

Attitudes of Saudi Mothers Towards Breastfeeding: A Cross-Sectional Survey in Taif Region, Saudi Arabia

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Abstract: *Background:* Mothers' attitudes are strong predictors of choice of infant feeding method. This study was conducted to measure attitudes towards breastfeeding among Saudi mothers.

Methods: A cross-sectional survey was conducted during April 2013 among Saudi nursing mothers in Taif Region; Kingdom of Saudi Arabia (KSA). Data was collected by trained pharmacy female students through face-to-face interview method using structured questionnaire. Mothers' attitudes towards breastfeeding were assessed by The Iowa Infant Feeding Attitude Scale (IIFAS).

Results: A total of 387 mothers were included of them 204 (52.7%) aged < 32 years and 334 (86.3%) were residents in the town. University or college graduates were 262 (67.7%). Overall 181 (46.8%) of the mothers had positive attitudes towards breastfeeding, while 206 (53.2%) held negative ones. Correlating mothers' total attitudes towards breastfeeding to their demographics showed that; out of the mothers aged < 32 years 118 (57.8%) had significantly more positive attitudes than older ones (aged \geq 32 years) 63 (34.4%), ($P < 0.001$). Cross tabulation of the method of infant feeding and mothers' total attitudes towards breastfeeding showed that mothers used formula feeding or mixed feeding method 120 (49.0%) had significantly positive attitudes towards breastfeeding more than breastfeeding ones 61(43.0%), ($P = 0.025$).

Conclusion: The rate of exclusive breastfeeding was low. Positive attitudes towards breastfeeding was found to be more among mothers used formula or mixed feeding method. Educational interventions are needed to raise awareness and upgrade mothers' knowledge on infant breastfeeding.

Keywords: Mothers, Iowa Infant Feeding Attitudes Scale, Breastfeeding, Knowledge, Saudi.

INTRODUCTION

Breastfeeding is the normal way of providing young infants with the nutrients they need for healthy growth and development [1]. The recommended duration for exclusive breastfeeding is six months of age, after which breastfeeding continue along with appropriate complementary foods for up to two years of age or beyond. There has been significant reliable evidence that breastfeeding has important benefits for both infant and mother [2]. Despite those proven benefits the rate of breastfeeding among mothers was found to be low especially after three month and six months after initiation [3, 4]. Many predictors for early discontinuation of exclusive breastfeeding were identified like late initiation of breastfeeding, breastfeeding difficulties, prenatal intended duration and breast milk expression [5].

Several studies were conducted around the world to assess mothers' knowledge and attitudes towards breastfeeding. Inoue *et al.* [6] found that Japanese mothers strongly relied on infant formula despite the fact that they acknowledged the benefits of

breastfeeding. Among Iraqi mothers and family child-caring women knowledge was lacking about full exclusive breastfeeding until 6 months postpartum and believed that breastmilk was not enough for their infants [7]. Evaluation of Jordanian women's knowledge, attitudes and practices towards breastfeeding showed that they had a positive attitude but work place and short maternity leaves had a negative impact on breastfeeding [8]. Kuzma [9] investigated knowledge, attitude and practice associated with exclusive breastfeeding among women living in rural areas in Papua New Guinea; he reported that they knew that breastfeeding is a better way for feeding babies; however they generally had poor knowledge regarding the reasons for its superiority over infant formula. In a study conducted in Saudi Arabia researchers identified two main reasons for a very low rate of exclusive breastfeeding, namely breast milk insufficiency and adverse work related issues [10]. In a study conducted in USA to assess the frequency of exclusive breastfeeding in the early postpartum period maternal attitudes towards breastfeeding, participants thought that breastfeeding was physically painful and uncomfortable and this was found to be independently associated with not breastfeeding [11]. Investigation of social factors affecting exclusive breastfeeding of infants in Nigeria revealed that the literate nursing mothers were more positively disposed to exclusive

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breastfeeding than the illiterate ones [12]. In addition practice of exclusive breast-feeding was found to be adversely affected by the nursing mothers' nature of work.

The main aim of this study was to measure attitudes towards breastfeeding among Saudi mothers in Taif Region.

METHODS

This was a cross –sectional survey conducted during one month (April 2013) among Saudi nursing mothers in Taif Region, KSA. Mothers were met in public places in the city were invited to participate. Verbal informed consent was obtained and participation was optional. Data was collected by trained pharmacy female students through face-to- face interview method using structured questionnaire. The questionnaire was designed to collect data on mothers' demographic and to assess their attitude towards breastfeeding. Mothers' attitudes towards breastfeeding were assessed by The Iowa Infant Feeding Attitude Scale (IIFAS) with the omission of two questions to suit Saudi mothers. The two questions involve breastfeeding in public places and using alcohol while breastfeeding. The scale demonstrated strong internal consistency, construct and content validity in previous studies. The modified scale consisted of 15 questions and participants were requested to answer the questions using 5 point likert

scale ('Strongly agree', "Agree", "Neutral", "Disagree", and "Strongly disagree"). To measure mothers' total attitudes towards breastfeeding, items that favored breastfeeding in the scale were scored (1, 2, 3, 4, 5), while those favored formula feeding were given reversed scores. Therefore the total score range from 15, reflecting negative attitude towards breastfeeding and 75 indicating positive attitudes. A cut-off point (median score) was determined and accordingly mothers were classified as having positive attitudes towards breastfeeding if scored \geq median score and with negative attitudes if their scores were $<$ the median score. The questionnaire was tested with a group of 20 mothers to ensure applicability and minor modifications were suggested and adopted in the final form.

Descriptive statistics of all studied variables was presented in frequencies and percentages. The chi-squared or Fischer exact tests were used to examine the association between mothers' demographics and method of infant feeding when appropriate. Association between mothers' total attitudes towards breastfeeding and their background characteristics was tested by Mann-Whitney U test and Kruskal-Walis tests when appropriate. The significance level was set at $p < .05$. All analysis was performed using Statistical Package for Social Sciences (SPSS) software for Windows (version 21).

Ethical approval for the conduction of the survey was obtained from Pharmacy Practice Research Unit

Table 1: Mothers' Demographic According to Infant Feeding Method

Background characteristics	Breast feeding	Formula feeding or mixed feeding	All mothers	P value
Age (years)				
<32	78(38.2%)	126 (61.8%)	204	0.228
\geq 32	64 (35.0%)	119 (65.0%)	183	
Residence				
Town	118 35.3(%)	216(64.7%)	334	0.108
Outside the town	24(45.3%)	29(54.7%)	53	
Educational level				
University	92(35.1%)	170(64.9%)	262	0.800
Secondary	36(39.1%)	56(60.9%)	92	
Primary	10(41.7%)	14(58.3%)	24	
Illiterate	4(44.4%)	5(55.6%)	9	
Family monthly income (SR)				
<5000	29(52.7%)	26(47.3%)	55	0.022
5000-10000	59(36.0%)	105(64.0%)	164	
>10000	54(32.1%)	114(67.9%)	168	
Total	142 (36.7%)	245 (63.3%)	387	

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RESULTS

A total of 387 nursing mothers were participated in the survey of them 204 (52.7%) aged < 32 years and 334 (86.3%) were permanent residents in the town. University or college graduates were 262 (67.7%). Mothers' demographic according to infant feeding method are presented in Table 1.

Sources of Information on Infant Feeding Methods

Mothers' sources of information on infant feeding methods were relatives 206 (53.2%), physicians 163 (42.1%), television 109 (28.2%), friends 84 (21.7%), newspapers 41 (10.6%), and 40 (10.3%) received information from other sources.

Mothers' Knowledge and Attitudes Towards Breastfeeding

Mothers' responses to attitudinal items of Iowa Infant Feeding Attitude Scale were presented in Table 2. Out of all mothers 134 (34.6%) believed that the nutritional benefit of breastmilk last only until the baby is weaned. Of all mothers 187 (48.4%) disagreed that formula feeding is more convenient than breastfeeding

compared to 176 (45.4%) agreed with this statement. Nearly thirty percent not sure if breastmilk is lacking in iron or not. Over sixty percent considered that formula feeding is the better choice if mother plans to work outside the home. A considerable number of mothers 363 (93.8%) and 327 (84.5%) agreed with the facts that breastmilk is the ideal food for infants and breast fed babies are healthier than formula fed babies respectively.

Mothers' Total Attitudes Towards Breastfeeding

Table 3 showed mothers' total attitudes towards breastfeeding correlated to their background characteristics. Overall 181 (46.8%) of the mothers had positive attitudes towards breastfeeding, while 206 (53.2%) held negative ones. Correlating mothers' total attitudes towards breastfeeding to their demographics showed that; out of the mothers aged < 32 years 118 (57.8%) had significantly more positive attitudes than older ones (aged \geq 32 years) 63 (34.4%), ($P = < 0.001$). Cross tabulation of the method of infant feeding and mothers' total attitudes towards breastfeeding showed that mothers used formula feeding or mixed feeding method 120 (49.0%) had significantly positive attitudes towards breastfeeding more than breastfeeding ones 61 (43.0%), ($P = 0.025$).

Table 2: Mothers' Response to Iowa Infant Feeding Attitudes Scale (n=387)

Item	Strongly agree/ Agree	Neutral	Strongly disagree/ Disagree
The nutritional benefit of breastmilk last only until the baby is weaned from breastmilk	134 (34.6%)	47(12.1%)	206(53.2%)
Formula feeding is more convenient than breastfeeding	176(45.4%)	24(6.2%)	187(48.4%)
Breastfeeding increases mother-infant bonding	352(90.9%)	18(4.7%)	17(4.4%)
Breastmilk is lacking in iron	52(13.4%)	114(29.5%)	221(57.1%)
Formula-fed babies are more likely to be overfed than breastfed babies	47(12.2%)	45(11.6%)	295(76.2%)
Formula feeding is the better choice if mother plans to work outside the home	239(61.8%)	38(9.8%)	110(28.4%)
Mothers who formula feed miss one of the joys of motherhood	230(60.9%)	53(13.7%)	98(25.3%)
Breast fed babies are healthier than formula fed babies	327(84.5%)	34(8.8%)	26(6.7%)
Breast fed babies are more likely to be overfed than formula fed babies	117(45.7%)	47(12.2%)	163(42.1%)
Father feels left out if mother breast feeds	72(18.6%)	39(10.1%)	276(71.3%)
Breastmilk is the ideal food for infants	363(93.8%)	14(3.6%)	10(2.6%)
Breastmilk is more easily digested than formula	315(81.4%)	58(15.0%)	14(3.6%)
Formula is as healthy for an infant as breastmilk	83(21.5%)	79(20.4%)	225(68.1%)
Breastfeeding is more convenient than formula feeding	258 (66.7%)	35(9.0%)	94(24.3%)
Breastfeeding is less expensive than formula	331(85.5%)	14(3.6%)	42(10.9%)

Table 3: Mothers' Total Attitudes Towards Breastfeeding Correlated to Background Characteristics

Background characteristic	Attitude towards breastfeeding		Total	P value
	Positive	Negative		
Age (year)				
< 32	118 (57.8%)	86(42.2%)	204	< 0.001
≥ 32	63 (34.4%)	120(65.5%)	183	
Residence				
Town	156(46.7%)	178(53.3%)	334	0.428
Outside town	25(47.2%)	28(52.8%)	53	
Educational level				
University	117(44.7%)	145(55.3%)	262	0.733
Secondary	47(51.1%)	45(48.9%)	92	
Primary	12(50.0%)	12(50.0%)	24	
Illiterate	6(55.6%)	4(44.4%)	9	
Family monthly income (SR)				
<5000	31(56.4%)	24(43.6%)	55	0.085
5000-10000	83(50.6%)	81(49.4%)	164	
>10000	67(39.9%)	101(60.1%)	168	
Type of feeding				
Breastfeeding	61(43.0%)	81(57.0 %)	142	0.025
Formula feeding or mixed feeding	120(49.0%)	125(51.0%)	245	
Total	181 (46.8%)	206 (53.2%)	387	

DISCUSSION

The analysis of the demographic data obtained in the current study showed typical features of urbanized community with regard to both educational level and level of monthly income as presented in Table 1. More than two third of the mothers participated in the study had university education. This can be attributed to the facts that > 50% of them their ages were < 32 years and they were permanent residents in the town. Both factors helped those mothers to have good opportunities to attain higher educational level.

Regarding the method of infant feeding 36.7% exclusively use breastfeeding while the rest use either formula or mixed feeding methods. Comparatively in a study conducted in three major hospitals in another region in the country approximately of the women recruited 48.5% preferred mixed feeding and 36.8% exclusive breastfeeding [13].

Correlating infant feeding method with mothers' demographic characteristics showed that there was only significant association between method of feeding and family monthly income. Qiu *et al.* [14] on multivariate logistic regression analysis identified the association of multiple factors with exclusive breastfeeding namely vaginal birth, baby's first feed

being breast milk, mother living in the suburbs or rural areas, younger age of mother, lower maternal education and family level of income.

As shown in Table 2 there were variations in participants' responses to different attitudinal statements designed to assess their attitude towards breastfeeding. Despite the fact that they responded positively to statements related to the ideality of breastmilk as source of nutrients, easiness of digestion, and the fact that breastfed babies are healthier than formula fed ones, the low cost of breastfeeding; they had negatives attitudes on others.

Breastfeeding is associated with a reduced risk of many diseases in infants and mothers [15]. More than one third of the respondents thought that the nutritional benefit of breastfeeding last only until the baby is weaned from breastmilk. Parveen *et al.* [16] assessed women knowledge regarding benefits of breastfeeding and exclusive breastfeeding. They reported that nearly 45% of women had knowledge about the benefits of breastfeeding and 54% were not aware about these benefits.

Nearly 43% of the respondents agreed or didn't know that breastmilk is lacking in iron. One of the most important facts breastfeeding lowers the risk of iron

deficiency anemia [17]. Actually Babies are born with enough iron stores, which comes from their mother's blood while they are in the womb [18]. Although breast milk is low in iron content but 50% of this iron is bioavailable to the infant [19], but it is considered as the major source for iron during the first 6 months of life [18]. During the course of lactation breastmilk is known to show decreasing in iron concentrations [20]. Therefore after six months, the introduction of a diet rich in iron is important to meet infant needs [21]. Understanding these information is important in the provision of educational message for the mothers regarding this issue to avoid misconception.

Breastmilk contains many substances which are not contained in formula milk these substances lower the possibility of breastfed babies to contract certain diseases [22]. Nearly one third of the participated mothers either agreed or don't know that formula milk is as healthy for their infant as breastmilk. This may partly explain the increased percentage of the mothers who use formula or mixed feeding methods documented in the current study.

Overall, positive attitude towards breastfeeding was found to be slightly lower than negatives ones. Unexpectedly negative attitude towards breastfeeding was found to be more prevalent among breastfeeding mothers. In contrary to this finding other researchers found higher Iowa Infant Feeding Attitude Scale scores significantly associated with the likelihood of both breastfeeding initiation and longer breastfeeding duration [23].

As presented in Table 3 the results showed highly significant association between mothers' total attitudes towards breastfeeding and their ages. Despite the fact that a considerable number of the recruited mothers had higher education but no significant difference was observed in their attitude towards breastfeeding. The type of information source has a significant impact on mothers' attitudes on infant feeding method, as documented in the results of this study the mothers obtained information on infant feeding method from relatives. The second source of information was the physicians. The great pressure exerted by the pharmaceutical companies on physicians in promoting different types of formulas definitely influences the attitudes of these mothers. In contrast Zhou *et al.* [24] found that strong association between maternal breastfeeding knowledge and attitudes and breastfeeding practice. In addition they found poor knowledge and less desire to breastfeeding was

prevalent among younger, less well-educated, mothers in a lower social class, and those who had not been breastfed as a baby.

Study Limitation

This survey was conducted in a small geographical area in Saudi Arabia; this limits the generalizability of the obtained results to the entire population in the country. Future researches on the topic must include a sample of mothers from all regions.

CONCLUSIONS

In conclusion the results of the present study showed that nearly 37% of the recruited mothers exclusively breastfed their babies. Surprisingly positive attitudes towards breastfeeding was found to be more among mothers used formula or mixed feeding method. Future researches on the topic are needed to explore other factors that influence mothers' choice of infant feeding method. However, the results obtained can be used as a baseline to educate and raise the awareness of the mothers on the identified misconceptions. Educational interventions for the mothers can be provided through the well-distributed primary healthcare facilities in the country during their prenatal and postnatal visits.

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