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Breastfeeding knowledge, Attitude and Barriers among Saudi Women in Riyadh

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Abstract
Objectives: The objective of this study was two folds; to assess breast feeding attitudes and knowledge among Saudi women residing in Riyadh. And to determine barriers to breast feeding. Methods: A non-experimental, cross-sectional design was used to collect data from a convenience sample of 340 Saudi mothers. The study participants were recruited from shopping malls, women's cafeterias, and restaurant in Riyadh- Kingdom of Saudi Arabia Mothers were interviewed face-to-face after agreeing to participate in the study. Data was collected by using four set of questionnaires: Socio-demographic Data Questionnaire, Iowa Infant Feeding Attitude Scale (IIFAS), Breast Feeding knowledge Questionnaire, and Perceived Breast Feeding Barriers Questionnaire. Results: The mean age of the mothers was 31.4 (±7.5) years. Almost half of the mothers had a secondary school education (51.7 %) and were housewives (63.1%). 46.2 % of the participant have a houskeeper.51.8% of the participants have no previous experience with breastfeeding and most mothers made the decision method of feeding while they were pregnant (64.7%). the majority of the study participants have a good knowledge regarding breast feeding's health benefits for baby and mother. Statistically significant correlations were found between attitudes toward infant feeding and maternal age (r = .33), also there was a high significant correlation between mother's knowledge and their attitude (r =. 71), Conclusion: There are several barriers that prevent Saudi women from breast feed their children although they have good knowledge about the importance of breast feeding. Health care professionals should actively work with families to overcome breastfeeding barriers.
Keywords: breastfeeding Knowledge, breastfeeding attitude, Saudi women, perceived breastfeeding barriers

Introduction

Breastfeeding is the usual way of providing infants with the nutrients needed for growth and development. The benefits of breast-feeding to the infant and mother have long been identified and are widely acknowledged. The benefits are nutritional, developmental, emotional, immunological, social, economical, and environmental benefits. (Earle, 2012).

Breast feeding should be initiated during the first hour after birth because Colostrum, the yellowish, sticky breast milk formed immediately after delivery. Colostrum is recommended by WHO as the most excellent food for the newborn. Exclusive breastfeeding is recommended up to 6 months of age, with continued breastfeeding by the side of suitable complementary foods up to two years of age (WHO, 2013). Cohort (2012) mentioned that there are many barriers which affect breast feeding; these barriers are linked with young mothers, single mothers, lower income, full-time employment, smoking, Caesarean section and the infant having received supplementation during the first weeks of life. Piper and Parks (2012) reported that negative attitudes of women, their partners, and family members, plus the health care professionals could be a barrier of breastfeeding and in addition the persistently sore and red nipples led to early termination. The aim of this study was two folds; to assess breast feeding attitudes and knowledge among Saudi women residing in Riyadh. And to determine barriers to breast feeding.

Review of literature

WHO (2011) report that "breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants; it is also an integral part of the reproductive process with important implications for the health of mothers. Breastfeeding has an extraordinary range of benefits**.** It has profound impact on a child's survival, health, nutrition and development. It provides the infant with nutrients; vitamins and minerals needed for growth and development for the first six months, and no other liquids or food are needed. In addition, it carries antibodies from the mother to the child. The act of breastfeeding itself stimulates proper growth of the mouth, jaw, and secretion of hormones for digestion (ICN, 2013). Breastfeeding creates a special bond between mother and baby which lead to positive repercussion for life, in terms of stimulation, behavior, speech, sense of wellbeing and security. it also lowers the risk of chronic diseases, such as obesity, high cholesterol, high blood pressure, diabetes, childhood asthma and childhood leukemia. Studies have shown that breastfed infants do

better on intelligence and behavior tests into adulthood than formula-fed babies (Unicef, 2013).Breastfeeding also contributes to maternal health immediately after the delivery because it helps reduce the risk of post-partum haemorrhage. In the short term, breastfeeding delays the return to fertility and in the long term, it reduces breast, uterine and ovarian cancer. Studies have also found an association between early cessation of breastfeeding and post natal depression in mothers (Motee, Ramasawmy, Pugo-Gunsam , Jeewon, 2013).Rachael (2013) stated that between 2000 and 2008, the percentage of US new mothers who breastfed their infants increased from 70.3 percent to 74.6 percent; the percentage who breastfed for six months rose from 34.5 percent to 44.4 percent; and the percentage who breastfed for one year climbed from 16 percent to 23.4 percent. In Saudi Arabia, the declining trend of exclusive breast-feeding from 90% to 50% at the age of 3 months has been reported, (Al-Sekait,2008) and the incidence of the continuation of breast-feeding for up to 2 years has dropped from 32% in 1998 to 3.2% in 2009. In addition, the most common practice used is mixed feeding during the first 3 months of the infant's life. (Khalil and Mahmoud, 2012). In Al-Hassa, Saudi Arabia only24.4% of infants were exclusively breastfed at the age of 6 months , and in whole Saudi Arabia only 33.08% of infant breast feed exclusively for 1st four month.(Khalil and Mahmoud,2012) .

Many barriers exist for mothers who want to breastfeed, in USA, early termination of breastfeeding in cigarette smokers. It was noted that mothers who smoked cited insufficient milk as a reason for a decline in breastfeeding. Negative attitudes of family and friends can pose a barrier to breastfeeding. Some mothers say that they do not ask for help with breastfeeding from their family or friends because of the contradictory information they receive from these sources. (Libbus, Bush , Hockman, 2007). Embarrassment remains an alarming barrier to breastfeeding in the United States and is closely related to disapproval of breastfeeding in public. Embarrassment about breastfeeding is not limited to public settings, however. Women may find themselves excluded from social interactions when they are breastfeeding because others are reluctant to be in the same room while they breastfeed (Brownell, Hutton, Hartman, Dabrow, 2012). Sore nipples, engorged breasts, mastitis, leaking milk, pain, and failure to latch on by the infant are barriers to breast feeding (Libbus, Bush, Hockman, 2007). Employed mothers typically find that returning to work is a significant barrier to breastfeeding. Women often face inflexibility in their work hours and locations and a lack of privacy for breastfeeding or expressing milk, have no place to store expressed breast milk, are unable to find child care facilities at or near the workplace, face fears over job insecurity, and have limited maternity leave benefits.(Khoury, Moazzem, Jarjoura, Carothers, Hinton, 2005).Studies have identified major deficits relevant to breastfeeding in hospital policies and clinical practices, including a low priority given to support for breastfeeding and education about it, inappropriate routines and provision of care, fragmented care, and inadequate hospital facilities for women who are breastfeeding(Lawrence, Lawrence, 2010). Separating mothers from their babies during their hospital stay has a negative impact on the initiation and duration of breastfeeding (Dabrowski, 2007). In addition to the previous barriers in Lebanon certain cultural beliefs and practices also contribute to what women consider to be normal feeding practices. The mistaken belief that, for babies, "big is healthy," can lead to both formula feeding and inappropriate early introduction of solid foods.(Gill, Reifsnider, Mann, Villarreal, Tinkle,2011) The false idea that larger babies are healthier is common among many racial and ethnic groups, and mothers who are part of social networks that hold this belief may be encouraged to supplement breastfeeding with formula if the infant is perceived as thin (Heinig, Follett, Ishii, Kavanagh-Prochaska, Cohen, Panchula, 2006). According to Mosalli, Abd El-Azim , Qutub , Zagoot, Janish (2012) lack of knowledge about breastfeeding, false impressions about inadequate quantities of breast milk produced by lactating women, and ease of use and liberal availability of formula within the community after birth are some of the breastfeeding barriers mentioned by Saudi women. The objective of this study was two folds; to assess breast feeding attitudes and knowledge among Saudi women residing in Riyadh and to determine barriers to breast feeding.

Methods:

Design: A descriptive correlational cross-sectional design was used to answer the following research questions (1) What are mothers' attitudes toward breast feeding (2) To what extent do mothers have knowledge regarding benefits of breast feeding, (3) What are the mothers' perceived breast feeding barriers? (4) Do mothers' knowledge, attitudes and perceived barriers differ by their sociodemographic factors? (5) Is there any correlation between mothers' Knowledge, attitude and perceived barriers? and (6) Which factor among the study variables predicted mother's attitude toward breast feeding?

Sample: Convenience samples of 340 mothers who have at least one child.The study participants were recruited from shopping malls, women's cafeterias, and restaurant in Riyadh. Mothers were interviewed face-to-face after agreeing to participate in the study.

Instruments: Data was collected by using four set of questionnaires: 1) The Socio-demographic Data Questionnaire, 2) Iowa Infant Feeding Attitude Scale (IIFAS) 3) The Breast Feeding knowledge Questionnaire, and 4) The Perceived Breast Feeding Barriers Questionnaire.

The Socio-demographic Data Questionnaire was designed by the researchers. It covers the following:

a. Personal information: age, education, marital status, income, employment status, profession, and housekeeper availability
b. Maternal history: number of children, previous breast feeding experience and duration, previous breast feeding education, time of taking breast feeding decision and source of information regarding breast feeding.

*Iowa Infant Feeding Attitude Scale (IIFAS)***:** This questionnaire was used to measure the attitude of the mothers regarding breast feeding. The IIFAS consists of 17 items with a 5-point Likert scale ranging from 5 (strongly agree) to 1 (strongly disagree). The scale was developed by De La Mora et al. (1999). Approximately one-half of the items were worded in a manner favorable to breastfeeding, and the remaining favorable to formula feeding. Total attitude scores could range from 17 to 85 with higher scores reflecting more positive attitude toward breastfeeding. Total scores are grouped into the following three categories: (1) positive to breastfeeding (70–85), (2) neutral (49–69), and (3) positive to formula feeding (17–48). The IIFAS have been used by several researchers in different international locations: in Australia (Giglia, Binns, Alfonso, & Zhao, 2007; Scott, Binns, Oddy, & Graham, 2006), United States (De La Mora et al., 1999; Marrone, Vogeltanz-Holm, & Holm, 2008; Simmie, 2006), Romania (Wallis et al.,2008), and in Scotland (Dungy et al., 2008; Scott,Shaker, & Reid, 2004; Tappin, Britten, Broadfoot,& McInnes, 2006).The IIFAS was shown in these earlier studies to have good internal consistency, with a Cronbach's alpha that ranges between 0.78 to 0.85 in most of the studies. Permission of using and translating the questionnaire was given to the researcher by the questionnaire designer. IIFAS was translated to Arabic by the researchers through back translation procedure (Brislin, 1970). Internal consistency reliability of the translated questionnaire was (Cronbach's Alpha coefficients = 0 .83)

Breast Feeding Knowledge Questionnaire was developed by the researchers based on the WHO and UNICEF breastfeeding recommendations for optimal infant feeding (Sobti et al. 2002; WHO 2009a) and also a previous research that had similar objectives (Brodribb et al. 2008; Khalil, Mahmoud, 2012). The questionnaire consisted of 15 items regarding the benefits of breast feeding to both infants and mothers. Responses to the knowledge questions were categorized as correct or incorrect. A score of 1 point was given for each correct response. The total score was calculated by summing the individual score of the 15 knowledge questions the score range from 1-15, the higher the score, the higher the knowledge.

The Perceived Breast Feeding Barriers Questionnaire was developed by the researchers. The questionnaire consists of 18 items. The questionnaire items were chosen based on the most identified breast feeding barriers mentioned in the literature. The total score was calculated by summing the individual scores. High scores indicate more barriers identified by mothers.

The content validity of all the instruments was validated by three experts: Two experts in a pediatric nursing and community nursing fields and one pediatrician. A pilot study was done with 20 women who had the same inclusion criteria as the subjects in this study to assess the readability, reliability and culture congruence of all the study questionnaires. The result of the pilot study was helped in refining the questionnaires.

Data Analysis: Data was coded, entered and analyzed using the statistical package for social Sciences (SPSS) version 17. Data was presented using descriptive statistics in the form of frequencies and percentages. Interval and ratio variables were presented in the form of means and standard deviations. The Pearson r test was employed to determine the correlation between the study variables. Regression analysis was used to determine which factors were independently associated with mother's attitude toward breast feeding. The significance level was chosen as $p<0.05$

Results

Mother's age ranged from 17 to 50 years old with a mean of 31.4 (±7.5) years. Almost half of the mothers had a secondary school education (51.7 %) and were housewives (63.1%). 46.2 % of the participant have a housekeeper. 51.8% of the participants have no previous experience with breastfeeding and most mothers made the decision method of feeding while they were pregnant (64.7%) (Table, 1)

Table 1: Frequency Distribution of the Sociodemographic Characteristics of the Sample (N=340)

Item	Frequency n = 340	Percent %
Age		
17 -27	150	44.1
28 – 38	158	46.4
39 – 49	32	9.5
Mean	31.48	
SD	7.57	
Marital Status		
Married	331	97.3
Divorced	9	2.7
Educational Level		
Primary	24	7.2
Intermediate	94	27.6
High school	176	51.7
Bachelor	26	7.6
Post Graduate	16	4.7
Employment		
Employed	125	36.7
Not employed	215	63.1
Profession		
Health related	26	7.6
Not health related	314	92.4
Housekeeper availability		
Yes	157	46.2
No	183	53.9
No. of children	Range 1- 13 child (Mean ± SD) 3.18 ± 2.07	
Previous breastfeeding experience		
No	176	51.8
Yes	164	48.2
Breast feeding duration		
Less than a month	52	31.7
2-4 month	10	6.0
4-6 month	20	12.1
More than 6 months	82	50
Total	164	100
Decision of breast feeding taken		
During pregnancy	220	64.7
After delivery	120	35.2

Research Question 1: What are the mothers' attitudes toward breast feeding?
Descriptive statistics were used to answer this research question. The total attitude scores ranged from 27 to77 (mean 60,6, SD± 6.6).The majority of the participants have a neutral attitude toward breast feeding (89.4%), Positive attitude toward breast feeding was reported by only 7.4% of the participants (diagram 1)

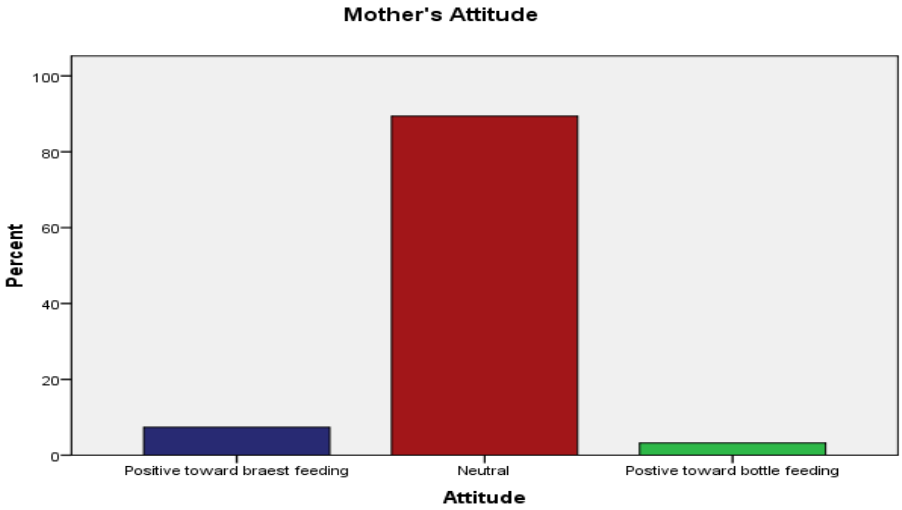

Diagram 1: Mother's attitude towards breast feeding

Research Question 2: To what extant do mothers have knowledge regarding benefits of breast feeding?

The overall mean score of breast feeding knowledge was 12.4 points out of 15. This indicates that the majority of the study participants have a good knowledge regarding breast feeding's health benefits for baby and mother .The majority of the mothers mentioned that breast feeding is the beast feeding for babies (88.8%), it protects the baby from disease (91.4%), protect the mother from breast cancer (85.5%), cheaper than bottle feeding (75.0%), provide closer bonding between the mother and the baby (91.4%), easily digested (86.4%), and more convenient than bottle feeding (67.9%). Only 44.1% of the participants know that exclusive breast feeding is recommended for the first 6 months and 47% indicated that infants breastfed exclusively tend to develop motor skills faster than bottle fed babies (table 2).

Table 2: Frequency Distribution of the Participants Knowledge about Breast Feeding

Item-correct response	Correct N	%
Breast feeding is the best feeding for the baby (True)	302	88.8
breastfeeding protect the baby from diseases such as diarrhea , allergy and ear infection (True)	311	91.4
Breast feeding protect the mother from breast cancer (True)	291	85.5
Exclusive breast feeding is recommended for the first 6 months (True)	150	44.1
Breast feeding is more cheaper than bottle feeding (True)	255	75.0
Breastfed babies are rarely constipated (True).	200	58.8
Infants breastfed exclusively tend to develop motor skills faster (True)	160	47.0
Bottle fed babies are more intelligent than those breastfed (False)	250	73.5
Breastfeeding provides a closer bonding between the mother and her child (True)	311	91.4
Breast feeding may protect your child from obesity (True)	180	52.9
Breast feeding may protect the mother from osteoporosis later in life (True)	160	47.0
Breast feeding helps the uterus contract after birth to control postpartum bleeding (True)	182	53.5
Breastfed babies are healthier than bottle feed babies (True)	254	74.7
Breast milk is more easily digested than bottle feeding (True)	294	86.4
Breastfeeding is more convenient than bottle feeding (True)	231	67.9

Research Question 3: What are the mothers' perceived breast feeding barriers?

The most common perceived barriers cited by the mothers were embarrassment from lactation in public places (83.2%), work, (73.5%) , insufficient milk production (61.4%), pain (58.8%), too busy to breastfeed the babies (57.0%), housekeeper availability (55.2%); poor prenatal and postpartum support (52.9%). Other perceived barriers are shown in table 4.

Table 3: Frequency Distribution of the Participants Perceived Breast Feeding Barriers

Perceived Barriers	Number (%)		
	Agree	Neutral	Disagree
Pain	**2OO (58.8)**	40(11.7)	100(29.4)
Fear of distorted breast shape by breastfeeding	53(15.5)	50(14.7)	237(69.7)
Poor prenatal and postpartum support	**180(52.9)**	60(17.6)	100(29.4)
perception of insufficient milk production	**209 (61.4)**	63(18.5)	74(21.7)
Father not encourage breast feeding	94 (27.6)	96 (28.2)	150(44.1)
Embarrassed from lactation in public places	**283(83.2)**	30(8.8)	27(7.9)
Embarrassed form lactation in front of family member	**167(49.1)**	66(19.4)	107(31.4)
Too busy to breastfeed the baby	**194(57.0)**	80(23.5)	66(19.4)
sick	60(17.6)	100(29.4)	180(52.9)
housekeeper availability encourage me to give bottle feeding	**188(55.2)**	54(15.8)	98(28.8)
Taking contraceptives	**177(52.0)**	80(23.5)	83(24.4)
Work	**250 (73.5)**	44(12.9)	46(13.5)
Tiredness	**198 (58.2)**	50(14.7)	92(27.0)
Disease could transfer to the kids through breast feeding	**153(45)**	100(29.4)	87(25.5)
Bad smell of the nursing mom	75 (22.0)	56(16.4)	209(61.4)
Depressed because my child refused breast feeding	**147(43.2)**	55(16.1)	138(40.5)
I Don't have enough knowledge	108 (31.7)	77(22.6)	155(45.5)

Research Question 4: Do mothers' knowledge, attitudes and perceived barriers differ by their sociodemographic factors?

Correlation analyses were conducted to examine the relationship between the participant's demographic characteristics and their total attitude, knowledge and perceived barriers scores. Maternal age (r = .33), was positively correlated with mothers attitude score, indicating older mothers have more positive attitude toward breast feeding. Maternal age was also negatively correlated with mother's perceived barriers (-.017). This negative correlation indicates that younger mothers perceived more barriers than older ones.Breast feeding duration was found to be positively correlated to the mothers knowledge (r= 0.11) and negatively correlated to their perceived barriers (r= -0.28). This indicates that mothers who breast feed their infant longer have better knowledge and less perceived barriers. Number of pregnancies and previous breast feeding experience were negatively correlated to the mothers perceived barriers (r = -0.12, -0.30); that is, mothers who have no previous breast feeding experience and have less kids perceive more breast feeding barriers than mothers with previous experience and more kids.

Table (4): Correlation between the Total Attitude Scores, total perceived barriers scores, total knowledge scores, and age, breast feeding duration, number of pregnancies and breast feeding experience

Variables	Attitude		knowledge		Perceived Barriers	
	R	P	R	P	R	P
Age	**0.32***	0.000	0.02	0.66	**-0.17***	0.03
Breast feeding duration	**0.33***	0.412	**0.11***	0.03	**-0.28***	0.00
Number of pregnancies	0.08	0.11	0.01	0.7	**-0.12***	0.03
Breast feeding experience	0.07	0.16	0.07	0.16	**-0.30***	0.00

Research Question 5: Is there any correlation between mothers' Knowledge, attitude and perceived barriers?

Mother's knowledge were highly positively correlated with their attitude (r= .71) and negatively correlated with their perceived barriers scores (r =-0.18) indicating that, mothers who have a good knowledge have also more positive attitude toward breast feeding and perceive less barriers.

Table 5: Correlation between mother's knowledge, attitude and perceived barriers

Variables	Attitude score		Knowledge		Perceived Barriers	
	r	P	r	p	r	P
Attitude	1		.714**		-.43*	0.00
knowledge	.71*	0.000	1		-.18*	0.00
Barriers	-.43*		-.181**	.003	1	

Research Question 6: Which factor among the study correlated variables predicted attitude toward breast feeding?

Regression analysis was used to answer this research question. Attitude was entered to the equation as the dependent variable age, breast feeding duration, knowledge and perceived barriers as independent variables. Results showed that all the variables together explained 62% of variance on the mother's attitude toward breast feeding. The model was significant (F = 110.23, p = .000). Knowledge and perceived barriers mostly predicted the attitude respectively (β = .72, .30 p = .000).

Table 4: Regression analysis

Variable	B	Standard error	β	Sig.
Age	.063	.035	.072	.041
breast feeding duration	.381	.156	.098	.015
Knowledge	.960	.052	.724	.000
Barriers	-.17	.023	-.30	.000

Discussion

In this study it was found that the most common perceived barriers cited by the Saudi mothers were embarrassment from lactation in public places (83.2%). Khalil and Mahmoud (2012) reported that the most common barriers of breast feeding was embarrassment from lactating in public places.The finding of the present study showed that occupation of mothers (73.5%) is considered one of the barrier which hindering / initiating breast feeding. These findings were supported by a study done in Riyadh, Kingdom of Saudi Arabia by Cropley and Herwehe (2002) who mentioned that initiation among the sample was 95.6% and lactation duration dropped to 50% at 6 months of age because of the work of the mothers. Attitudes are important determinant of behavior, and favorable attitudes towards breast feeding are necessary to initiate and maintain breast feeding practice. The present study showed that the majority of the participants have a neutral attitude toward breast feeding (89.4%), This result was comparable to results of Al-Madani (2010). The majority of the study participants have a good knowledge regarding breast feeding's health benefits for baby and mother.In table 5 The finding of the present study showed that Maternal age (r = .33), was positively correlated with mothers attitude score, indicating older mothers have more positive attitude toward breast feeding. This result is supported by Laanterä et al (2010) who mentioned that 52% of their sample are under 27 years and they don't initiate breastfeeding because they have seen breastfeeding as a complicated method. Regarding the Breast feeding duration it was found that there is a positive correlation to the mothers knowledge (r= 0.11) and negatively correlated to their perceived barriers (r= -0.28). This indicates that mothers who breast feed their infant longer have better knowledge and less perceived barriers, the previous results goes in line with Uchendu (2009) indicated that there is a fairly good relationship between knowledge related to breastfeeding and actual practice. In relation to Number of pregnancies and previous breast feeding experience were negatively correlated to the mothers perceived barriers (r = -0.12, -0.30); that is, mothers who have no previous breast feeding experience and have less kids perceive more breast feeding barriers than mothers with previous experience and more kids. The previous result have been supported by Cropley and Herwehe (2002), Laanterä et al., (2010).

Conclusion

The current study aimed at examining women's knowledge and attitude of the Saudi mothers toward breastfeeding and barriers of breast feedings. A descriptive correlational cross-sectional design was used to answer the research questions. A convenience samples of 340 mothers who have at least one child aged 19 and above were recruited in this research. The study participants were recruited from shopping malls, women's cafeterias, and restaurant in Riyadh. Mothers were interviewed face-to-face after agreeing to participate in the study. The study participants have a good knowledge regarding breast feeding's health benefits for baby and mother. The aim of this study was two folds; to assess breast feeding attitudes and knowledge among Saudi women residing in Riyadh. And to determine barriers to breast feeding. Although most of the females have a positive attitude and a relatively good knowledge regarding breast feeding, there are several barriers to breast feeding. Health care professionals should actively work with the families to overcome these barriers through conducting an awareness campaign to raise the awareness of Saudi female about the importance of breast feeding and how to overcome the barriers of breast feeding, and also providing health education programs to students and employees in schools and universities.

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