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Maternal Satisfaction With Breastfeeding At The End Of Puerperium And Associated Factors

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Abstract
Background: Success of maternal breastfeeding could be achieved by maternal satisfaction and duration of breast feeding. Our present study measures the level of maternal satisfaction with breast feeding at the end of the puerperium.
Methods: This is a prospective cross-sectional study that was conducted among 385 postpartum women delivered in SRM Medical college Hospital and Research centre , who met the inclusion criteria from February 2022 to November 2022. After obtaining informed consent, data was collected regarding the sociodemographic characteristics, the woman's health, last pregnancy, labor and puerperium. After six weeks postpartum, mothers were called upon and asked about their level of satisfaction with breast feeding in the six weeks postpartum period using the Maternal Breastfeeding Evaluation Scale (MBFES) that has been validated for use in south Indian population. The level of maternal satisfaction with breast feeding was categorized using the cutoff point obtained with MBFES. Based on the values, they were categorized into highly satisfied, satisfied and with average satisfaction.
Results: High levels of satisfaction was observed among 222 participants (57.7%), 96 participants (24.9%) were satisfied and remaining 67(17.4%) had average level of satisfaction with breast feeding. Also, the clinical findings showcased that among the sample population who exhibited average & low level of satisfaction were due to factors like parity (p- 0.001), mode of delivery (p- 0.000), low milk supply(p- 0.015), pain while breast feeding(p- 0.021), nipple anatomy problems(p- 0.000), difficulty latching on (p- 0.008), milk oversupply(p- 0.023) and use of formula feeds(p- 0.005).
*Conclusion:*From the present study, it could be identified that there are certain key factors that are directly in association with maternal satisfaction during the puerperium time. We believe that working to increase maternal breastfeeding satisfaction should be a part of breast feeding promotion strategies. Efforts in this direction should be initiated during the pre natal care, with special attention to the factors associated with low level of satisfaction with breast feeding.

Key words: MBFES; Breastfeeding; risk factors; mode of delivery; Pregnant women

I. INTRODUCTION

Despite the healthcare community has undergone rapid development in its scientific knowledge concerning with benefits from breastfeeding for both maternal & children's health & wellbeing[1], however the incidence & the actual prevalence rates regarding

breastfeeding is substantially low in several parts of the globe. A recent WHO report showed that the prevalence of early initiation of breastfeeding is less than 50% globally, exclusive breast feeding in the puerperium period and above (0-5 months) was found to be less than 40% in almost 127 low & mid-income nations & also in 37 high-income nations. Breast feeding for more than 12 months was quite uncommon among developed nations[1].

Currently, it has become a major topic of interest as numerous efforts are taken towards improving such situation, that are essential for the success of breastfeeding namely- socioeconomical, political, cultural & even individual factors.

The positive impact on mothers' health as well as newborn's development has long been forgotten. In general, breastfeeding facilitates towards improving the parenting nature and behaviour of mothers, & also improves attachment to their baby as well[1].

Mothers' willingness to breastfeed is also a critical element in breastfeeding[2,3]. Studies indicate that pregnant women are generally willing to breastfeed due to maternal-fetal attachment[4], though the relationship between maternal-fetal attachment and the willingness to breastfeed beyond the 12-month mark has not been reported.

Our study aimed at analyzing maternal attachment at puerperium and the characteristics of breastfeeding behaviours that affected satisfaction.

II. AIM AND OBJECTIVES OF THE STUDY

- To measure the level of maternal satisfaction with breastfeeding at the end of puerperium and associated factors

III.MATERIALS AND METHODS

Study design: Cross sectional study

1. **Study duration:** March 2022- November 2022
2. **Study setting:** Postpartum woman 24 hrs after delivery in the department of Obstetrics and Gynecology, SRM Medical college Hospital and Research Centre, Kattankulathur.
3. **Sample size** : Initially a pilot study was conducted to calculate the sample size with a group of 30 women
4. **$N = Z^2 (p) (q)/ e^2 = (1.96)^2(0.5) (0.7)/ (0.05)^2 = 385$**

Where $Z^2 = 1.96$ or 95% confidence interval
p = prevalence 50%, q= 1-p
e= margin of error (5%)

IV. INCLUSION CRITERIA

- 24h post-delivery, women who were rooming in with their newborn and started their breast feed.
- Singleton pregnancy
- Term baby
- Patients willing to participate in the study.

V. EXCLUSION CRITERIA

- Preterm delivery
- Babies who face problems that interfere the breast feeding such as orofacial malformations
- Conditions which require the separation of mother -child in cases active TB
- Mother with Psychiatric disorders
- Patients not willing to participate in the study

Informed consent was obtained from all the patients who were satisfying the inclusion criteria and were enrolled for the study. Data was collected and analyzed for sociodemographic characteristics, the woman's health, last pregnancy, labor and peripartum, as well as some aspects of the first 6 weeks of life of the newborn. Maternal satisfaction with breastfeeding is measured using the Maternal Breastfeeding Evaluation Scale (MBFES). After six weeks postpatum, mothers were called upon and asked about their level of satisfaction with breast feeding in the six weeks postpartum period using a questionnaire in person. In the first stage of the analysis, the following variables were selected as possible explanatory variables of the outcome, namely:

- Maternal characteristics
- Family characteristics
- Pregnancy characteristics
- Prenatal care characteristics
- Labor and peripartum characteristics
- Characteristics of the first 6 weeks postpartum

The level of maternal satisfaction was analysed using the MBFES[18,] which contains 30 questions, each question evaluated by 5 point likert scale and the total point will be 150 and will be validated.

The level of maternal satisfaction with breast feeding was categorized using a cutoff point the median score obtained with MBFES. Value more than the median score was considered as higher satisfaction and value less than the

median score was considered as lower maternal satisfaction.

Statistical analysis: The Data collected were analyzed using appropriate statistical tests using the SPSS statistical software. The association between the different variables assessed and the outcome will be estimated using the Prevalence ratio (PR) and 95% confidence intervals (95%CI). Statistical significance was set at $p<0.05$.

VI. RESULTS

The total participants in the study were 385 , in the age between 18- 39years. with a mean age of 26.82±4.268.

Table 1.*Descriptive statistics presenting the mean maternal age group*

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Age	385	18	39	26.82	4.268

From the above table, respondents age begins from 18 years upto 39 years. The mean and standard deviation for age is 26.82±4.268.

Majority of the participants 176 (45.7%)) were from the middle class.

Pregnancy Characteristics

Our study revealed that 183(47.5%) of the study population were primiparous, 176(45.7%) were in second parity and 26(6.8%) were in third parity. 374(97.1%) had spontaneous conception. None of the respondents were having any habits like smoking and drinking whereas, most of the respondents 342(88.8%) did not have any risk factor in their pregnancy period such as Hypertensive disorders of pregnancy, Gestational diabetes mellitus, Fetal Growth Restriction, etc.

Maternal breast feeding evaluation scale					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Satisfied (125-150)	222	57.7	57.7	57.7
	Satisfied (110-125)	96	24.9	24.9	100.0
	Average (90-110)	67	17.4	17.4	75.1
	Total	385	100.0	100.0	

Maternal breast feeding evaluation scale was analyzed and results showed 222(57.7%) were very satisfied, 96(24.9%) were satisfied and remaining 67(17.4%) were found to have average level of satisfaction in breast feeding.

Chi-Square- Demographic profile with Maternal breast feeding evaluation scale

		Pregnancy characteristics with Maternal breast feeding evaluation scale							
		Frequency (n)	percent	Maternal breast feeding evaluation scale			Total	χ^2	p value
				Very Satisfied	Average	Satisfied			
Age	15-20			5	8	12	25	20.492	0.237
	21-25			30	38	58	126		
	26-30			27	38	99	164		
	31-35			5	10	37	52		
	Total	385	100	67	96	222	385		

Socioeconomic level	Lower class	119	30.9	19	31	69	119	0.384	0.984
	Middle class	176	45.7	32	42	102	176		
	Upper middle class	90	23.4	16	23	51	90		
Total		385	100	67	96	222	385		

The above table shows that for Age and Socioeconomic level the significant value is Greater than 0.05 at 95% confidence interval, it shows there is no significant relationship between Maternal breast feeding satisfaction with age and Socioeconomic level.

Chi-Square- Pregnancy characteristics with Maternal breast feeding evaluation scale

		Pregnancy characteristics with Maternal breast feeding evaluation scale							
		Frequency (n)	Percent (%)	Maternal breast feeding evaluation scale			Total	χ^2	p value
				Very Satisfied	Average	Satisfied			
Parity	First parity	183	47.5	33	97	53	183	10.053	0.001*
	Second parity	176	45.7	33	100	43	176		
	Third parity	26	6.8	1	25	0	26		
	Total	385	100	222	67	96	385		
Conception	Spontaneous	374	97.1	214	65	95	374	1.590	0.452
	Treatment	11	2.9	8	2	1	11		
	Total	385	100	222	67	96	385		

- There is significant relationship between Maternal breast feeding with Parity(p value- 0.001) . As parity increases , the maternal satisfaction with breast feeding also increases.

Labour and birth characteristics with Maternal breast feeding evaluation scale

		Labour and birth characteristics with Maternal breast feeding evaluation scale							
		Frequency (n)	Percent (%)	Maternal breast feeding evaluation scale			Total	χ^2	p value
				Very Satisfied	Average	Satisfied			
Mode of delivery	Vaginal	102	26.5	67	0	35	102	30.593	0.000*
	Cesarean section	283	73.5	155	67	61	283		
	Total	385	100	222	67	96	385		

Baby put to breast within 1hr	No	2	0.5	0	1	1	2	2.893	0.235
	Yes	383	99.5	222	66	95	383		
	Total	385	100	222	67	96	385		
Bf support while rooming in	No	3	0.8	2	1	0	3	1.237	0.539
	Yes	382	99.2	220	66	96	382		
	Total	385	100	222	67	96	385		
Formula feeds	No	342	88.8	195	60	87	342	.567	0.753
	Yes	43	11.2	27	7	9	43		
	Total	385	100	222	67	96	385		
Nipple shield	No	366	95.1	210	63	93	366	.928	0.629
	Yes	19	4.9	12	4	3	19		
	Total	385	100	222	67	96	385		
Intended bf duration	<12 M	2	0.5	0	1	1	2	2.893	0.235
	>12 M	383	99.5	222	66	95	383		
	Total	385	100	222	67	96	385		

Labour and birth characteristics were analyzed and found that, 283(73.5%) of the respondents had Cesarean section and only 102(26.5%) had delivered vaginally. All the respondents had got the support in delivery room for breast feeding. Almost all the babies were put to breast within 1 hour and were not given formula feeds or nipple shield.

There is significant relationship between maternal breast feeding with mode of delivery (p value- 0.000) . Patients with normal vaginal delivery had higher satisfaction levels

First 6 weeks characteristics with Maternal breast feeding evaluation scale

		First 6 weeks characteristics with Maternal breast feeding evaluation scale							
		Frequency (n)	Percent (%)	Maternal breast feeding evaluation scale			Total	χ^2	p value
				Very Satisfied	Average	Satisfied			
Living with partner	No	50	13	30	7	13	50	.463	0.793
	Yes	335	87	192	60	83	335		
	Total	385	100	222	67	96	385		
Low milk	No	340	88.3	201	62	77	340	8.334	0.015*
	Yes	45	11.7	21	5	19	45		
	Total	385	100	222	67	96	385		
Pain while breastfeeding	No	339	88.1	200	62	77	339	7.772	0.021*
	Yes	46	11.9	22	5	19	46		
	Total	385	100	222	67	96	385		
Nipple crack/nipple	**No**	**328**	**85.2**	**49**	206	73	351	24.264	0.000*
	Yes	**57**	**14.8**	**18**	16	23	34		

anatomy problems	**Total**	**385**	**100**	**67**	222	96	385		
Difficult latching on	No	367	95.3	215	66	86	367	9.777	0.008*
	Yes	18	4.7	7	1	10	18		
	Total	385	100	222	67	96	385		
Oversupply	No	357	92.7	210	64	83	357	7.518	0.023*
	Yes	28	7.3	12	3	13	28		
	Total	385	100	222	67	96	385		
Use of formula feeds	No	343	89.1	203	63	77	343	10.737	0.005*
	Yes	42	10.9	19	4	19	42		
	Total	385	100	222	67	96	385		

Breast feeding satisfaction with first 6 weeks characteristics were analyzed and found that 80% of the study population were living with their partners, 340(88.3%) patients had high milk supply. 339 (88.1%) were not having any pain while breast feeding, 351 (91.2%) were not having nipple crack/nipple anatomy problems, 367 (95.3%) were not facing any difficulties in latching, 357(92.7%) were not having any oversupply problems, 343(89.1%) were not using any formula feeds for their newborn.

There is significant relationship between Maternal breast feeding satisfaction and Low milk supply (p= 0.015), pain while breastfeeding (p=0.021), difficult latching on(p= 0.008), oversupply (p=0.023), use of formula feeds(p= 0.005) and nipple crack/nipple anatomy problems (p=0.000)

VII. DISCUSSION

Our study showed higher level of satisfaction with breast feeding in the first 6 weeks postpartum with mean score of 130 and maximum score of 144 which is which is more or less similar to a Brazilian study that showed the median MBFES score obtained (124 points) was close to the maximum score (145 points).[12]

Juliana et al had shown MBFES scores that ranged from 63- 145, with a median of 124[10].

Hence, we can conclude that, overall, the levels of maternal satisfaction with breastfeeding were higher in our sample when compared to the other studies.

Andrea et al study showed their mean maternal age was 29±6.6years while in our study the mean maternal age was 26.82 years[12].

Jenny et al showed that higher maternal age was positively associated with higher breast feeding satisfaction, while our study did not reveal the same[15].

Juliana et al showed no significance with breast feeding satisfaction and Parity[10]. Nicole et al showed that multiparous women had higher breastfeeding intended duration and less breastfeeding problems[13]. Our study revealed that multiparous women had higher level of satisfaction than primi parous women.

Andrea et all showed that higher levels of maternal satisfaction with breastfeeding in the first month postpartum was high in mothers living with their partners[12]. While in our study there is no significant relationship between the 2 factors. Juliana et al showed that women living with their partners had higher satisfaction level though not satistically significant[10].

Shiue shan et al revealed that women who undergo ART exclusively breastfeed for a shorter duration compared to fertile women[14] , while in our study there was no significant relation between the two factors.

Our study revealed that patient's who had vaginal delivery had higher levels of satisfaction similar to Juliana et al[10] study.

Andrea et al revealed no significant relation between breastfeeding satisfaction and factors like baby put to breast within one hour of life, breastfeeding support in delivery room, while our study also revealed the same[12].

Cooke et al., using MBFES in Australia, also observed that perceived low milk supply in the 6 weeks reduced satisfaction levels significantly[5]. Our study showed that mother who had low milk supply had lower satisfaction levels. Andrea et al[12] has also shown the same results.

Labarère et al. study, found that facing any breastfeeding difficulty after discharge was associated with lower levels of satisfaction[6]. Our study also showed similar results.

Cooke at al stated that the most frequent breastfeeding problems at 2 weeks postpartum were sore nipples, poor attachment and low milk supply and at 6 weeks most of the women identified the baby's responses to feeding were the most common problems[5].

Robert et al stated that women intending to breastfeed before pregnancy had average duration of 3.5 months of exclusive breasteeding duaration while it was 2 months in other women[16] .

Andrea et al had shown that use of formula feeds at 1 month postpartum has reduced the satisfaction levels while our study also stated the same[12]. Caroline at al also stated that in hospital formula supplementation was associated with nearly 3 fold greater risk of breastfeeding cessation by day 60 [12].

There was a higher satisfaction levels with breastfeeding in multiparous women and without cracked nipples/ anatomical problem in the first 6 weeks.

In Andrea et al study, the variables that were most strongly associated with higher maternal satisfaction were found to be considerably higher during the puerperium times. Maternal satisfaction with breastfeeding in the first month postpartum was high among women who lived with their partner, who planned to breastfeed for 12 months or more and who did not report low milk supply. Our study also showed that seven variables which were similar to Andrea et al study[12].

However, Labarère et al., in France, had already found an association between higher levels of satisfaction with breastfeeding at 6 months and agreement between intended and actual breastfeeding duration[6].
Therefore, not having breastfeeding-related problems, especially in the beginning, seems to favor positive feelings towards the breastfeeding experience.
Schlomer et al assessed 30 first time breast feeding mothers and stated that all had higher satisfaction levels with the MBFES one week after birth and stated that it is regardless of occurrence of breastfeeding problems[11].

Henshaw et al[8] had shown the association between emotional health and breast feeding outcomes and concluded that 2 days postpartum predicted positive emotional adjustment and fewer depressive symptoms at 6 weeks postpartum

Juliana et al[10] had also shown the association between breastfeeding satisfaction and postpartum depression symptoms and showed that women with higher maternal breastfeeding satisfaction have no paotpartum depression symptoms and vice versa.

CONCLUSION

From the present study it could be identified that there are certain key factors that are directly in association concerning with maternal satisfaction with breast feeding during the puerperium time.
Our study identified seven variables that showed significant association with satisfaction levels with breastfeeding such as Parity, Low milk supply, Pain while breastfeeding, Difficult latching on, Oversupply, Nipple crack/nipple anatomy problems, Use of formula feeds.
Furthermore MBFES scoring system appears to be an efficient means for identifying the key variables or factors that are majorly impacting the maternal satisfaction regards to breast feeding. Furthermore it could be believed that by joint efforts from the healthcare community and their effective means of strategizing for greatly improving maternal satisfaction with breastfeeding can be attributed as part of breastfeeding promotion strategies. Such actions might serve as a major initiative step during the prenatal care times, as it is necessary to exhibit special emphasis towards the fact as women who are planning for breastfeeding over less than 12 months and who are experiencing higher parity statuses and nipple crack/ anatomical complications are less likely to experience a sense of poor to average satisfaction. Also, by preventing breastfeeding problems could be attributed as an important strategy for increasing the level of maternal satisfaction with breastfeeding.
To provide more appropriate and mother centered care, there is a need for a shift in how healthcare professionals approach to include

maternal satisfaction with breast feeding as a desired outcome along with increasing breastfeeding duration rates[9].

We believe that working towards increasing maternal satisfaction with breastfeeding should be a part of breastfeeding promotion strategies.

Efforts in this direction should initiate during prenatal care, with special attention to women who have nipple anatomy problems as they may tend to have lower levels of satisfaction.

LIMITATIONS

Our study did not study the association between emotional health and breastfeeding satisfaction, which is a limitation.

Not only emotional health, our study did not show the relationship between maternal breastfeeding satisfaction and mental health. Less breastfeeding satisfaction may affect the mental health of a woman or vice versa.

As this a single centric study, the results are confined to one geographical region, hence a multicentric study will be able give a detailed insight into this.

REFERENCES

1. Victora CG, Bahl R, Barros AJ, França GV, Horton S, Krasevec J, et al. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. Lancet. 2016;387(10017):475–90 +
2. Kim HS, Nam ES. Prediction of breastfeeding intentions and behaviors: An application of the theory of planned behavior. Journal of Korean Academy of Nursing. 1997;27(4):796–806.doi:10.4040/jnas.1997.27.4.796. [CrossRef] [Google Scholar]
3. Yang HJ, Seo JM. A structural model for primiparas' breastfeeding behavior. Journal of Korean Academy of Nursing. 2013;43(3):399–408. doi:10.4040/jkan.2013.43.3.399. [PubMed] [CrossRef] [Google Scholar]
4. Huang HC, Wang SY, Chen CH. Body image, maternal-fetal attachment, and choice of infant feeding method: A study in Taiwan. Birth. 2004;31(3):183–188. doi:10.1111/j.0730-7659.2004.00303.x. [PubMed] [CrossRef] [Google Scholar]
5. Cooke M, Sheehan A, Schmied V. A description of the relationship between breastfeeding experiences, breastfeeding satisfaction, and weaning in the first 3 months after birth. J Hum Lact. 2003;19(2):145–56.
6. Labarère J, Gelbert-Baudino N, Laborde L, Baudino F, Durand M, Schelstraete C, et al. Determinants of 6-month maternal satisfaction with breastfeeding experience in a multicenter prospective cohort study. J Hum Lact. 2012;28(2):203–10.
7. Galvão PDMG. Amamentaçãobemsucedida: algunsfactoresdeterminantes. Successful breastfeeding: some determining factors: Universidade do Porto; 2002. [Thesis].
8. Henshaw EJ, Fried R, Siskind E, Newhouse L, Cooper M. Breastfeeding self-efficacy, mood, and breastfeeding outcomes among primiparous women. Journal of Human Lactation. 2015 Aug;31(3):511-8.
9. Edwards R. An Exploration of Maternal Satisfaction With Breastfeeding as a Clinically Relevant Measure of Breastfeeding Success. Journal of Human Lactation. 2018;34(1):93-96. doi:10.1177/0890334417722509
10. Avilla, Juliana Castro de, et al. "Association between maternal satisfaction with breastfeeding and postpartum depression symptoms." *Plos one* 15.11 (2020): e0242333.
11. Schlomer J, Kemmerer J, Twiss J. Evaluating the association of two breastfeeding assessment tools with breastfeeding problems and breastfeeding satisfaction. J Hum Lact. 1999;15(1):35–9.
12. de Senna, A.F.K., Giugliani, C., Avilla, J. *et al.* Maternal satisfaction with breastfeeding in the first month postpartum and associated factors. *Int Breastfeed J* **15**, 72 (2020). https://doi.org/10.1186/s13006-020-00312-w
13. Hackman NM, Schaefer EW, Beiler JS, Rose CM, Paul IM. Breastfeeding

outcome comparison by parity. Breastfeed Med. 2015 Apr;10(3):156-62. doi: 10.1089/bfm.2014.0119. Epub 2014 Dec 30. PMID: 25549051; PMCID: PMC4378341.

14. Weng S-S, Chien L-Y, Huang Y-T, Huang Y-T, Chang M (2022) Why does mode of conception affect early breastfeeding outcomes? A retrospective cohort study. PLoS ONE 17(3): e0265776. https://doi.org/10.1371/journal.pone.0265776
15. Ericson J, Lampa E, Flacking R. Breastfeeding satisfaction post hospital discharge and associated factors - a longitudinal cohort study of mothers of preterm infants. Int Breastfeed J. 2021 Mar 25;16(1):28. doi: 10.1186/s13006-021-00374-4. PMID: 33766069; PMCID: PMC7992863.
16. E. Robert, Y. Coppieters, B. Swennen, M. Dramaix, "Breastfeeding Duration: A Survival Analysis—Data from a Regional Immunization Survey", *BioMed Research International*, vol. 2014, Article ID 529790, 8 pages, 2014. https://doi.org/10.1155/2014/529790
17. Chantry CJ, Dewey KG, Peerson JM, Wagner EA, Nommsen-Rivers LA. In-hospital formula use increases early breastfeeding cessation among first-time mothers intending to exclusively breastfeed. J Pediatr. 2014 Jun;164(6):1339-45.e5. doi: 10.1016/j.jpeds.2013.12.035. Epub 2014 Feb 14. PMID: 24529621; PMCID: PMC4120190.
18. Leff EW, Jefferis SC, Gagne MP. The Development of the Maternal Breastfeeding Evaluation Scale. Journal of Human Lactation. 1994;10(2):105-111. doi:10.1177/089033449401000217