

# Factors Associated with Breastfeeding Practice in Newborns of Moroccan Mothers with SARS-CoV-2

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**Abstract:-** The aim of the study is to evaluate the psychometric characteristics of empowering breastfeeding women and the association with the duration of breastfeeding. The study sample was 237 women in the Oued- Eddahab Region of Morocco. The results show that 11% breastfed for less than 3 months, 8.7% breastfed for from 3 to 6 months, and more than half (57.4) breastfed for up to one year, while a minority (11%) breastfed for more than one year. The average age of the women surveyed was  $28 \pm 5.7$ . With regard to the association between the duration of breastfeeding and the degree of empowerment of the women surveyed. The treatment of the ordinal qualitative variables was carried out under the multiple-choice response nail and by the Anova test, which calculated the degree of association, by items. The first dimension records (Item1 :  $p < 0.003$ ,  $p < 0.699$ ,  $p < 0.011$ ,  $p < 0.001$ ), as for the second dimension (Item1 $p < 0.000$ , Item2 $p < 0.000$ , Item3 $p < 0.000$ ). For the third dimension, only the association with the second item was significant ( $p < 0.000$ ).as for the last dimension, only the milk insufficiency seems to be a determining factor in maintaining breastfeeding. Regarding the comorbidity effect of gestational diabetes and Covid-19, the study identified 12 women with a diagnosis of SARS-CoV-2, of whom 9 (3.9%) had laboratory/radiology confirmation and one had more than 3 symptoms without laboratory confirmation. Women with a SARS-CoV-2 diagnosis had high rates of gestational diabetes (RR : 1.46; 95% CI, 0.74-0.95).

**Keywords:-** Nursing Woman, Breastfeeding Duration, Empowerment Dimension, SARS-CoV-2.

## I. INTRODUCTION

Breastfeeding is very important for the health of the human body. Where, it helps maintain good health throughout life. Once adults, people who have been breastfed often have low blood pressure and lower cholesterol levels, and more rarely suffer from obesity or type 2 diabetes [1]. However, only 40% of infants worldwide are exclusively breastfed for the first six months [2]. Although breastfeeding

is recognized by public health organizations as the ideal element for the infant, it appears from the analyzes that 11.6% of deaths of children under the 5 age, are attributable to suboptimal breastfeeding practices, of corresponded in 2011 to 804,000 deaths worldwide [3]. In Morocco, despite the efforts made in terms of information, education and communication, early breastfeeding during the half hour after childbirth increased from 48.5% to 26.8% from 1992 to 2011 and exclusive breastfeeding fell from 62% to 27.8% for the same period [4]. Having taken into account that the production of breast milk is subject to the burrowing reflex and secretory hormones and ejection of secretion, the latter, which is mainly influenced by the emotional state of the mother, the decision to breastfeed and its duration, are influenced by countless individual and environmental factors[5]. It should be noted that breastfeeding is consubstantial with a reduction in sudden infant death syndrome; In addition, breast milk is intimately linked to better performance on neurocognitive tests. In addition, breastfeeding is an important preventive health measure for nursing mothers, by acting on the reduction of the incidence of breast cancer as well as ovarian cancer, as well as greater weight loss during the postpartum period [6]. The success of breastfeeding largely depends on the mother's desire to breastfeed her baby. Based on new analyzes of the psychosocial state of mothers. The concept of empowerment has emerged as an inextricable dimension to the promotion of maternal and child health [7]. It designates the way in which the individual increases his abilities by promoting self-esteem, self-confidence, initiative and control [8]. It is directly related to the idea of health promotion [9]. In fact, empowerment as an approach centered on the individual, has highlighted four factors favoring the empowerment of individuals: 1) the environment, 2) the extent of their skills that make them capable of overcoming obstacles related to the environment, 3) belief in their own control abilities and 4) their emotional states [10]. Although that this concept may appear abstract, researchers have proposed quantitative tools to assess the empowerment of individuals, using effective Ness measurement instruments [11].

Recognizing that breastfeeding improves IQ, school attendance, and is associated with higher income as an adult, An estimated 2.7 million children die annually from under-nutrition related to the cessation of exclusive breastfeeding. The aim of this study is to evaluate psychometric characteristics of prenatal empowerment dimensions and the effect of maternal history in pregnant women with and without gestational diabetes and covid-19 in southern morocco.

#### ➤ *Study Area*

The work concerned a sample of 202 nursing women. They come to the maternal and child health services to vaccinate their children at the Level 1 Urban Health Center HassanII). The investigation lasted eight weeks. During our visit to the CSSB, in collaboration with the responsible doctor, midwives and versatile nurses. The survey was based on the mother's health record, which records the prenatal follow-up, and postpartum indicating latch on, and that of infants. The interviewers consulted the vaccination registers to identify women coming for the first time immediately postpartum and to take them aside for the survey. Each selected woman is interviewed separately in a directed way.

## II. METHODS

Before giving the questionnaire to the women interviewed, it was submitted to a validation committee made up of the head doctor of SRES and the head doctor of the urban health center to validate it. Then a pre-test was carried out with a group of 10 women to verify the relevance and effectiveness of the questionnaire. The questionnaire comprising 26 closed and semi-open questions. The questions essentially allowed us to collect information on the age of the woman and her child, her level of education, his work status, his practice and behavior during, putting the child to the breast, knowledge of the benefits of breast milk, the age of the beginning of the diversification of the child's diet and the main difficulties encountered during the breastfeeding experience. Similarly, questions were asked to mothers about sources of information on breastfeeding and its benefits for mother and child, as well as the conditions for storing breast milk according to the child's age. At the same time, a case-control study involved prenatal women with a history of gestational diabetes and SARS-CoV-2.

#### ➤ *Hypothesis:*

There is an association between the duration of breastfeeding and the levels of empowerment used in the four-dimensional empowerment model (15 items). There is an association between prenatal maternal history and exposure to SARS-CoV-2.

#### ➤ *Statistical Analysis Data Analysis Tools*

Data were entered into Excel 2024 and analyzed using Statistical Package for Social Sciences (SPSS) version 26 software. It is a statistical software, which has three windows, one of the editor, which allows to create the database, a results window (Output), and a syntax window. Qualitative variables were expressed as a percentage and the quantitative variables on average, and standard deviation. We used the Pearson chi-square 2 test, and in case of invalidity of this test, and comparison of two percentages, by Fisher's two-sided exact test, to study the dependence of the epidemiological profiles of breastfeeding women according to their degrees of empowerment. The test was considered significant when the p-value (p) is less than 0.05 ( $p < 0.05$ ). In a second time, the distributions of the variables between them were taken into account simultaneously to determine the relationships and association between the status of breastfeeding and the dimensions of the empowerment of breastfeeding mothers. A multivariate analysis was conducted on the effect of maternal history, specifically SARS-CoV-2 and gestational diabetes.

#### ➤ *Ethical Considerations*

For ethical considerations, written informed consent was obtained from study participants. For the rigor of the study, the anonymity of the participants was concealed. In such a way that it is not possible to identify the study participants, nor to identify them within the meaning of Law 09-08 on the protection of individuals in connection with the processing of personal data.

#### ➤ *Judgment Criterion*

The initiation of breastfeeding: Included exclusive breastfeeding, and mixed breastfeeding. The duration of breastfeeding, expressed in months, covered the interval between the date of delivery and the date of weaning (date of the last feeding) or the date of the study point. The minimum follow-up was two months.

## III. RESULTS AND DISCUSSION

The study was carried out on 202 breastfeeding women aged 19 to 41. Given that the SARS-CoV-2  $< 0.33$ , the dispersion of the observations is less significant and the age values are closer to around 28 years  $\pm 5.7$ . Regarding the level of education, 20% are illiterate. 35% have a primary level, 32% have completed secondary school, and only 4% have a university education of all the participating women, 76.8% do not work outside the home, and only 23.2% have paid employment. For the duration of breastfeeding. The basic hypothesis assumes that the values of the independent variable duration of breastfeeding, which extends from birth to 18 months, classified into four intervals ( $< 3$  months, from 3 to 6 months, from 6 to 12 months and  $> 12$  months), are dispersed by after the normal law.

Table 1 Duration of Breastfeeding among the Women Surveyed

Breastfeeding duration	Effective	Percentage
<3 Month	26	12%
[3.6] Month	75	37%
[6.12] Month	60	31%
>12 Month	41	20%

According to the results of this study, 12% of women did not breastfeed for more than 3 months, while 37% breastfed for less than 6 months, while half of the women surveyed breastfed for 6 months, and only 20% of women breastfed more than twelve months (Table 1). In terms of the association between prenatal maternal history and exposure to SARS-CoV-2, the study enrolled 12 women with a diagnosis of SARS-CoV-2, of whom 9 (3.9%) had laboratory/radiology confirmation and one had more than three symptoms without laboratory confirmation (Table 2). The study enrolled 12 women with a diagnosis of SARS-CoV-2, the groups of women with and without a diagnosis of SARS-CoV-2 had similar demographic characteristics. Women SARS-CoV-2 had high rates of gestational diabetes (RR: 1.46; 95% CI, 0.74-0.95). In addition, women with gestational diabetes had a high risk of Preeclampsia (RR: 1.16; 95% CI, 1.04-1.50) and women with a lower rate of spontaneous labor induction and a high rate of obstructed labor reflected a high rate of gestational diabetes (RR: 1.6; 95% CI, 0.51-0.79). The results of the study on the first dimension of empowerment, which focuses on women's knowledge of the benefits of colostrum, corroborate the results of a study in Scotland on mothers' attitudes and knowledge about breastfeeding (Table 3). They

corroborate with the results of a study in Scotland on mothers' attitudes and knowledge about breastfeeding, which emphasized that better information was needed for expectant mothers and fathers to overcome potential problems with breastfeeding [12]. The newborns of mothers with knowledge of the benefits of colostrum had a longer duration of breastfeeding and protection against infections (RR: 0.4; 95% CI .1.3; 1.9). Note that feeding ability is a barrier to breastfeeding [13], [14].

On the other hand, women with a history of polycystic syndrome were less exposed to gestational diabetes (RR 0.02; 95% CI, 0.6-0.9), and similarly, women who delivered low birth weight infants of less than 2500g were more protected against exposure to gestational diabetes (RR: 0.42; 95% CI, 0.22-0.81). In this regard, a multinational cohort study on maternal and neonatal morbidity and mortality in 2021 in pregnant woman with and without SARS-CoV-2 revealed that the severe neonatal morbidity index among neonates of woman with Covid-19 diagnostics was significantly higher (RR, 2.66; 95% CI 1.69 - 4.18) than in those of woman without SARS-CoV-2 diagnostic [15].

Table 2 Effect of maternal history SARS-CoV-2 among pregnant women with and without diagnostic GD

Characteristics	No. (%)			
	Woman with GD (n=101)	Woman without GD (n=101)	RR (95% IC)	p-value
SARS-CoV-2	7(58.3)	5(41.7)	1.46 (0.74 to 0.98)	<0.0003
Age <25ans	28(46.7)	32(53.3)	1.71 (0.53 to 0.95)	<0.0005
Premature <37SA	44(75.9)	14(24.1)	0.70 (0.57 to 0.87)	<0.0004
Dystocic delivery	40(81.6)	9(18.4)	1.6 (0.51 to 0.79)	<0.0000
Gestation >5	92(65.2)	49(34.8)	0.72 (0.54 to 0.97)	<0.0001
ATCD_PCOC	2(40.1)	1(2.4)	0.02(0.6 to 0.9)	<0.0003
ATCFD°ID	119(48.3)	2(1.7)	1.35(0.6 to 0.9)	<0.0004
Preeclampsia	25(20.7)	6(7.4)	1.16(1.04 to 1.50)	<0.0005
Syphilis	5(4.1)	3(3.7)	1.04 (0.94 to 0.98)	<0.0001
Low birth weight <2500g	35(28.9)	10(12.3)	0.42 (0.22 to 0.81)	<0.0002

Table 3 Association between the Duration of Breastfeeding and Dimensions of Empowerment

Associated factors	Multivariate analysis: durée d'allaitement			
	Items	OR	IC 95%	P-value
Information on skills	Advantages of colostrum	0.4	[1.3; 1.9]	<0.004
	Composition of Milk	2.8	[0.2; 1.6]	0.542
	Convenience of use	7.6	[0.7; 2.9]	0.632
	Attachement Link	2.3	[0.3; 0.6]	0.003
Communications skills	Transmission of worries	3.5	[1.7; 1.9]	<0.001
	Application for assistance	8.5	[0.7; 1.5]	0.234
	Exchange capacity	2.6	[2.9; 4.3]	0.564
Negotiation skills	Freedom of decision	9.7	[1.2; 2.5]	0.875
	Friend's experience	4	[1.6; 4.5]	0.087
	religion	4.7	[1.2; 3.4]	0.651

<b>Problem-solvingSkills</b>	Milk insufficiency	2.5	[2.5; 9.6]	<0.003
	Return to work	1.4	[1.7; 5.4]	0.654
	Painful Nipples	1.5	[1.4; 5.6]	0.673
	Esthetic reasons	0.2	[2.3; 7.5]	0.897

#### IV. CONCLUSION

Empowerment of pregnant women has a place in the process of adopting and maintaining exclusive breastfeeding. In addition, it is a tool for health professionals to promote their strategies for good practice in health centers by enabling them to coach women to breastfeed their infants exclusively. The design will be used in the new primary health care management based on a values approach that refers to a revaluation of the intrinsic motivation of breastfeeding women to adopt and maintain breastfeeding.

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