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Original Research Article

Assess the level of knowledge, attitude, and practices among mothers regarding breastfeeding at tertiary care public hospital, Hayatabad Medical Complex, Peshawar

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Abstract:
Breastfeeding is widely recognized as the optimal source of nutrition for infants and provides essential nutrients and protective antibodies that support healthy growth, development, and immunity. The World Health Organization recommends exclusive breastfeeding during the first six months of life, followed by continued breastfeeding with appropriate complementary feeding for up to two years or beyond. This study aimed to assess mothers' knowledge, attitudes, and practices regarding the benefits and practices of breastfeeding. A descriptive cross-sectional study was conducted in the Pediatric Department of Hayatabad Medical Complex among 102 mothers selected through convenience sampling. Mothers within the childbearing age range were included, while those who refused participation, were seriously ill, or were outside the specified age range were excluded. The findings indicated that 52.9% of mothers had poor knowledge of breastfeeding, whereas 47.1% had good knowledge. Regarding attitudes, 59.8% demonstrated a neutral attitude, 19.6% had a negative attitude, and 20.6% had a positive attitude. In terms of breastfeeding practices, 69.6% of mothers demonstrated good practices, while 29.4% had poor practices. The study concludes that although most mothers reported good breastfeeding practices, substantial gaps in knowledge and attitudes remain. Strengthening breastfeeding education, counseling, and awareness programs is recommended to improve mothers' knowledge, attitudes, and practices and promote optimal breastfeeding outcomes.

Keywords: Breastfeeding, Exclusive breastfeeding, Maternal knowledge, Maternal attitudes, Breastfeeding practices, Infant nutrition, Maternal health, Infant health.

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1. Introduction

Breastfeeding is universally acknowledged as the most effective way to provide infants with the nutrients they need for healthy growth and development. Breast milk is uniquely composed to meet an infant's nutritional requirements and is enriched with antibodies that protect against infections and illnesses. The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life, followed by continued breastfeeding along with appropriate complementary feeding for up to two years or beyond (Pollock & Levison, 2023). Despite these recommendations, breastfeeding practices remain suboptimal in many parts of the world, including Pakistan, where cultural, social, and educational factors play a significant role in shaping maternal behaviors) (UNICEF, 2021).

In Pakistan, especially in areas like Peshawar, the practice of exclusive breastfeeding is often influenced by inadequate knowledge, negative attitudes, and improper practices (Hazir et al., 2013). Many mothers initiate breastfeeding but fail to sustain it exclusively for the recommended duration due to cultural norms, lack of support, and misconceptions (Ahmed et alt., 2021). This situation underscores the need for comprehensive assessment and interventions aimed at improving maternal knowledge, attitudes, and practices regarding breastfeeding.

The research objective of the study is to assess the level of knowledge and attitudes among mothers about breastfeeding benefits and practices. The research questions of the study are: (a) What is the level of knowledge among mothers regarding breastfeeding at HMC, Peshawar? (b) What are the attitudes of mothers towards breastfeeding? (c) What are the current breastfeeding practices among mothers? and (d) What factors influence the breastfeeding behaviors of mothers?

1.1. Operational Definitions

(a) Knowledge:
In this study, "knowledge of breastfeeding" refers to the awareness and understanding mothers have about breastfeeding, including its benefits, recommended duration, techniques, and the health implications for both the mother and child. The knowledge section has a total score of 14, knowledge above 70% is considered good and the rest as poor.

(b) Attitude:
The feelings, beliefs, and predispositions of mothers regarding breastfeeding practices. It consisted of twelve questions out of which five questions favor breastfeeding. There were five possible responses i.e. strongly agree, agree, neutral, disagree and strongly disagree scored as 5,4,3,2 and 1 respectively. Questions favoring formula feed were reverse scored. The total scores range from 12-60. Higher scores (48-60) 80% or above reflect a positive attitude towards breastfeeding, scores between (35-48) 58% or above show a neutral attitude and lower scores (12-34) 20% or above favor a negative attitude towards breastfeeding.

(c) Practice:
The actual behaviors of mothers concerning breastfeeding, including initiation of breastfeeding after birth, exclusivity of breastfeeding, frequency of feeding, and any use of complementary feeding. This section has 5 questions with expected response of yes or no which are scored as 1 and 0 respectively. Mothers with score above 75% are considered as good practice and below as poor practice.

2. Methodology

This study employed a descriptive cross-sectional design and was conducted at Hayatabad Medical Complex (HMC), targeting mothers with infants aged 0–24 months who visited for pediatric care. Eligible participants included mothers who were breastfeeding infants aged 0–12 months and were willing to provide informed consent, while those with medical conditions preventing breastfeeding, those who refused participation, were seriously ill, or fell outside the childbearing age range were excluded. A non-probability convenience sampling technique was used to recruit a sample of 102 participants, calculated using the Raosoft website with a 95% confidence level and a 5% margin of error. Data were collected through an adopted structured questionnaire comprising sections on knowledge, attitude, and practices of breastfeeding, which was explained to the mothers, and their responses were recorded accordingly. Ethical approval was obtained from the Institutional Review Board (IRB) of HMC, and participants were provided with informed consent, assured of confidentiality, and informed of their right to withdraw at any stage.

3. Data analysis and results

3.1. Demographic data

Age:
The study included 102 mothers. Most of them were aged between 26–30 years (35.3%), followed by 21–25 years (26.5%). The majority were Muslim (68.6%), and the rest were Christian (31.4%). More than half lived in urban areas (56.9%) and were housewives (55.9%), while 44.1% were employed. In terms of education, most had completed high school (54.9%), while 27.5% had a degree or above, and 17.6% had primary education. Regarding delivery type, 52.9% had normal vaginal deliveries and 47.1% had cesarean sections. Lastly, 52.9% were multigravida and 47.1% were primigravida.

Variable	Category	Frequency (n)	Percent (%)
Age (years)	15–20	6	5.9
	21–25	27	26.5
	26–30	36	35.3
	31–35	21	20.6
	36–40	12	11.8
Religion	Islam	70	68.6
	Christianity	32	31.4
Residence	Urban	58	56.9
	Rural	44	43.1
Employment	Employed	45	44.1
	Housewife	57	55.9
Education	Primary	18	17.6
	High School	56	54.9
	Degree or Above	28	27.5
Type of Delivery	Normal Vaginal	54	52.9
	Cesarean	48	47.1
Type of Gravida	Primi	48	47.1
	Multi	54	52.9
Total		102	100.0

3.2. Knowledge, Attitude and practice level:

This study aimed to assess the knowledge, attitude, and practices of mothers regarding breastfeeding at Hayatabad Medical Complex, Peshawar. The findings revealed that 52.9% of mothers had poor knowledge about breastfeeding, while 47.1% had good knowledge. In terms of attitude, 59.8% of the mothers demonstrated a neutral attitude towards breastfeeding, 19.6% held a negative attitude, and 20.6% expressed a positive attitude. Regarding breastfeeding practices, 69.6% of mothers exhibited good practices, while 29.4% had poor practices.

Knowledge, Attitude and practices of breastfeed mothers

Variable	Category	Frequency (n)	Percent (%)
Knowledge Score	Poor Knowledge	54	52.9
	Good Knowledge	48	47.1
Attitude Score	Negative Attitude	20	19.6
	Neutral Attitude	61	59.8
	Positive Attitude	21	20.6
Practice	Good Practice	71	69.6
	Poor Practice	30	29.4
Total		102	100.0

(a) Knowledge section:

The section assessed mothers' knowledge regarding breastfeeding. A majority (69.6%) recognized that colostrum is the first milk, and 51.0% understood its importance for maintaining a baby's immunity. However, only 43.1% knew that burping should be done after every feed, while 56.9% correctly believed that breastfeeding should continue for up to two years. Regarding lactation, 55.9% of mothers acknowledged that healthy food improves milk secretion. A significant proportion (63.7%) believed in washing each breast with warm water before breastfeeding, and 54.9% knew that awakening the baby during breastfeeding is beneficial. Furthermore, 56.9% recognized breastfeeding as a means of bonding between mother and child, and 57.8% believed it affects the beauty of mothers. In terms of health, 61.8% were aware that breastfeeding should continue during diarrhea, and 59.8% correctly knew that breastfeeding should stop when weaning begins. Despite this, a large percentage (59.8%) still believed that breastfeeding does not help prevent diseases affecting the breast.

Statement	True (n, %)	False (n, %)
Colostrum is first milk	71 (69.6%)	31 (30.4%)
Colostrum is important for baby to maintain immunity	52 (51.0%)	50 (49.0%)
Burping should be done once after each feed	44 (43.1%)	58 (56.9%)
Breastfeeding should be continued up to two years	58 (56.9%)	44 (43.1%)
Lactating mothers should take healthy food to improve milk supply	57 (55.9%)	45 (44.1%)
During breastfeeding, the mother should sit comfortably	52 (51.0%)	50 (49.0%)
During breastfeeding, mother should maintain eye contact and talk	53 (52.0%)	49 (48.0%)
Wash each breast with warm water before breastfeeding	65 (63.7%)	37 (36.3%)
Awakening the baby while breastfeeding	56 (54.9%)	46 (45.1%)
Breastfeeding helps in mother and child bonding	58 (56.9%)	44 (43.1%)
Breastfeeding can prevent diseases affecting the breast	41 (40.2%)	61 (59.8%)
Breastfeeding affects the beauty of feeding mothers	59 (57.8%)	43 (42.2%)
Mothers should continue to feed the child during diarrhea	63 (61.8%)	39 (38.2%)
Stop breastfeeding when you start weaning	61 (59.8%)	41 (40.2%)

(b) Attitude Section:

The section explored mothers' attitudes toward breastfeeding. Regarding the statement "The benefit of breast milk lasts only as long as the baby is breastfed," 40.2% disagreed, and 25.5% strongly disagreed. On the topic of formula feeding, 29.4% disagreed and 23.5% strongly disagreed that it is more convenient than breastfeeding. When asked about overfeeding, 31.4% agreed that formula-fed babies are more likely to be overfed compared to breastfed babies, while 40.2% disagreed. A significant number (36.3%) disagreed with the idea that formula-feeding mothers miss out on one of the great joys of motherhood. Concerning public breastfeeding, 43.1% disagreed with the statement that women should not breastfeed in public places like restaurants.

The majority of participants (40.2%) disagreed with the statement that breastfed babies are healthier than formula-fed babies, and 29.4% disagreed that breast milk is more easily digested than formula. Interestingly, 34.3% agreed that formula is as healthy as breast milk, while 28.4% disagreed that breast milk is cheaper than formula. Regarding alcohol consumption, 32.4% strongly disagreed with the idea that a mother who occasionally drinks alcohol should not breastfeed her baby. Lastly, 23.5% of mothers strongly disagreed with the claim that breast milk is lacking in iron, and 25.5% disagreed with the statement that formula feed is better if the mother plans to return to work.

Attitude Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The benefit of breast milk lasts only as long as the baby is breastfed.	3 (2.9%)	17 (16.7%)	15 (14.7%)	41 (40.2%)	26 (25.5%)
Formula feeding is more convenient than breastfeeding.	11 (10.8%)	16 (15.7%)	21 (20.6%)	30 (29.4%)	24 (23.5%)
Formula-fed babies are more likely to be overfed than breastfed babies.	13 (12.7%)	16 (15.7%)	21 (20.6%)	32 (31.4%)	20 (19.6%)
Mothers who formula feed miss one of the great joys of motherhood.	15 (14.7%)	16 (15.7%)	19 (18.6%)	37 (36.3%)	15 (14.7%)
Women should not breastfeed in public places such as restaurants.	9 (8.8%)	17 (16.7%)	18 (17.6%)	44 (43.1%)	14 (13.7%)
Breastfed babies are healthier than formula-fed babies.	8 (7.8%)	17 (16.7%)	15 (14.7%)	41 (40.2%)	21 (20.6%)
Breast milk is more easily digested than formula feed.	14 (13.7%)	13 (12.7%)	18 (17.6%)	30 (29.4%)	27 (26.5%)
Formula is as healthy for an infant as breast milk.	18 (17.6%)	13 (12.7%)	13 (12.7%)	35 (34.3%)	23 (22.5%)
Breast milk is cheaper than formula.	18 (17.6%)	16 (15.7%)	11 (10.8%)	29 (28.4%)	28 (27.5%)
A mother who occasionally drinks alcohol should not breastfeed her baby.	12 (11.8%)	14 (13.7%)	13 (12.7%)	30 (29.4%)	33 (32.4%)
Breast milk is lacking in iron.	14 (13.7%)	13 (12.7%)	28 (27.5%)	23 (22.5%)	24 (23.5%)
Formula feed is better if the mother plans to go back to work.	16 (15.7%)	21 (20.6%)	16 (15.7%)	26 (25.5%)	23 (22.5%)

(c) Practice section

In terms of breastfeeding practices, 76 participants (74.5%) exclusively breastfed their babies, while 26 (25.5%) did not. Regarding pre-lactation feeding, 56 mothers (54.9%) provided pre-

lactation feeds, whereas 46 (45.1%) did not. When asked about colostrum feeding, 53 mothers (51.0%) gave colostrum to their babies, while 49 (49.0%) did not. For breastfeeding frequency, 65 mothers (63.7%) breastfed their babies on demand, and 36 (35.3%) did not. Lastly, 75 mothers (73.5%) reported that either they or their baby experienced some form of illness during the period of exclusive breastfeeding, while 26 (25.5%) did not.

Practice Statement	Response	Frequency
Do you breastfeed your baby exclusively?	Yes	76
	No	26
Do you give pre-lactation feed to your baby?	Yes	56
	No	46
Do you give colostrum to your baby?	Yes	53
	No	49
Do you breastfeed your baby on demand?	Yes	65
	No	36
Did you or your baby have any form of illness during exclusive breastfeeding?	Yes	75
	No	26

3.3. Demographic data and knowledge level:

The demographic data indicates variations in knowledge scores across different age groups, with the highest number of participants (36) in the 26-30 years category, where poor knowledge was more prevalent. Regarding religion, Muslim participants showed a balanced distribution of poor and good knowledge, while Christian participants had a higher proportion with poor knowledge. In terms of employment, housewives had a better overall knowledge score, whereas employed individuals had a higher percentage of poor knowledge. Regarding education, participants with high school education had the largest sample, with an even distribution of knowledge scores, while those with primary education tended to show poorer knowledge levels.

Demographic Variable	Category	Poor Knowledge	Good Knowledge	Total
Age	15–20 years	4	2	6
	21–25 years	12	15	27
	26–30 years	20	16	36
	31–35 years	10	11	21
	36–40 years	8	4	12
Religion	Islam	34	36	70
	Christianity	20	12	32
Employment	Employed	28	17	45
	Housewife	26	31	57
Education	Primary	11	7	18
	High School	28	28	56
	Degree or Above	15	13	28

3.4. Demographic data and Attitude level:

The analysis shows that among different age groups, those aged 26-30 years had the highest neutral attitude (24), and the least negative attitudes were observed in the 15-20 years group.

Muslim participants generally had more neutral attitudes compared to Christians. Housewives displayed a greater tendency towards neutral attitudes compared to employed individuals, with housewives also having fewer positive attitudes. Educationally, those with high school education exhibited the highest percentage of neutral attitudes.

Demographic Variable	Category	Negative Attitude	Neutral Attitude	Positive Attitude	Total
Age	15–20 years	0	5	1	6
	21–25 years	2	17	8	27
	26–30 years	6	24	6	36
	31–35 years	6	10	5	21
	36–40 years	6	5	1	12
Religion	Islam	17	40	13	70
	Christianity	3	21	8	32
Employment	Employed	8	26	11	45
	Housewife	12	35	10	57
Education	Primary	3	11	4	18
	High School	12	35	9	56
	Degree or Above	5	15	8	28

3.5. Demographic data and practice level:

The data reveals that the highest number of participants with good breastfeeding practices were in the 26-30 years age group, while the 15-20 years group had the least. Among religious groups, Muslims showed higher good practice scores compared to Christians. Housewives had more good breastfeeding practices than employed mothers. Regarding education, those with high school education exhibited the highest number of good practices, while primary school education had a significant percentage of good practices as well.

Demographic Variable	Category	Good Practice	Poor Practice	Total
Age	15–20 years	5	1	6
	21–25 years	16	10	26
	26–30 years	26	10	36
	31–35 years	14	7	21
	36–40 years	10	2	12
Religion	Islam	48	21	69
	Christianity	23	9	32
Employment	Employed	31	13	44
	Housewife	40	17	57
Education	Primary	15	2	17
	High School	37	19	56
	Degree or Above	19	9	28

4. Discussion

The results showed that 52.9% of mothers had poor knowledge regarding breastfeeding, indicating that a substantial proportion of mothers may lack accurate information about the benefits of exclusive breastfeeding, appropriate initiation time, and recommended duration.

Inadequate knowledge has consistently been identified as a major barrier to optimal breastfeeding, particularly in low- and middle-income countries where maternal education and access to reliable health information may be limited. The World Health Organization recommends exclusive breastfeeding for the first six months of life, followed by continued breastfeeding along with complementary foods up to two years and beyond, as it significantly reduces the risk of infant infections, malnutrition, and mortality (Kumar et al., 2023). The knowledge deficit observed in this study is comparable to findings from other regional studies, which reported that mothers with insufficient breastfeeding knowledge were less likely to exclusively breastfeed and more likely to introduce formula or prelacteal feeds prematurely (UNICEF, 2018).

Regarding maternal attitude, the majority of participants (59.8%) demonstrated a neutral attitude, while only 20.6% had a positive attitude toward breastfeeding. This predominance of neutrality may reflect uncertainty, cultural misconceptions, lack of confidence, or insufficient counseling during antenatal visits. Attitude plays a crucial role in shaping maternal behavior, as mothers who perceive breastfeeding as beneficial and manageable are more likely to initiate and sustain it. Previous research has highlighted that positive maternal attitudes are strongly associated with higher exclusive breastfeeding rates, whereas negative perceptions—such as fear of insufficient milk production, concerns about body image, or workplace barriers—often lead to early discontinuation (Albanus & Ashipala, 2023). Furthermore, social and familial influences, particularly in South Asian cultures, can significantly affect maternal decisions, sometimes overriding medical recommendations. Therefore, neutral attitudes should not be overlooked, as they represent a group that can be positively influenced through targeted education and emotional support.

Despite the gaps in knowledge and the moderate attitudes observed, the study found encouraging results in terms of breastfeeding practices, with 69.6% of mothers reporting good practices. This apparent discrepancy suggests that factors beyond knowledge—such as cultural norms, prior maternal experience, and guidance from healthcare providers—may contribute to appropriate behaviors. Hospital-based initiatives, including immediate skin-to-skin contact, early initiation of breastfeeding, and lactation counseling, have been shown to improve breastfeeding practices even among mothers with limited prior knowledge (Salih, 2018). However, while good practice rates are promising, the coexistence of poor knowledge raises concerns about the long-term sustainability of these behaviors. Mothers who follow proper practices without fully understanding their importance may be more vulnerable to discontinuing breastfeeding when faced with challenges such as perceived low milk supply or infant feeding difficulties.

The findings of this study are consistent with global evidence emphasizing that breastfeeding outcomes are influenced by an interplay of knowledge, attitude, and professional support. The United Nations Children's Fund stresses that effective breastfeeding promotion requires structured education during both antenatal and postnatal periods, as well as community-based interventions to counter myths and misinformation (Barman et al, 2021). Moreover, the landmark Lancet Breastfeeding Series highlighted that scaling up breastfeeding could prevent over 800,000 child deaths annually, underscoring breastfeeding as one of the most cost-effective public health interventions worldwide (Jones, 1986). In the context of Pakistan, where infant morbidity rates remain a public health concern, strengthening maternal awareness can play a vital role in improving child survival and developmental outcomes.

5. Conclusion:

The study highlights the need for enhanced educational interventions to improve mothers' knowledge, attitudes, and practices regarding breastfeeding. Despite a considerable percentage demonstrating good practices, there is a significant proportion of mothers with poor knowledge and neutral or negative attitudes, which could impact breastfeeding duration and quality. The findings suggest the need for targeted educational interventions to address knowledge gaps, particularly among younger and less-educated mothers, emphasizing key practices like colostrum feeding and burping. Culturally sensitive materials that align with religious values can help foster positive breastfeeding attitudes. For employed mothers, workplace policies should support breastfeeding through flexible schedules and dedicated spaces. Community health workers can play a vital role in promoting exclusive breastfeeding and correcting misconceptions, especially in rural areas. Additionally, further qualitative research is recommended to understand demographic-specific barriers and enhance intervention effectiveness.

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