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Original article

Assessment of Barriers to Exclusive Breast Feeding Among Working Saudi Mothers

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Abstract

Background: The World Health Organization and the United Nations International Children's Fund recommend mothers to exclusively breastfeed their infants for the first six months of their life that should be initiated within the first hour after birth. ***Methods:*** This cross-sectional study included currently employed Saudi working mothers residing the Western region of Saudi Arabia. A self-administered questionnaire was distributed through email and social media. Each person meeting the inclusion criteria was provided informed consent, explaining the study aim, and ensuring the confidentiality of information. Data were obtained by filling out the designed Questionnaire. ***Result:*** This study included 692 working Saudi mothers. The frequency of exclusive breast feeding was 40.2%, which was continued by 29.8% only after returning to the work. Insufficient breast milk secretion (17.5%) and the lack or minimal support from the workplace for EBF (6.6%) were commonly stated by the mothers. There were great deficiencies in the breastfeeding friendly work policies including the absence of breast feeding or breast milk-pumping place (86.4%), absence of breastfeeding hours during work time (80.9%), and the presence of a strict full-time schedule that did not allow freely use of the nursing break. ***Conclusion:*** The present study shows low prevalence of exclusive breast feeding among working mothers in the Western region of Saudi Arabia. Multiple barriers to continuing breast feeding have been detected. Insufficient breast milk secretion and the lack of breastfeeding friendly work policies were common reasons.

Keywords: ***Exclusive Breast Feeding, Working Mothers, Barriers, Saudi Arabia, Friendly Work Policies.***

Introduction

The World Health Organization (WHO) and the United Nations International Children's Fund recommend mothers to exclusively breastfeed their infants for the first six months of their life that should be initiated within the first hour after birth [1]. The WHO defines exclusive breast feeding (EBF) as the practice of feeding an infant only on mother's milk for the first six months of life without the addition of any other substance [2]. Evidence shows that EBF is beneficial to both the child and the mother, as it improves the cognitive development of the child, strengthens the immune system, and lowers the risks of many acute and chronic conditions, such as infections, obesity, cancers, asthma, allergies, cardiovascular and metabolic diseases, and sudden infant death syndrome [3,4]. Some of the benefits that mothers achieve are minimal postpartum bleeding, decreased menstrual blood loss, faster return to pre-pregnancy weight, and lower incidence of breast and ovarian cancer. Along with these health benefits, the working mother also attains some economic benefits such as higher employee productivity and lower absenteeism, increased employment retention by working mothers who breastfeed, cost savings by avoiding the purchase of infant formula, and decreased health care costs resulting in savings to public and private insurers[5,6].

A study conducted in Australia by Cooklin et al. (2008) reported that working women had difficulty in breastfeeding their infants in the first 6 months of life due to decreased support from the workplace that contributed to premature cessation of breastfeeding [7]. Another study done in the United States by Carlson-Gielen et al. (1991) had found that Mothers were much less likely to terminate breastfeeding at 12 weeks postpartum if they reported (during the 12-week interview) having earned encouragement from their clinician to breastfeed. It also has been reported the women on full-time employment in the first postpartum year has a strong negative effect on breastfeeding duration [8].

The Eastern Mediterranean Regional Office of WHO has reported high rates (>60%) of early breastfeeding initiation but there was a decline in EBF (<40%) for the infant under 6 months in the Middle East and North Africa countries [9]. According to the World Bank data, the current female labor force in the Kingdom of Saudi Arabia in 2020 is 15.9% of the total workforce, and the vision 2030 aims to increase the female participation in the workforce from the current rate to 40% [10]. This means that female workforce in the labor market is increasing in Saudi Arabia and working mothers' need a safe environment to breast feed their infants at the workplace. A Study done in the Tabuk region of Saudi Arabia had reported an EBF rate of 31.4% that identified working Saudi women who practiced this attitude compared to non-working women [11]. Another study done in Primary Health Care women workers in the Al-Ahsa region of Saudi Arabia showed that 43.5% of them exclusively breastfeed their infants beyond six months. There is a lack of data regarding EBF in women working in different sectors in the Kingdom especially in the Western region [12]. Hence, this study aimed to assess the rate of EBF and identify the associated factors that influence this practice among Saudi working mothers in the western region of Saudi Arabia (Jeddah, Makkah, Taif, etc)

The objectives of our study were to (a) estimate the rate of EBF in working Saudi mothers irrespective of the job sector in the Western region of Saudi Arabia (Jeddah, Makkah, Taif, etc.) (b) determine the barriers faced by those mothers regarding EBF in the first six months of the child's life, and (c) assess the relationship of these barriers and factors to the rate of EBF.

Methods

Study design

A cross-sectional study was conducted among employed Saudi females who are married and has an infant(s) at breastfeeding age in the Westren region of Saudi Arabia (Jeddah,Mecca and Taif). A pretested and validated questionnaire was used to collect data on sociodemographic characteristics, work-related characteristics, rate of EBF, and barriers related to EBF. The study obtained approval from the Research and Ethics Committee of College of Medicine, Taif University, Saudi Arabia.

Sampling and sample size calculation

A pilot was done to calculate the minimum sample size for our study by considering the values derived from the pilot study that was conducted among 50 females of the same characteristics. A minimum sample size 613 was calculated at 95% confidence interval and 80% power of study. A mixture of convenience and snowball sampling were used to collect the required samples. The questionnaire was sent to the general population via email, social media (WhatsApp, Facebook, Instagram, etc.). The responses were checked regarding eligibility criteria for further analysis.

Inclusion criteria

Currently employed mothers working in any sector residing in Western region of Saudi Arabia (Jeddah, Makkah, Taif, etc.), age between 18 and 50 years and Saudi nationality.

Exclusion criteria

Mothers who delivered a child before being employed ,mothers below 18 years old, or older than 50,any married female who has not had children,Single females, Non-Saudi workers and those who didn't give consent to participate.

Questionnaire

The items used in our questionnaire were adopted from similar studies done by Al-Katufi et al. (2020) and Alsulaimani (2019). The questionnaire showed an internal consistency, Cronbach's alpha of 0.83. The questionnaire consisted of three parts, A, B, and C. A statement of confidentiality and anonymity was given at the beginning of the questionnaire and informed consent was taken from the participants [12,13].

The part A of the questionnaire recorded sociodemographic details including age, highest educational level, marital status, number of children, and medical history of the mother and the child. Part B included knowledge, fear, and perceptions regarding breastfeeding, details on prenatal and postpartum support from the workplace and family members, illness or fatigue, medication use, and maternal stress. Part C reported the work-related characteristics including employment status, work shift, hours worked per day, breastfeeding support services, availability of breastfeeding or breast pumping being offered to breastfeed or to breast pump during breaks in work hours, the presence of a feeding room, and the presence of a policy supporting employees to breastfeed or express milk in their workplace.

Statistical analysis

The data were represented and analyzed using SPSS Ver 22 (IBM Corp. USA). Categorical data were represented as frequencies and percentages. Apparent associations between categorical variables were analyzed using Pearson's Chi-square and Fisher's Exact tests as appropriate. Continuous data were tested for normality by the Shapiro Wilk test, and normally distributed data were presented as mean ± standard deviation, while non-normally distributed data were presented as median and interquartile rang. A p value < 0.05 was considered statistically significant.

Results

This study included 692 working Saudi mothers residing the Western region of Saudi Arabia including Taif (57.8%), Jeddah (19.7%), and Makkah (16.7%). Their mean age was 36±8.5 years. More than half (53.8%) were teachers, while workers in health care sector (physicians, dentists, pharmacists, nurses, and other jobs) represented 9.2%. Administrative jobs and business work represented 16.2% and 7.9%, respectively. The majority (93.9%) were married, and divorced women constituted 6.1%. Most of them (78.9%) had University education. The majority reported full-time and morning shift working (67.1% and 72.8%, respectively). The median age of their infant was 8 (IQR=4-14) months (Table 1).

The period between the last and the current pregnancy was three years or more in 50% of them. Few participants (9.8%) reported postpartum problems such as back pain, teeth pain, lumber disc, diabetes, and fatigue and 103 (14.9%) reported using drugs such as analgesics, vitamins, oral contraceptive pills besides medications for treatment of diabetes, hypertension, hypothyroidism. (Table 2).

Breast feeding behavior is demonstrated in Table 3. Among the study participants, 557 (80.5%) had previous breastfeeding experience, and about half of them (49.2%) practiced breast feeding for more than 6 months. The frequency of exclusive breast feeding was 40.2%, which was continued by 29.8% after returning to the work.

Table 4 illustrates barriers that prevent mothers from continuing exclusive breast feeding after returning to the work. Insufficient breast milk secretion (17.5%) and the lack or minimal support from the workplace for EBF (6.6%) were commonly stated

by the mothers; however, the majority (61.4%) identified a combination of more than one barrier.

There was a significant association between discontinuation of EBF after returning to the work and being a teacher (57.8% versus 44.2%) or working in administrative jobs (16.3% versus 16%). As well, significantly higher percent of mothers who discontinued EBF were working full-time (p=0.005), in the morning shift (p=0.001), developed postpartum medical conditions (p=0.011) or using drugs for the management of these medical conditions (p=0.047) (Table 5).

Workers in the health care sector who discontinued EBF after returning to their work reported significantly higher percent of insufficient breast milk secretion (19.1% versus 0.0%) and the perception that formula feeding makes a good effect on babies' weight (1.5% versus 0.0%) in comparison to those who continued EBF (Table 6).

Inquiring about breast feeding friendly work policy revealed high prevalence of absent breast feeding or breast milk-pumping place (86.4%), or breastfeeding hours during work time (80.9%). Moreover, 592 (85.5%) women reported that they did not breast feed their infants during the work time, and more than half (53.0%) reported the presence of a strict full-time schedule that did not allow free use of the nursing break as illustrated in (Table 7).

Table 8 shows absent breastfeeding friendly work policies more significantly among women who discontinued EBF after returning to the work compared to their counterparts.

Table 1: Sociodemographic characteristics of the study participants

		N	%
City	Taif	399	57.8%
	Jeddah	136	19.7%
	Makkah	115	16.7%
	others	27	3.9%
	Madinah	13	1.9%
Occupation	Teacher	372	53.8%
	Administrative jobs	112	16.2%
	Others	88	12.7%
	Business	55	7.9%
	Physician/dentist	23	3.3%
	Other job in health care sector	20	2.9%
	Nurse	11	1.6%
	Pharmacist	10	1.4%
	Engineer	1	0.1%
Marital status	Married	649	93.9%
	Divorced	42	6.1%
Highest educational level	University	545	78.9%
	Pre-university	84	12.1%
	Postgraduate	62	9.0%
Employment status	Full-time	464	67.1%
	Part-time	228	32.9%
Work shift	Morning	504	72.8%
	Multishift	123	17.8%
	Evening	58	8.4%
	Night	7	1.0%
Infant gender	Female	339	49.0%
	Male	324	46.8%
	Twins	29	4.2%
How many children do you have?	1	161	23.3%
	2	138	19.9%
	3-4	241	34.8%
	5 or more	152	22.0%

Table 2: Medical and postpartum history of the study participants

		N	%
Parity	1	634	91.6%
	2	37	5.3%
	3 or more	21	3.0%
Period between the last and the current pregnancy	1 year	58	8.4%
	2 years	125	18.1%
	3 years or more	346	50.0%
	No previous pregnancy	163	23.6%
Are you planning for future pregnancy?	No	407	58.8%
	Yes	285	41.2%

Are you suffering from any postpartum problems?	No	624	90.2%
	Yes	68	9.8%
Do you use drugs?	No	587	85.1%
	Yes	103	14.9%

Table 3: Breast feeding behavior

		N	%
Do you have previous breast-feeding experience?	No	135	19.5%
	Yes	557	80.5%
If you have ever breastfed, how long did you exclusively breastfeed?	<2 Months	73	13.2%
	2-4 Months	90	16.3%
	4-6 Months	118	21.3%
	>6 Months	272	49.2%
Do you have exclusive breast feeding?	No	414	59.8%
	Yes	278	40.2%
Have you continued EBF after returning to work	No	486	70.2%
	Yes	206	29.8%

EBF: Exclusive breast feeding

Table 4: Barriers that prevent mothers from continuing exclusive breast feeding after returning to the work

	N	%
Combined causes	316	61.4%
Insufficient breast milk secretion	90	17.5%
No or minimal support from workplace for EBF	34	6.6%
Take medicines that excreted in the breast milk	13	2.5%
Concern if the baby takes enough feeding	13	2.5%
Breastfeeding takes a long time from the working schedule/ mothers schedule	13	2.5%
Became pregnant before completing the breastfeeding duration.	10	1.9%
Breastfeeding stress/ Lack the confidence about the ability to breastfed	9	1.7%
Formula feeding makes a good effect on babies' weight in comparison to breastfeeding	7	1.4%
Presence of infant illness that prevents breastfeeding	3	0.6%
Presence of mother illness that prevents breastfeeding	2	0.4%
Nipples pain or sores	2	0.4%
Minimal Family support/ partner support	2	0.4%
Fear of distortion of breast shape after breastfeeding	1	0.2%

Table 5: Continuation of EBF after returning to work

		Have you continued EBF after returning to work				
		No N=486 (70.2%)		Yes N=206 (29.8%)		
		N	%	N	%	P value
Occupation	Teacher	281	57.8%	91	44.2%	0.004*
	Administrative jobs	79	16.3%	33	16.0%	
	Others	54	11.1%	34	16.5%	
	Business	30	6.2%	25	12.1%	
	physician/dentist	12	2.5%	11	5.3%	
	Other job in health care sector	17	3.5%	3	1.5%	
	Nurse	6	1.2%	5	2.4%	
	Pharmacist	6	1.2%	4	1.9%	
	Engineer	1	0.2%	0	0.0%	
Employment status	Full-time	342	70.4%	122	59.2%	0.005*
	Part-time	144	29.6%	84	40.8%	
Work shift	Morning	375	77.2%	129	62.6%	0.001*
	Multishift	74	15.2%	49	23.8%	
	Evening	34	7.0%	24	11.7%	
	Night	3	0.6%	4	1.9%	
Are you suffering from any postpartum problems	No	429	88.3%	195	94.7%	0.011*
	Yes	57	11.7%	11	5.3%	
Do you use drugs?	No	403	83.3%	184	89.3%	0.047*
	yes	81	16.7%	22	10.7%	

**significant at p<0.05*

Table 6: Relation between the barriers that discontinue exclusive breast feeding after returning to work and working in the health care sector

Barriers	Workers in healthcare sector				P value
	No		Yes		
	N	%	N	%	
Combined causes	285	60.6%	31	68.9%	0.009*
Insufficient breast milk secretion	90	19.1%	0	0.0%	
No or minimal support from workplace for EBF	27	5.7%	7	15.6%	
Take medicines that excreted in the breast milk	12	2.6%	1	2.2%	
Concern if the baby takes enough feeding	11	2.3%	2	4.4%	
Breastfeeding takes a long time from the working schedule/ mothers schedule	10	2.1%	3	6.7%	
Became pregnant before completing the breastfeeding duration	9	1.9%	1	2.2%	
Breastfeeding stress/ Lack the confidence about the ability to breastfed	9	1.9%	0	0.0%	
Formula feeding makes a good effect on babies' weight in comparison to breastfeeding.	7	1.5%	0	0.0%	
Presence of infant illness that prevents breastfeeding	3	0.6%	0	0.0%	
Presence of mother illness that prevents breastfeeding	2	0.4%	0	0.0%	
Nipples pain or sores	2	0.4%	0	0.0%	
Minimal Family support/ partner support	2	0.4%	0	0.0%	
Fear of distortion of breast shape after breastfeeding	1	0.2%	0	0.0%	

**significant at p<0.05*

Table 7: Breast feeding friendly work policy

		N	%
Does your workplace have breast feeding or breast milk-pumping place?	No	598	86.4%
	Yes	94	13.6%
Do you breast feed your infant during the work time?	No	592	85.5%
	Yes	100	14.5%
In your workplace, are there breastfeeding hours during work time?	No	560	80.9%
	Yes	132	19.1%
Do you have a strict full-time schedule that did not make you freely use the nursing break?	No	325	47.0%
	Yes	367	53.0%

Table 8: Relation between discontinuation of exclusive breast feeding after returning to work and Breastfeeding friendly work policies

		Have you continued EBF after returning to work				
		No		Yes		
		N	%	N	%	P value
Does your workplace have breast feeding place	No	446	91.8%	152	73.8%	<0.001*
	Yes	40	8.2%	54	26.2%	
Do you breast feed your infant during the work time	No	450	92.6%	142	68.9%	<0.001*
	Yes	36	7.4%	64	31.1%	
Are there breastfeeding hours in your work	No	418	86.0%	142	68.9%	<0.001*
	Yes	68	14.0%	64	31.1%	
Do you have a strict full-time schedule that did not make you freely use the nursing break?	No	232	47.7%	93	45.1%	0.532
	Yes	254	52.3%	113	54.9%	

**significant at p<0.05*

Discussion

Many factors contribute to the observed low breastfeeding rates. Determination of the country specific barriers is necessary for adequate relevant interventions at legal, social, and employment conditions levels, as well as the health-care services [14]. Therefore, this study aimed to assess the prevalence of EBF among working mothers in the western region of Saudi Arabia and the contributing barriers against the continuation of EBF.

In the present study, the frequency of EBF was 40.2%, which was much lowered to 29.8% after returning to the work. Inconsistent reports regarding the prevalence of EBF in Saudi Arabia ranging from 1.7% to 24.4% have been found [15]. A comparable research work recruited Saudi females residing in Riyadh and Dammam cities. The study reported that only 37% of them continued EBF until 6 months [16]. Another study including mothers of different nationalities residing Tabuk city revealed 31.4% prevalence of EBF [11]. Al-Katufi et al. (2020) [12] identified higher prevalence of EBF (79%) and after returning to the work (59.5%) among primary health care workers in Al-Ahsa region, Saudi Arabia. They attributed these high rates to the high educational level and awareness among their studied sample. Other countries in the middle east showed variable reports about EBF. Rates of 1% (17), 1.9% (18), 9.7% (19), 18.9% (20), 54% (21), 66.4% (22) have been reported in Jordan, United Arab Emirates, Egypt, Qatar, Turkey, and Iran, respectively.

Moreover, a recent study that investigated breast feeding practices in rural areas of Southern Nepal detected 53% prevalence of EBF [23]. As well, a recent study of Hauck et al. (2020) [24] stated

variable rates in the united states (25%), in Canada (26%), and in Brazil (41%).

Several factors influence EBF including the level of urbanization of the residence place, the specific local culture and feeding traditions, and the parents' socioeconomic status, level of education, and employment conditions [25].

The current survey revealed many barriers to EBF. Among them, insufficient breast milk secretion and the lack or minimal support from the workplace for EBF were commonly stated by the mothers. Comparable barriers were identified by Al-Katufi et al. (2020) in Al-Ahsa region. However, they reported early returning to the work within 6 months of giving birth as the most common barrier. Our findings are supported by Mills (2009) [26] who recommended supplying workplaces with the necessary support systems to encourage EBF and increase its rates. Furthermore, the insufficient breast milk secretion might be attributed to the low percentage of latching-on (breast suckling by infants) practice by Saudi mothers [27]. Another study that included 517 Saudi mothers reported insufficient breast milk (25.9%), getting pregnant while breastfeeding (19.7%), and being a working mother (15.9%) as the most common reasons for stopping breastfeeding [28]. Further study among school teachers in Abha Female Educational District identified insufficient breast milk and work-related problems as the main reasons for stopping breastfeeding before two years [29].

The discontinuation of EBF after returning to the work was significantly higher among teachers, followed by workers in the administrative jobs, which agrees with an earlier survey among 384 female teachers in Abha region, Saudi Arabia [29]. Women who are working full-time or in the morning shift failed to continue exclusive breast feeding. This is in line with Sulaiman et al. (2016) [30] who studied the impact of working status on breastfeeding practices in urban Malaysia [30]. They reported that the working status is considered a partial barrier to maintain breastfeeding after the women return to the work if there is availability of workplace support and facilities. Earlier study provided evidence that mothers make decisions related to breastfeeding based on their workplace situation, such as working hours [31]. Furthermore, part-time work has been reported to increase the initiation and duration of breast feeding [32].

Insufficient breast milk secretion and the perception that formula feeding makes a good effect on babies' weight were the most common barriers reported by the workers in the health care sector. In contrast, a previous study reported work-related problems as the most common cause for stopping breast feeding among the health care workers [33]. Actually, about 5% of women had physiologic insufficient milk supply, however much higher percentages have false perceptions of insufficient milk for their baby. These false beliefs are the reasons of the increased use of formula feeding [34].

The present study showed great deficiencies in the breastfeeding friendly work policies including the absence of breast feeding or breast milk-pumping place (86.4%), breastfeeding hours during work time (80.9%), besides the presence of a strict full-time schedule that did not allow free use of the nursing break. Moreover, there was a significant association between these deficient policies and the discontinuation of the EBF after returning to the work. It is evident that work places without facilities for breastfeeding can undermine EBF. Accordingly, Cohen and Mrtek (1994) showed that women employed by "breastfeeding friendly" business establishments were able to maintain a breastfeeding regimen for at least six months at rates comparable to non-working women [35].

In fact, supporting breastfeeding mothers at the workplace through providing facilities for expressing and storing breast milk in the workplace is very helpful for the mothers. This approach resolves the financial and family responsibilities, ensure both the economic and health benefits of breastfeeding and employment while employers benefit from retaining women at the work. The application of this legislation showed a significant impact (2.3 percentage points higher) upon breastfeeding rates in the United States [24].

Conclusion

The present study shows low prevalence of exclusive breast feeding among working mothers in the Western region of Saudi Arabia. The discontinuation of EBF after returning to the work was significantly higher among teachers, followed by workers in the administrative jobs. Multiple barriers to continuing breast feeding have been detected; however, insufficient breast milk secretion and the lack of breastfeeding friendly work policies were common reasons.

Limitation and Recommendation

The present study is limited by being a cross-sectional survey that shows the barriers that are significantly associated with termination of breastfeeding, but a definite causal relationship cannot be established. The collected information evaluated the situation only during the time the study was conducted, and it was difficult to analyze trends of the problem over time. Further, the study reflected the condition only in the Western region of Saudi Arabia. So, a comprehensive study that covers multiple regions is recommended. In the light of the findings of this study, it is important to apply breastfeeding-friendly work policies all over Saudi Arabia.

Declarations

Ethics approval and consent to participate

The study was approved by the research ethics committee of Taif University.

Availability of data and materials: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

No competing interests.

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