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. 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. 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.

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. 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.
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 breastfeed 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 Western 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

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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

| Characteristics              | 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

| Characteristics                      | 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

| Do you have previous breast-feeding experience? | N | %  |
|-----------------------------------------------|---|----|
| No                                            | 135 | 19.5% |
| Yes                                           | 557 | 80.5% |

| If you have ever breastfed, how long did you exclusively breastfeed? | N | %  |
|---------------------------------------------------------------------|---|----|
| <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? | N | %  |
|-------------------------------------|---|----|
| No                                  | 414 | 59.8% |
| Yes                                 | 278 | 40.2% |

| Have you continued EBF after returning to work | N | %  |
|------------------------------------------------|---|----|
| 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

| Occupation                        | Have you continued EBF after returning to work |
|-----------------------------------|-----------------------------------------------|
|                                  | No N=486 (70.2%) | Yes N=206 (29.8%) | P value |
|                                  | N  | %   | N   | %   |     |
| 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 N | % | Yes 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 breastfeed | 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

|                                | No N | % | Yes N | % | P value |
|--------------------------------|------|---|-------|---|---------|
| Does your workplace have breast feeding place                     | 446   | 91.8% | 152 | 73.8% | <0.001* |
| 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. 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) 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 sucking by infants) practice by Saudi mothers. 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. 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.

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. 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) who studied the impact of working status on breastfeeding practices in urban Malaysia. 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. Furthermore, part-time work has been reported to increase the initiation and duration of breast feeding. 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. 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.

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.

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, ensures 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.

**Conclusion**

The present study shows low prevalence of exclusive breastfeeding 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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