ORIGINAL ARTICLE

CURRENT SITUATION AND FACTORS INFLUENCING BREASTFEEDING AMONG WOMEN VISITING PRIMARY HEALTHCARE MEDICAL CENTERS ON BENI MELLAL IN MOROCCO

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ABSTRACT

Background: Breast milk is the best food for the child, which is recommended not to replace it with artificial milk; it's a way to prevent disease. The World Health Organization (WHO) recommends six months of exclusive breastfeeding. **Objective** The main objective of this study was to assess the current situation of breastfeeding at the city of Beni Mellal in Morocco and the prevalence of exclusive breastfeeding and to study factors and the reasons influencing breastfeeding among mothers. **Methods:** We conducted a cross-sectional study using a questionnaire among mothers visiting primary healthcare centers in Beni Mellal between Mars 2017 to Mai 2018. Mothers were interviewed using a structured questionnaire. **Results:** A total of 250 mothers participated in the study. The results show that 67.2% of these women use exclusive breastfeeding and 26.8% use artificial milk in addition to breast milk and 6% use artificial milk alone. Our results show that neither age nor employment nor the number of children nor the place of residence influences the choice of exlusive breastfeeding among the women surveyed. Only the educational level that has a significant impact ($p = 0.01$, $p<0.05$). The prevalence is higher (40%) among the educated than among the illiterate or primary school (27.2%). We have found that only 63.2% of women have given breast milk for the first hour after delivery despite the importance of colostrums. Among the reasons given by women for non-exclusive breastfeeding mode, the nutritional reason is mainly due to the decrease in milk production, which is 38.7% and Milk pumping 24.19%. Also the psychosocial reasons of the fatigue of the mothers of the breastfeeding were indicated by 19.35%. In our study women have been informed by 50% of cases (doctor, midwife and nurse). **Conclusions:** Exclusive breastfeeding is declining in the region of Beni Mellal in Morocco. This could be due to a low level of information and schooling, hence the importance of improving strategies for the care of young mothers during the pre- and post-natal phases.

Keywords: *Exclusive breastfeeding, Breastfeeding practice, Reasons and factors for stopping breastfeeding, Beni Mellal and Morocco.*

1. INTRODUCTION

Breastfeeding is an instinctive act in mammals and can be considered as one of the essential links that have allowed the survival of humanity.

Breastfeeding is a natural gesture that prolongs the mother-infant relationship already established during pregnancy. Beyond the act of feeding, the breastfeeding, whether it lasts a few days, a few weeks, a few months or more than a year, is a moment of exchange, pleasure and privileged contact between the baby and his mom. Human mothers are female mammals almost like the others: they conceive, carry, and give birth to their young, provided with teats, they are also able to feed them.

Breast milk has enormous advantages: It is a complete, balanced, economical, specific and sterile food, its temperature is ideal because it is given directly from the mother's breast to the mouth of the child. It is a safe bet for the health of the child and for that of the mother.

The World Health Organization (WHO) recommends six months of exclusive breastfeeding and two or more years of breastfeeding in addition to another adapted diet [1]. Breast milk is the best food for the child for the first six months, which is recommended not to replace it with artificial milk; it's a way to prevent cardiovascular disease, obesity, allergy, anemia ... or even for the mother, breast cancer [2,3]. This milk does not depend on the amount of the mother's diet, but the quality; since this diet must be varied, balanced and healthy.

At birth, the newborn has an immature immune system. Breast milk helps to alleviate the immune immaturity of the newborn by delaying the involution of the thymic gland. It then has a positive impact on lymphocyte function. It

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contains substances that have an immunomodulatory action, thus contributing to the development of the immune system of young children: hormones (ACTH, cortisol, TRH), growth factors, cytokines, lactoferrins, nucleotides, oligosaccharides, fatty acids polyunsaturated ... [4,5].

Several clinical studies confirm that breastfeeding can prevent early childhood infections, by opposing the development of bacteria, viruses and fungi by the presence of numerous proteins and cells having a cytolytic action on certain pathogens: Transport of antibodies (immunoglobulins), bactericidal activity (lactoferrins, lysozyme), inhibition of bacterial development (kappa-casein), antimicrobial activity (lactoperoxidase), destruction of attacking microorganisms (mediators of phagocytosis) [4,5]. It promotes the development of beneficial germs (bifidobacteria and lactobacilli), at the expense of pathogenic bacteria in the intestine, and reinforces the intestinal and respiratory epithelial defenses by a barrier effect against the implantation of pathogenic germs [5]. This protective factor has been shown for acute diarrhea. In addition, there is a strong relationship between the duration of breastfeeding and the lower incidence of acute diarrhea. Exclusive six-month breastfeeding significantly reduces the risk of acute diarrhea in the first year of life compared to three months of breastfeeding [2].

Women's milk also has a preventive effect on both the incidence and severity of ulcerative necrotizing enterocolitis in neonates [3], episodes of AOM and serous otitis, urinary tract infection in children and this protective effect persists despite weaning [2,3].

Children breastfed for at least 6 months have protection against allergies during their first three years. Breastfeeding has a protective effect against the occurrence of atopic dermatitis, , eczema and a significant decrease in the risk of developing asthma and obesity in breastfed children exclusively [3]. Other more recent studies support the superiority of breastfeeding improved cognitive development in 8½-year-olds breastfed 12 to 18 months compared to those breastfed less than 6 months [2]. It was also shown to have a minimal mean decrease in systolic blood pressure and cardiovascular disease incidence and mortality in those who received breastfeeding [2]. Exclusive prolonged breastfeeding reduces the risk of developing type 1 diabetes and type 2 diabetes later in childhood [1-3].

Breast milk, by immunoglobulins it contains, promotes the immune response in children and protects against cancerous diseases including hematological [2]. Breastfeeding, also benefits the mother is a way reduces the risk of postpartum anemia related to the genital bleeding through the secretion of prolactin, which causes amenorrhea. Opinions differ on the possible protective effect of breastfeeding on the risk of osteoporosis after menopause. For some, breastfeeding allows the mobilization of bone calcium and thus provides protection against osteoporosis [2]. Breastfeeding decreases the incidence of breast cancer and ovarian cancer [2].

The benefits of breastfeeding for the child and the mother are numerous and validated by scientific studies. Among the essential properties that stand out for industrial milk alone, we can cite its wealth of protective factors and specific nutrients. For human beings, breast milk cannot have a valid substitute. Nevertheless women do not always choose this mode of feeding for their child. The deplorable growth of artificial feeding continues in developing countries in connection with progress in the manufacture, marketing of industrial milks and the lack of information and awareness of mothers [6].

Breastfeeding is declining in Morocco, according to a 1983 survey in Rabat the prevalence of breastfeeding was 94.2% [1]. Another survey conducted in Agadir in 1996 showed that breastfeeding was 83.7%, including 17.7% of mixed breastfeeding [7]. In Morocco, certain improvements have been noted in the field of nutrition. As part of the National Nutrition Strategy 2011-2019, the Ministry of Health has set up a set of interventions specifically aimed at improving the nutritional status of children, such as growth monitoring, promotion of breastfeeding, supplementation with vitamins and minerals of children and women during pregnancy and postpartum, as well as promoting the consumption of micronutrient fortified foods. Despite these efforts established by the Ministry of Health, breastfeeding is progressively declining, as shown by a recent study conducted in 2017, which found that 89.1% of women surveyed in the city of Kenitra still had feeding of which 67.3% are breastfeeding and 21.8% are mixed feeding [8]. Despite the indisputable benefits of breastfeeding maternal for the child and his mother, his practice is insufficient or poorly conducted by the mothers in Morocco.

In this context, we conducted a survey of a group of feeding women in Beni mellal, whose objective is to evaluate the different practices of breastfeeding and its interactions with socio-economic factors and to evaluate also reasons for choice of mixed and artificial feeding.

2. MATERIALS AND METHODS

Our work involved a sample of 250 women coming to consult in pediatrics or for the vaccination of their children at LGHDIRA LHAMRA and GHAR NHAL medical centers in Beni Mellal. The investigation was between Mars 2017 to Mai 2018. During our visit to the primary healthcare medical centers, in collaboration with the coordinating doctor, and

the midwives, each woman is interviewed separately in a directed way. The questions were asked by using simple language that is easy for women to understand.

The questions essentially allowed us to collect information on women's age, place of residence, level of education, occupation, breastfeeding method, duration between birth and first feeding, good practice of hygiene, practice and behavior during childbirth, her knowledge of the benefits of breast milk , breastfeeding conditions of the child, the parental circle and the use of drugs during breastfeeding. Similarly, questions were asked to mothers using artificial milk concerning mainly the causes of use, bottle-feeding conditions and the health status of women.

The data was entered using the Excel software and analyzed using the SPSS version 21 software. We calculated simple frequencies and relative frequencies (percentages) for qualitative variables. We calculated averages and gaps types for quantitative variables. The percentage comparisons on independent series were performed by the Pearson $\chi 2$ test.

3. RESULTS

3.1 Description and characteristics of lactating mothers

The socio-demographic characteristic of lactating mothers is described in Table 1. The mothers surveyed belong to all age categories between 18 and 48. Of the total mothers interviewed, the vast majority of women (83.6%) do not have a profession. Most of the women questioned are from the city (60.4%).Regarding educational status of the respondents, the illiteracy rate and with primary education is (36.8%), secondary school (52.4%) and university or higher (10.8%).

Moreover, the majority of mothers already have children (64.8%). Only 61.2 % of the women had a medical follow-up during their pregnancy. Half of the survey participants have breastfeeding training by their doctor or midwife, only 7.6% by their mother and a large 42.4% party have no knowledge of breastfeeding and no source of information.

Table 1: Selected characteristics of the participants and breastfeeding knowledge of participants visiting primary healthcare medical centers in Beni Mellal in the study sample (n = 250).

Variable	Number	(%)
Age of mothers (in years)		
18-24	**80**	**(32)**
25-35	**124**	**(49.6)**
36-48	**46**	**(18.4)**
Educational background		
Primary school or lower	**92**	**(36.8)**
Secondary school	**131**	**(52.4)**
University or higher	**27**	**(10.8)**
Employed		
No	**209**	**(83.6)**
Yes	**41**	**(16.4)**
Number of children		
1	**88**	**(35.2)**
> 1	**162**	**(64.8)**
place of residence		
Town	**99**	**(39.6)**
City	**151**	**(60.4)**
Followed during the pregnancy period by a gynecologist		
No	**97**	**(38.8)**
Yes	**153**	**(61.2)**
Participants' sources of information about breastfeeding:		
Nobody	**106**	**(42.4)**
Mother	**19**	**(7.6)**
Doctors/Nurses/Midwives	**125**	**(50)**

3.2 Mothers' breastfeeding

From total of interviewed women, the prevalence of exclusive breastfeeding is only 67.2%, 26.8% are mixed feeding and 6% artificial feeding reported visiting health institution for postnatal care. These results show a trend a decline in the practice of exclusive breastfeeding in Beni Mellal.

Table 2: Feeding type in women surveyed visiting primary healthcare medical centers in Beni Mellal in the study sample (n = 250).

Type of feeding	Number	(%)
Artificial feeding	15	6
Mixed feeding	67	26.8
Breastfeeding exclusive	168	67.2

3.3 Practice of breastfeeding

Putting breast in the infant within one hour of birth is a good practice for starting breastfeeding. Similarly, late breastfeeding may compromise continued breastfeeding for a variety of reasons, including insufficient milking and difficulties for the baby to breastfeed. Therefore, the proportion of infants who are breastfed early is an indicator of the quality of the practice breastfeeding [9].
Our results show that only 63.2% are breastfeeding within the first hour after delivery. These results show the ignorance of these women on the interest of breastfeeding during the first hour.

Table 3: Moment of the first breastfeeding in women surveyed visiting primary healthcare medical centers in Beni Mellal in the study sample (n = 250).

Moment of the first breastfeeding	Number	(%)
First hour breastfeeding	158	63.2
1h-12h	55	22
12h-24h	20	8
>24h	15	6
No first breastfeeding	2	0.8

3.4 Factors affecting mothers' breastfeeding practice and exclusive breastfeeding

Our results show that neither age nor employment nor the number of children nor the place of residence influences the choice of exlusive breastfeeding (EBF) among the women surveyed. Only the educational level that has a significant impact ($p = 0.01$, $p<0.05$) on the choice of exclusive breastfeeding.

Table 4: Factors affecting mothers breastfeeding in Beni Mellal in the study sample (n = 250)

Variable	No EBF Number (%)	EBF Number (%)	p-value
Age of mothers (in years)			p=0,431
18-24	30 (12)	50 (20)	
25-35	36 (14.4)	88 (35.2)	
36-48	16 (6.4)	30 (12)	
Educational background			p=0.01
Primary school or lower	24 (9.6)	68 (27.2)	
Secondary school	41 (16.4)	90 (36)	
University or higher	17 (6.8)	10 (4)	
Employed			p=0.17
No	62 (24.8)	147 (58.8)	
Yes	20 (8)	21 (8.4)	
Number of children			p=0.376
1	32 (12.8)	56 (22.4)	
>1	50 (20)	112 (44.8)	
Place of residence			p=0.218
Town	28(11.2)	71(28.4)	
City	54 (21.6)	97(38.8)	

3.5 Reasons given by mothers associated with stopping breastfeeding

Our results show that women who are not exclusively breastfeeding are 82 women, 67 of whom do mixed feeding and 15 do artificial feeding, among these women 62 answered our question about the reasons for the non-practicing exclusive breastfeeding. Different answers were given about this.

The justifications given by the mothers surveyed who do not breast-feed exclusively are the following:

The main reasons for the use of mixed feeding or artificial feeding are related first to nutritional and milk pumping, we found that 38.70% mothers are suffering from milk insufficiency or decrease of milk production and 24.19 % baby refuses to feed. Our results show that psychosocial reasons are found second with 19.35% mother's breastfeeding was tiring. Finally we find that the reasons related to the work with 9.68% insufficient time off during work days for breastfeeding and 3% insufficient time and milk.

Table 4: Reasons given by mothers associated with stopping breastfeeding in Beni Mellal.

Reasons	Number	(%)
Nutritional		
Decreased milk production	24	(38.70)
Baby hungry/Unsatisfied after feeding	2	(3.22)
Psychosocial		
Breastfeeding was tiring	12	(19.35)
Milk pumping		
Baby refused to feed	15	(24.19)
Work related factors		
Insufficient time off during work days for breastfeeding	6	(9.68)
Insufficient time and milk	3	(4.84)

4. DISCUSSION

Our survey shows that the prevalence of maternal feeding is 94 % of whom 26.8% are mixed feeding and only 67.2% breastfeeding exclusive. Artificial feeding was adopted by 6% of women respondents.

According to other results of Bellati-Saadif et al., (1996) [7], having conducted a survey in 1996 of 220 mothers to identify the breastfeeding situation in the Agadir region, the prevalence of maternal feeding 84% of which 66% exclusive breastfeeding and 18% mixed breastfeeding.

A prospective survey also carried out by Hassani et al., (2005) [10] from 211 newborn mother couples who have stayed at the maternity hospital Souissi Rabat revealed a prevalence of maternal feeding of 91%.

Recently another survey conducted in 2017 by Sqalli Houssain and et al., (2017) [11] in the city of Rabat with 275 women the prevalence of maternal feeding is 89% including 40% exclusive breastfeeding and 49% mixed breastfeeding. In accordance with the results of these investigations, our survey show that the prevalence of maternal feeding is 94%, of which 67.2% is exclusive breastfeeding and 26.8% is mixed breastfeeding. It is clear that there is a strong increase in mixed feeding at the expense of breastfeeding exclusive that would have dropped. This represents a point of vigilance in view of its undeniable benefits for the mother and the infant.

The prevalence of exclusive breastfeeding is higher than the mother in the middle ages (20% among mothers under age 24, 35.2% of mothers aged 25-35 and 12% of mothers aged 36-48) without the difference being statistically significant.

The analysis of the results shows that unemployed women practice excusive breastfeeding (58.8%) more than women in employment (8.4%).These results show that the availability of time among these women allows the practices of the exclusive breastfeeding. The place of residence and the number of children do not act on the choice of exclusive breastfeeding.

On the other hand, the level of education of the mother plays a very significant role (p <0.05) in the mode of exclusive breastfeeding, the prevalence is higher (40%) among the educated than among the illiterate (27.2%). This can be explained by the sensiblization on the interest of breastfeeding during higher education.

Putting within the infant within one hour after birth is a practice conducive to the good start of breastfeeding. Similarly, the late breast may compromise the continuation of breastfeeding for many reasons, including a lack of milky growth and difficulties in the baby to take the breast. We have found that only 63.2% of women have given breast to infant for the first time from the first hour after delivery despite the nutritional importance colostrum.

In view of the benefits of early breast-feeding, which may represent a determining factor in the choice of exclusive breastfeeding, this practice must to be restored. To this end, it will be appropriate, on the one hand, to raise awareness pregnant women about the importance of breastfeeding their infant the earliest possible and on the other hand to sensitize the medical staff to promote this practice and to intervene effectively to encourage mothers to massively engage in this practice.

Regarding the reasons given to justify the choice of non-exclusive breastfeeding mode, the majority of the women questioned answered that they are due to the nutritional reason mainly the decrease of the production of the milk or the milk insufficiency is evoked by 38,7% and 24.19% the baby refuses breastfeeding. Also the psychosocial reasons of the fatigue of the mothers of at the time of the breastfeeding have been indicated by 19.35%. This opens up a research component that must be carried out in this direction to understand the reasons for the problem of milk production that may be related to the health status or behavior of women and also the exchange established between mothers and their baby who plays an essential role in pumping milk.

Similarly, several studies have showed that a women's supervision lactating and an accompaniment in the first few weeks could significantly reduce the number judgments related to difficulties [12,13]. They are proved by studies that evolution attitudes and practices vis-à-vis breastfeeding from birth would largely explain the evolution the rate and duration of breastfeeding maternal [14].

In our study women surveyed have been informed prenatally by health professionals only in 50% of cases (doctor, midwife and nurse).

It is for this reason that it would be imperative to frame even more lactating women and observe a more remarkable effort on the part of health professionals to help lactating and especially women to overcome the difficulties encountered during breastfeeding.

However, we must do everything so that all women who want to breastfeed can do it in satisfactory conditions for themselves and their child.

5. CONCLUSION

Despite the efforts made by the Ministry of Health to promote exclusive breastfeeding, including the organization of the Breastfeeding Week, there is a lack of information on women's interest and the benefits of exclusive breastfeeding. Our study shows that the educational level is significant factors in the choice of exclusive breastfeeding in the region.

The Ministry of Health must therefore multiply the media campaigns on the benefits of breast milk and particularly promote this practice in the early hours after childbirth with women at low educational level and employers by adopting a comprehensive speech at all category that shows the value of exclusive breastfeeding. It is therefore also wise to take more account of the role of health professionals through specific strategies.

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Annex:

Questionnaire:

1. Your age?
2. Place of residence in Beni Mellal?
   ☐ Town ☐ City
3. Educational background
   ☐ Primary school or lower ☐ Secondary school ☐ University or higher
4. Your professional situation?
   ☐ Without activities ☐ Employee
5. Do you already have children?
   ☐ Yes ☐ No
6. If yes, how many children
   ☐ One ☐ More than one
7. Have you prepared for this birth?
   ☐ Yes ☐ No
8. If yes, with what help:
   ☐ Mother ☐ Doctor/ Nurses/Midwives ☐ Other
9. 10. Did you have regular follow-up during pregnancy period by a gynecologist?
   ☐ Yes ☐ No
10. Did you breastfeed your baby?
   ☐ Yes ☐ No
11. If not why :
   ☐ Decreased milk production ☐ Baby hungry/Unsatisfied after feeding
   ☐ Breastfeeding was tiring ☐ Baby refused to feed ☐ Work related factors
   ☐ Insufficient time off during work days for breastfeeding ☐ Other
12. How do you feed your baby?
   ☐ Artificial feeding (baby bottles / artificial milk)
   ☐ Mixed feeding (Breasts combined with baby bottles)
   ☐ Breastfeeding exclusive (Breasts)
13. What is the duration between birth and first breast?

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