
Caesarean section	72 (92.3)	6 (7.7)	13.5	<0.001
Gestational age < 37 weeks	18 (85.7)	3 (14.3)	4.2	0.016
Low birthweight <2500g	15 (83.3)	3 (16.7)	3.4	0.045
Neonatal infection	13 (92.9)	1 (7.1)	10.9	0.009

Table 5: Logistic regression of associated factors

Variables	Adjusted OR (CI à 95%)	Adjusted p-value
Primary school education level	2.3 (0.8 – 6.5)	0.110
Centre region	2.54 (1.8 – 4.5)	0.033
HIV Infection	4.5 (0.9 – 22.3)	0.062
Caesarean section	11.3 (4.6 – 27.7)	< 0.001
Gestational age < 37months	2.3 (0.5 – 10.4)	0.267
Low birthweight < 2500g	1.2 (0.2 – 5.8)	0.847
Neonatal infection	6.6 (0.8 – 56.9)	0.088

In this survey, mothers were mostly from the Centre region, with the possible implication of selection bias, given that the study was carried out in Yaoundé which is the capital city of the Centre region. Just as in a number of African countries, different regions in Cameroon may have specific cultures, traditions and different levels of socioeconomic development. In some traditions worldwide, some women have negative beliefs concerning colostrum and wrong thoughts about “spoiled breastmilk” or “bad milk transformation”. Such women are more likely to delay breastfeeding initiation [17]. Whereas, in regions with lower socioeconomic level, breastfeeding is more practiced given its cost-free natural availability [18]. This has led to suggestions for geographically-focused breastfeeding interventions, culturally competent education and interventions in indigenous communities [17].

Contrarily to World Health Organization’s (WHO) 2007 recommendations for six months exclusive breastfeeding in HIV-exposed neonates under maternal antiretroviral therapy (ART) and infant prophylaxis to reduce transmission, there still persist a reluctance to breastfeed in such women [18, 19]. This may be associated with a psychological self-protective behavior bound to the fear of infecting one’s own infant. In effect, a number of studies report mother infection especially with HIV infection as a barrier to breastfeeding [18, 19]. However, this may be overcome by the reinforcement of antenatal counselling with an accent on the advantage of breastfeeding, in order to strengthen the neonates’ immunity, reduce morbidity, mortality and assure normal growth [20, 21].

Delivery by caesarean section is almost confirmed as a predictive factor for delayed initiation of breastfeeding. In fact, there are various implications pertaining to this intervention, which include hormonal variations with reduced prolactin, oxytocin and endorphin levels, whereas necessary for breastmilk production, ejection and mother-infant attachment [22]. Moreover, general anesthesia causes maternal sedation and altered consciousness in immediate postpartum, responsible for delayed initiation of Breastfeeding [23, 24]. Furthermore, neonates delivered by caesarean section may develop transient tachypnea with respiratory distress preventing them from breastfeeding [25]. Therefore, general anesthesia should be avoided as much

as possible in order to favor EIBF among other advantages.

Though there is evidence that breastmilk feeding reduces mortality, short and long-term morbidity in high risk infants including those with infection, prematurity, and low birthweight, a delay in initiating breastmilk and breast feeding is often observed [25–27]. This is due to the fact that these newborns may be delivered with immediate neonatal emergencies such as neurologic, infectious, thermal regulation, digestive and feeding disorders. In such cases feeding may be delayed in order to rapidly attend to vital emergencies thereby causing a retardation of breastfeeding [25].

CONCLUSION

Despite the WHO recommendations and its countless benefits, the time to initiate breastfeeding after delivery as found in our survey was very long. This delay was independently influenced by the belonging to the Centre region and delivery by caesarean section. Therefore, special emphasis should be laid on supporting mothers who deliver by caesarean section and the reinforcement of communication and education on breastfeeding in the Centre region in order to promote the early initiation of breastfeeding.

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CONFLICT OF INTEREST

The authors declare that they have no competing interest.

AUTHOR’S CONTRIBUTIONS

Protocol design and development : ND, LE ; Data collection : ND, LE, ML ; Data analysis : WG et ND ; interpretation of results : ND, NF, GPKM ; writing of the manuscript : ND, GPKM ; proofreading of the manuscript : ME, NF, ML, MB, GPKM, CA and ND. All the authors have read and approved the final version of the manuscript.

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