

Determinants of Breastfeeding Attitudes of Mothers in Rawalpindi Pakistan; A Cross-sectional Study

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Abstract

Objectives; This study aimed to assess factors that determine maternal attitude towards breastfeeding.

Methodology; The cross-sectional questionnaire-based study was conducted at Fauji Foundation Hospital, focusing on the OPD Clinics in the Department of Pediatrics and the Maternity Ward in Rawalpindi. The study utilized the Iowa Infant Feeding Attitude Scale (IIFAS) to assess infant feeding attitudes, along with exploring breastfeeding practices. The study sample comprised a total of 377 mothers. Data collection took place in October 2023.

Results; Participants exhibited strong agreement on the convenience of formula feeding (93.2%) and the benefits of breast milk (93.6%), with varying opinions on overfeeding risks and bonding. Socio-demographic factors like age, socio-economic status, education, and pregnancy complications significantly influenced attitudes toward infant feeding, while, occupation, and chronic disease history showed no significant impact.

Conclusion; The study underscores the multifaceted influence of socio-demographic factors on maternal attitudes toward infant feeding and breastfeeding practices, emphasizing the necessity of tailored interventions to support breastfeeding and ensure optimal infant nutrition.

Key Word: Knowledge, Attitude, Practice, Breastfeeding.

INTRODUCTION

Breastfeeding strengthens the bond between mother and newborn and offers numerous benefits. Globally, only 44% of newborns aged 0 to 6 months received exclusively breast milk from 2015 to 2020, despite the potential to save up to one million children under five if breastfeeding rates increased.(1) Understanding these elements is crucial for developing effective healthcare programs and educating policymakers and healthcare professionals worldwide about the significance of promoting and supporting breastfeeding.(2)

A comprehensive analysis of mothers' experiences reveals that skin-to-skin contact after delivery promotes exclusive breastfeeding and initiates breastfeeding, reducing the need for formula in hospitals.(3) The relationship between childhood morbidity and exclusive breastfeeding underscores the benefits of this approach in reducing an infant's risk of respiratory and gastrointestinal diseases.(4) In a joint statement for World Breastfeeding Week, the executive directors of UNICEF and WHO acknowledged that while the global prevalence of exclusive breastfeeding has risen by 10 percentage points to 48%, more efforts are needed to achieve the goal of 70% by 2030.(5)

Cultural norms, breastfeeding attitudes, and socioeconomic factors influence breastfeeding rates. A cross-sectional study revealed that in 2022, breastfeeding rates varied: Jordan (25%), Egypt (40%), Morocco (35%), Palestine (39%), Syria (29%), Tunisia (14%), Algeria (29%), Iraq (26%), and Iran (53%).(6) According to an analysis of Kangaroo Mother Care in the Middle East, just two countries—Egypt and Afghanistan—showed breastfeeding rates exceeding 50% for the first six months, while nine countries—Iran, Kuwait, Lebanon, Oman, and Yemen—showed rates below 25%.(7) Researches emphasize the global necessity for promoting breastfeeding due to its manifold benefits. However, breastfeeding rates vary between countries and remain below recommended levels. Factors influencing breastfeeding include maternal age, income, education, mode of birth, access to support, healthcare professionals' attitudes, and hospital environment. (6, 8–12) Numerous studies have demonstrated that various factors, including education, family income, employment status, previous breastfeeding experience, and the intention to exclusively breastfeed, positively influence women's attitudes toward breastfeeding. Conversely, it has been observed that factors such as maternal employment, maternal illness, and lack of paternal support, cesarean section delivery, preterm birth, infant health complications, and admission to the neonatal intensive care unit (NICU) negatively impact breastfeeding attitudes.

This study's significance lies in uncovering the factors shaping women's attitudes toward breastfeeding at Fauji Foundation Hospital in Rawalpindi. By identifying these determinants, the research can inform targeted interventions, policy formulation, and professional training, addressing a gap in local literature and ultimately enhancing breastfeeding practices and maternal-infant health outcomes. Gaining insight into the nation-specific factors that shape women's perceptions of breastfeeding is crucial for developing effective healthcare interventions and for educating policymakers and healthcare professionals. However, research focusing on the determinants of women's attitudes toward breastfeeding in Rawalpindi is limited. Therefore, the objective of this study is to examine the factors influencing women's attitudes toward breastfeeding at Fauji Foundation Hospital, Rawalpindi.

MATERIAL AND METHODS

The cross-sectional study was conducted at Fauji Foundation Hospital, focusing on the OPD Clinics in the Department of Pediatrics and the Maternity Ward in Rawalpindi. The sample size, which had been determined using the WHO sample size calculator with a 95% confidence level, an anticipated population proportion of 0.48, and a 5% absolute precision, was set at 377. A non-probability consecutive sampling technique was employed. Inclusion criteria encompassed postnatal mothers aged between 18 and 38, attending the Lactation Consultation Clinic in the Department of Pediatrics or the Maternity Ward. Exclusion criteria involved women under anesthesia or perceived as too tired during data collection. Data collection was initiated post-ethical approval from the institute. Both verbal and written consent were obtained after briefing participants on the study's purpose, ensuring comprehension. Participant anonymity was maintained, and confidentiality was assured. The data collection tool comprised three sections: demographics and socioeconomic status, the Iowa Infant Feeding Attitude Scale (IIFAS), and breastfeeding practices.

Sociodemographic characteristics, pregnancy, and delivery information were collected to gather information about the mothers' sociodemographic characteristics, such as age, education, and socioeconomic status. It also gathered data related to pregnancy and delivery, including mode of delivery, gestational age, and complications during pregnancy or delivery, admission of the baby to the neonatal intensive care unit (NICU), and receiving antenatal counseling for breastfeeding.

The Iowa Infant Feeding Attitude Scale (IIFAS) was utilized to measure mothers' attitudes toward infant feeding. It consisted of 17 items with a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Eight statements indicated a positive attitude toward breastfeeding, while nine statements

indicated a positive attitude toward formula feeding. Statements indicating a positive attitude toward breastfeeding were reverse-scored. The total IIFAS score ranged from 17 to 85, with higher scores reflecting a more positive attitude toward breastfeeding. It was further classified into categories: positive to breastfeeding, neutral, and positive to formula feeding. The tool underwent pilot testing on 30 participants to ensure clarity, response time, and reliability. Cronbach’s alpha analysis was used to assess reliability, with a coefficient of >0.7 indicating good reliability.

The section on breastfeeding practices consisted of five questions assessing breastfeeding practices, including intention to breastfeed, willingness to breastfeed exclusively, receiving counseling for breastfeeding, and time of initiation of breastfeeding. All data collected in this section were quantitative.

Data analysis involved examining completeness and consistency, followed by cleaning. Statistical analysis was conducted using SPSS version 21. Descriptive statistics summarized sociodemographic characteristics, pregnancy and delivery variables, and breastfeeding-related variables. The mean and standard deviation for individual IIFAS items and total attitude scores toward breastfeeding were calculated. Independent t-tests and one-way ANOVA tests determined significant differences in attitude scores across patient characteristics.

RESULTS

A total number of 377 participants and their mean age ranged from 18-38 years (mean±SD =28.74 ± 10 years).

Table-1; Demographic profile of participants (n=377).

variables	categories	(n)	(n)%
Age	<i>18-28</i>	203	54.81%
	<i>28-38</i>	174	46.19%
Offspring	<i>Less than 3</i>	167	44.31%
	<i>More than 3</i>	210	55.69%
Education	<i>High school or less</i>	95	25.20%
	<i>Undergraduate</i>	237	62.96%
	<i>Graduate</i>	47	12.48%
Occupation	<i>Employed</i>	216	57.35%
	<i>Unemployed</i>	161	42.65%
Monthly income	<i>Less than 50,000</i>	307	81.49%
	<i>More than 50,000</i>	70	18.51%
History of chronic disease	<i>Presence of chronic disease</i>	120	31.82%
	<i>Absence of chronic disease</i>	257	68.18%
Pregnancy complication	<i>None pregnancy complication</i>	280	74.34%

	<i>Gestational diabetics</i>	45	11.94%
	<i>Hypertension</i>	30	7.96%
	<i>Preeclampsia</i>	15	3.98%
	<i>other</i>	7	1.85%

The demographic profile of the participants (n=377) reveals that the majority of mothers were aged between 18-28 years (53.81%) compared to those aged 28-38 years (46.19%). Family size distribution shows that 44.31% of participants had less than 3 offspring, while 55.69% had more than 3. In terms of education, 62.96% had an undergraduate degree, 25.20% had a high school education or less, and 12.48% held a graduate degree. Employment status indicates that 57.35% were employed, and 42.65% were unemployed. Regarding monthly income, 81.49% reported earning less than 50,000, while 18.51% earned more than 50,000. Additionally, 31.82% reported a history of chronic disease, with the majority (68.18%) having no chronic conditions. Concerning pregnancy complications, 74.34% experienced none, while 11.94% had gestational diabetes, 7.96% had hypertension, 3.98% had preeclampsia, and 1.85% reported other complications.

Table-II; Mothers’ attitudes towards breastfeeding on Iowa infant feeding attitude scale (IIFAS-t) (n=377).

item	variable	M	SD	Agree%	Neutral%	Disagree%
1	<i>Formula feeding is more convenient than breast-feeding.</i>	8.12	1.31	93.2%	4.1	2.7%
2	<i>Breast-feeding increases mother–infant bonding.</i>	8.12	1.62	93.6%	2.3%	4.1%
3	<i>Breast milk is lacking in iron.</i>	7.41	1.71	82.7	10.9%	6.4%
4	<i>Formula fed babies are more likely to be overfed than breast-fed babies.</i>	5.46	2.04	46.8%	28.2%	25%
5	<i>Formula feeding is the better choice if a mother plans to work outside the home.</i>	6.63	1.67	65.5%	25.9%	8.6%
6	<i>Mothers who formula feed miss one of the great joys of motherhood.</i>	6.61	1.92	61.4%	28.2%	10.5%
7	<i>Women should not breast-feed in public places such as restaurants.</i>	7.67	1.71	84.1%	10.9%	5.0%
8	<i>Babies fed breast milk are healthier than babies who are fed formula.</i>	6.88	1.96	70.0%	18.2%	11.8%
9	<i>Breast-fed babies are more likely to be overfed than formula fed babies.</i>	6.94	1.89	72.7%	19.1%	8.2%
10	<i>Fathers feel left out if a mother breast-feeds.</i>	7.28	1.55	82.7%	12.3%	5.0%
11	<i>Breast milk is the ideal food for babies.</i>	8.08	1.34	93.6%	3.6%	2.7%
12	<i>Breast milk is more easily digested than formula.</i>	7.38	1.63	77.3%	19.5%	3.2%

13	<i>Formula is as healthy for an infant as breast milk.</i>	6.97	1.63	77.7%	15.0%	7.3%
14	<i>Breast-feeding is more convenient than formula feeding.</i>	7.79	1.34	89.1%	8.6%	2.3%
15	<i>Breast milk is less expensive than formula.</i>	8.28	1.11	95.9%	2.3%	1.8%
16	<i>A mother who occasionally drinks alcohol should not breast-feed her baby.</i>	4.77	2.18	32.2%	19.1%	47.7%
17	<i>The nutritional benefits of breast milk last only until the baby is weaned from breast milk.</i>	6.88	2.19	73.6%	8.6%	17.7%

The adjusted values indicate participants' perceptions regarding breastfeeding and formula feeding. Results suggest a strong agreement that formula feeding is more convenient than breastfeeding (M = 8.12) and that breast milk is the ideal food for babies (M = 8.08), with high percentages agreeing (93.2% and 93.6% respectively). However, there is some disagreement regarding whether formula-fed babies are more likely to be overfed than breastfed babies (M = 5.46, 25% disagree), and whether breastfeeding increases mother-infant bonding (M = 8.12, 4.1% disagree). Additionally, opinions vary regarding the perceived inconvenience of breastfeeding compared to formula feeding (M = 7.79, 2.3% disagree) and whether women should breastfeed in public places (M = 7.67, 5% disagree). Overall, these findings reflect a complex landscape of attitudes and beliefs surrounding infant feeding practices among participants.

Table-III; Maternal socio-demographic factors Associated with attitudes toward infant feeding and breastfeeding practices (n = 377).

<i>Variable</i>	<i>Category</i>	<i>Low infant feeding attitude (%)</i>	<i>Breastfeeding practices. (%)</i>	<i>P-values</i>
Age	18-28	252 (66.9)%	221(58.6)%	0.002
	28-38	125 (33.1)%	156 (41.4)%	
Socio-economic status	lower	103(27.3)%	130 (34.5)%	0.001
	middle	224(59.4)%	150 (39.8)%	
	upper	50(13.3)%	167(25.7)%	
offspring	<3	192 (50.9)%	157 (41.6)%	0.003
	>3	185 (49.1)%	220 (58.4)%	
Education level	High or less	41 (10.9)%	49 (13.0)%	0.003
	Undergraduate	213(56.5)%	232(61.6)%	
	Postgraduate	123(23.6)%	96 (25.5)%	
Occupation	Employed	90(23.9)%	80(21.2)%	0.459
	Unemployed	287(76.1)%	297(78.8)%	
Monthly income	Above 50,000	148(39.2)%	271 (71.8)%	0.001
	Less 50,000	229(60.8) %	106 (28.2)%	
History of chronic disease	<i>Presence of chronic disease</i>	50(13.6)%	66(17.5)%	0.149
	<i>Absence of chronic disease</i>	327(86.7) %	311 (82.5)%	
Mod of delivery	<i>normal</i>	273(72.4)%	223(59.0)%	0.001

	<i>caesarian</i>	104(27.6)%	154(40.8)%	
Pregnancy complication	none	289 (76.7) %	115(30.5)%	0.001
	<i>Gestational diabetics</i>	10 (2.7) %	65 (17.3)%	
	<i>Hypertension</i>	20(5.3)%	72(19.1)%	
	<i>Preeclampsia</i>	18(4.8)%	45(11.9)%	
	<i>other</i>	40(10.6)%	80(21.2)%	

The p-values provided in the table signify the statistical significance of associations between various factors and attitudes toward infant feeding and breastfeeding practices among mothers. Specifically, significant associations are observed for age ($p = 0.002$), socio-economic status ($p < 0.001$), number of offspring ($p = 0.003$), monthly income ($p = 0.001$), mode of delivery ($p = 0.001$), education level ($p = 0.003$), and pregnancy complications ($p = 0.001$). These results indicate that differences in attitudes exist across different age groups, socio-economic statuses, numbers of offspring, monthly income brackets, modes of delivery, and pregnancy complication categories. Conversely, no statistically significant associations are found for occupation ($p = 0.459$), and history of chronic disease ($p = 0.149$), suggesting that these factors may not significantly influence attitudes toward infant feeding and breastfeeding practices among mothers in the study population.

DISCUSSION

The analysis of maternal attitudes toward infant feeding and breastfeeding practices among 377 participants revealed a diverse demographic profile. A majority of mothers were aged between 18-28 years (54.81%), and the distribution of family size indicated that 44.31% had less than 3 offspring, while 55.69% had more than 3. In terms of education, 62.96% had an undergraduate degree, 25.20% had a high school education or less, and 12.48% held a graduate degree. Employment status showed that 57.35% were employed, while 42.65% were unemployed. Moreover, 81.49% reported earning less than 50,000 monthly income, and 31.82% reported a history of chronic disease, with 68.18% having no chronic conditions. Regarding pregnancy complications, 74.34% experienced none, while 11.94% had gestational diabetes, 7.96% had hypertension, 3.98% had preeclampsia, and 1.85% reported other complications.

Mothers' attitudes towards breastfeeding as assessed by the Iowa Infant Feeding Attitude Scale (IIFAS-t) with a sample size of 377 participants. Overall, the majority of mothers agreed that breastfeeding increases mother-infant bonding ($M = 8.12$, $SD = 1.62$, 93.6%), and that breast milk is the ideal food for babies ($M = 8.08$, $SD = 1.34$, 93.6%). Additionally, a high percentage of participants believed that breast milk is less expensive than formula ($M = 8.28$, $SD = 1.11$, 95.9%), and that formula feeding is more

convenient than breast-feeding ($M = 8.12$, $SD = 1.31$, 93.2%). This study in line with previous study conducted by YU, J in 2020 indicates, agreeing more with the statement "Formula feeding is more convenient than breastfeeding" was associated with lower exclusive breastfeeding rates at 3 months. (16) On the contrary, there were notable disagreements among mothers regarding certain aspects. For instance, there was a substantial disagreement concerning the statement that formula feeding is the better choice if a mother plans to work outside the home ($M = 6.63$, $SD = 1.67$, 65.5%). Similarly, there was a significant disagreement regarding the idea that formula is as healthy for an infant as breast milk ($M = 6.97$, $SD = 1.63$, 77.7%). same study was conducted in south Africa, indicated that women was strong concerning about 'breast milk is best' and that the benefits of breastfeeding were the primary reason for planning to breastfeed. (17) Moreover, our study analysis showed that mother attitudes were more evenly divided on certain topics. For instance, opinions were mixed regarding whether breastfeeding in public places should be acceptable ($M = 7.67$, $SD = 1.71$, Agree% = 84.1%, Disagree% = 5.0%), and whether fathers feel left out if a mother breastfeeds ($M = 7.28$, $SD = 1.55$, Agree% = 82.7%, Disagree% = 5.0%). Furthermore, there were also misconceptions noted among participants. For instance, a significant percentage of mothers believed that breast-fed babies are more likely to be overfed than formula-fed babies ($M = 6.94$, $SD = 1.89$, 72.7%). Similarly, there was a misconception about the nutritional benefits of breast milk, with some participants believing that these benefits last only until the baby is weaned ($M = 6.88$, $SD = 2.19$, 73.6%).

Further analysis explored the associations between maternal socio-demographic factors and attitudes toward infant feeding and breastfeeding practices. Significant associations were found for age ($p = 0.002$), Another same study conducted in Saudi Arabia pointed out that younger mothers introduced weaning food around 4 weeks earlier than older mothers (mean differences were -0.4 , 95% CI -0.71 , -0.13 ; $p = 0.031$). (18) In our study, women who had undergraduate and postgraduate education had a more positive attitude towards breastfeeding, which is likely to be associated with a greater tendency to seek knowledge on the health aspects of infant nutrition. Burger et al. (2022) analyzed the relationship between mothers' education and duration of breastfeeding and found that those who had completed higher education were more likely to breastfeed and continued breastfeeding for a longer time than those with lower education levels [19]. In our study Socio-economic status ($p < 0.001$), number of offspring ($p = 0.003$), monthly income ($p = 0.001$), mode of delivery ($p = 0.001$), and pregnancy complications ($p = 0.001$) showed a significant association with breastfeeding attitude. However, factors such as occupation, and history of chronic disease showed no significant influence on attitudes. A similar study conducted in Malaysia, (17) suggested that the overall IIFAS score was positively associated with higher breastfeeding confidence

($r=0.285$, $p=0.008$), education levels ($r=0.31$, $p=0.003$), household income ($r=0.32$, $p=0.003$), and age ($r=0.28$, $p=0.008$). A study conducted in Jordan, (18) found that factors associated with a positive attitude toward breastfeeding were high income ($p = 0.048$), pregnancy complications ($p = 0.049$), delivery complications ($p = 0.008$), prematurity ($p = 0.042$), intention to breastfeed ($p = 0.002$), and willingness to breastfeed ($p = 0.005$). With binary logistic regression modeling, determinants of attitude positive to breastfeeding were the highest income level and willingness to breastfeed exclusively (OR = 14.77, 95% CI = 2.25–99.64 and OR = 3.41, 95% CI = 1.35–8.63 respectively). However, our study contradicts the findings by Andrea Bushwa in (2020), which suggested that maternal demographic and psychosocial variables were not statistically significantly associated with either concern about infant overeating and becoming overweight or an awareness of infant's hunger and satiety cues.(19)

Recommendation and Limitation; Based on the study findings, tailored breastfeeding promotion programs, community support groups, workplace policies, public health campaigns, healthcare provider training, policy advocacy, and longitudinal studies are recommended to promote breastfeeding as the optimal feeding choice, enhancing maternal and infant health outcomes. The study's limitations include its cross-sectional design hindering causal inference, reliance on self-reported data prone to biases, limited generalizability due to a specific sample, potential questionnaire limitations in capturing all relevant factors, and a lack of exploration into cultural influences on maternal attitudes toward infant feeding and breastfeeding practices.

CONCLUSION; the study highlights the complex interplay of socio-demographic factors in shaping maternal attitudes toward infant feeding and breastfeeding practices. Understanding these factors is crucial for developing targeted interventions and support systems to promote breastfeeding and optimal infant nutrition. Recommendations include tailored education and support programs aimed at overcoming barriers and promoting breastfeeding as the preferred feeding method for infant health and well-being. Further research is warranted to delve deeper into the underlying reasons for the observed associations and to inform the development of more effective interventions.

References

1. Infant and young child feeding [Internet]. [cited 2024 Jan 18]. Available from: <https://www.who.int/news-room/fact-sheets/detail/infant-and-young-child-feeding>
2. CDC. Centers for Disease Control and Prevention. 2023 [cited 2024 Jan 18]. Facts About Nationwide Breastfeeding Goals. Available from: <https://www.cdc.gov/breastfeeding/data/facts.html>

3. Skin-to-skin contact the first hour after birth, underlying implications and clinical practice - PMC [Internet]. [cited 2024 Jan 18]. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6949952/>
4. Hossain S, Mihrshahi S. Exclusive Breastfeeding and Childhood Morbidity: A Narrative Review. *Int J Environ Res Public Health*. 2022 Nov 10;19(22):14804.
5. Joint statement by UNICEF Executive Director and WHO Director-General on the occasion of World Breastfeeding Week [Internet]. [cited 2024 Jan 18]. Available from: <https://www.who.int/news/item/01-08-2023-joint-statement-by-unicef-executive-director-catherine-russell-and-who-director-general-dr-tedros-adhanom-ghebreyesus-on-the-occasion-of-world-breastfeeding-week>
6. Alkhaldi SM, Al-Kuran O, AlAdwan MM, Dabbah TA, Dalky HF, Badran E. Determinants of breastfeeding attitudes of mothers in Jordan: A cross-sectional study. *PLOS ONE*. 2023 May 5;18(5):e0285436.
7. Taha Z, Wikkeling-Scott L. Review of Kangaroo Mother Care in the Middle East. *Nutrients*. 2022 May 28;14(11):2266.
8. ASIMAKI E, DAGLA M, SARANTAKI A, ILIADOU M. Main Biopsychosocial Factors Influencing Breastfeeding: a Systematic Review. *Mædica*. 2022 Dec;17(4):955–62.
9. Relationship between caesarean section and breastfeeding: evidence from the 2013 Turkey demographic and health survey | BMC Pregnancy and Childbirth | Full Text [Internet]. [cited 2024 Jan 19]. Available from: <https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-020-2732-6>
10. McFadden A, Siebelt L, Marshall JL, Gavine A, Girard LC, Symon A, et al. Counselling interventions to enable women to initiate and continue breastfeeding: a systematic review and meta-analysis. *Int Breastfeed J*. 2019 Oct 21;14(1):42.
11. Huang Y, Ouyang YQ, Redding SR. Previous breastfeeding experience and its influence on breastfeeding outcomes in subsequent births: A systematic review. *Women Birth J Aust Coll Midwives*. 2019 Aug;32(4):303–9.

12. Barriers to Breastfeeding: Supporting Initiation and Continuation of Breastfeeding | ACOG [Internet]. [cited 2024 Jan 19]. Available from: <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2021/02/barriers-to-breastfeeding-supporting-initiation-and-continuation-of-breastfeeding>
13. Abdulahi M, Fretheim A, Argaw A, Magnus JH. Adaptation and validation of the Iowa infant feeding attitude scale and the breastfeeding knowledge questionnaire for use in an Ethiopian setting. *Int Breastfeed J*. 2020 Apr 9;15(1):24.
14. Gebreyesus A. Determinants of client satisfaction with family planning services in public health facilities of Jigjiga town, Eastern Ethiopia. *BMC Health Serv Res*. 2019 Dec;19(1):618.
15. Raissian KM, Su JH. The best of intentions: Prenatal breastfeeding intentions and infant health. *SSM - Popul Health*. 2018 Aug 1;5:86–100.
16. Yu J, Wei Z, Lukoyanova O, Borovik T, Fewtrell MS. Maternal infant-feeding attitudes, infant eating behaviors, and maternal feeding choice at 3 and 6 months postpartum: a comparative multicenter international study. *Breastfeeding Medicine*. 2020 Aug 1;15(8):528-34.
17. Stewart-Buchanan A. *Messages influencing infant feeding decisions made by mothers utilising private health care facilities in Johannesburg, South Africa* (Doctoral dissertation).
18. Albar SA. Mothers' feeding practices among infants (4–12 months) and associated factors: A cross-sectional study in Saudi Arabia. *Journal of Nutritional Science*. 2022 Jan;11:e83.
19. Bürger B, Schindler K, Tripolt T, Griesbacher A, Stüger HP, Wagner KH, Weber A, Wolf-Spitzer A. Factors Associated with (exclusive) breastfeeding duration—results of the SUKIE-Study. *Nutrients*. 2022 Apr 20;14(9):1704.
20. Shukri NH, Wells J, Fewtrell M. Differences in maternal characteristics and their associations with breastfeeding attitudes among primiparous mothers. *Midwifery*. 2021 Apr 1;95:102931.
21. Alkhalidi SM, Al-Kuran O, AlAdwan MM, Dabbah TA, Dalky HF, Badran E. Determinants of breastfeeding attitudes of mothers in Jordan: A cross-sectional study. *Plos one*. 2023 May 5;18(5):e0285436.

22. Bushaw A, Lutenbacher M, Karp S, Dietrich M, Graf M. Infant feeding beliefs and practices: Effects of maternal personal characteristics. *Journal for Specialists in Pediatric Nursing*. 2020 Jul;25(3):e12294.
23. Bień A, Kulesza-Brończyk B, Przestrzelska M, Iwanowicz-Palus G, Ćwiek D. The attitudes of polish women towards breastfeeding based on the Iowa Infant Feeding Attitude Scale (IIFAS). *Nutrients*. 2021 Nov 30;13(12):4338.