Maternal Factors Influencing Exclusive Breastfeeding Practices in the First Six Months of Infant Life in the Sudair and Al Zulči Areas of Saudi Arabia

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ABSTRACT

This study aims to determine the prevalence of and maternal factors that are associated with exclusive breastfeeding (EBF) in Sudair and Al Zulči, Riyadh, Saudi Arabia. A cross-sectional study was undertaken by means of recruiting 522, mother-infant pairs with infants aged six months. These participants were attending the Well-Baby Clinics in Sudair and Al Zulči from January 1st to April 30th, 2016, using a pilot-tested Arabic questionnaire. The EBF prevalence was determined via the "recall since birth" technique and regression analysis. EBF prevalence among mothers of infants (6 months) was 17.1%. Mothers' insights of insufficient milk were the most recurrently reported reason (42.5%) for not practising exclusive breastfeeding. Saudi mothers (adjusted odds ratio: 10.06; 95% confidence interval: 8.46, 12.53), mothers aged 28–38 years (36.03; 1.96, 62.21), mothers who attended breastfeeding health education (90.52; 5.49, 134.8), multiparous mothers (67.25; 5.83, 122.8), and mothers with housekeeping availability (19.59; 1.36, 281.47) were more likely to practice exclusive breastfeeding in comparison to their counterparts. EBF rates in both areas are far below the WHO recommended level. The mother’s nationality, age, parity, breastfeeding health education, and housekeeping availability were essential determinants to the practice EBF. Thus, aggressive multisectoral governmental interventions should be made to promote as well as support breastfeeding.

INTRODUCTION

Human milk is considered to be the healthiest nutrition for infants during their initial six months of life. Breastfeeding is demonstrated to have benefits as it reduces the risk of many chronic diseases or illnesses (WHO, 2008). In addition to the seamless blend of fats, proteins, fluids, and carbohydrates, human milk comprises of antibodies that support the infant against many childhood diseases such as “otitis media, respiratory tract infections, atopic dermatitis, asthma, diabetes mellitus (DM), and leukaemia” (UNCF, 2009). Infants and mothers may lose the psychological, immunological and physiological benefits if they fail to breastfeed. This may confer to an increase in the risk for much different chronic and acute diseases (Tewabe et al., 2016). If a mother does not breastfeed, they may experience an increased risk of ovarian or breast cancer, postpartum bleeding, and increased risk for rheumatoid arthritis, Diabetes mellitus and osteoporosis. It may further take a long time to return to the pre-pregnancy weight compared to mothers who breastfeed and a short interval between births (Tewabe et al., 2016; Al-Hreashy et al., 2008). Moreover, it reduces both infant morbidities and
mortalities (UNCF, 2009).

Hence, WHO and UNICEF recommend initiating breastfeeding in the first hour of an infant’s life and exclusive breastfeeding (EBF) for six months, with the introduction of complementary foods, and continued breastfeeding after that (WHO, 2008; UNCF, 2009). Despite its demonstrated advantage, the EBF practice is suboptimal in many developing states such as Saudi Arabia. In 2017, a recent Saudi study conducted in Riyadh found that only 13.7% of all infants were breastfed exclusively at six months of age (Alyousefi et al., 2017). Additionally, low rates were observed in the United Arab Emirates (25%) (Radwan, 2013). The low prevalence of EBF is a global issue; a prevalence of 43.1% has been reported in Malaysia (Tan, 2011) and 7.9% in the United States of America (USA) (Li et al., 2003).

Several reports have found that there are multiple factors associated with breastfeeding practices and EBF. These factors include mother’s age, income, education level, parity, marital status, and delivery mode as well as breastfeeding counselling and psychosocial support received by the mother (Mekonen et al., 2013). Moreover, the effects of social modernization, as well as persuasive advertisements for infant formula and other infant foods, have influenced breastfeeding traditions. Thus, the practice of EBF is relatively low and represents a challenging issue among mothers worldwide. However, there are no data about breastfeeding practices in our study area. This study aimed to evaluate the prevalence of EBF, and the influencing factors associated with breastfeeding practices during the first six months of an infant’s life in the Sudair and Al Zulfi areas in Riyadh, Saudi Arabia.

MATERIALS AND METHODS

Design

We conducted a cross-sectional which is based on a pilot-tested Arabic questionnaire. The respondents from Sudair and Al Zulfi Areas of Riyadh, Saudi Arabia agreed to take part in the study. All infants who were six months and brought by their mothers to the Well-Baby Clinics were included in the survey. The study was conducted at the Well-Baby Clinics at primary healthcare (PHC) centres within the Sudair and Al Zulfi areas between January 1st and April 30th, 2016.

Sample/Participants

Inclusion criteria included all infants who were six months and brought by their mothers to the Well-Baby Clinics at PHCs during the study period were considered. Mothers of all eligible infants agreed to participate. Exclusion criteria included infants older than six months, infants with congenital anomalies that interfere with feeding, and mothers who could not speak Arabic. The five PHCs from each area (Sudair and Al Zulfi) were selected randomly using an updated PHC list. Data were collected through a complete enumeration sampling method. The study included all eligible “mother-infant pairs attending the clinics” during the conduction of this study.

Data collection

After acquiring verbal informed consent from the eligible mothers, data were gathered through a face-to-face interview utilizing a pilot-tested Arabic questionnaire previously utilized in a similarly designed study (Al-Hreashy et al., 2008). The interviews were conducted by trained female Arabic-speaking nurses recruited at each PHC. The principal investigator visited the PHCs on fixed days to supervise data collection. The questionnaire was utilized to obtain sociodemographic characteristics such as mother’s area, age, educational level, marital status, employment, parity, and delivery mode and information related to the infant’s gestational age as well as gender. The survey also collected information concerning the diverse feeding practices, for example, EBF, mixed and exclusive bottle feeding as well as the nature and timing of introducing complementary solids and non-milk liquids to infants. Additionally, mothers were inquired for how long they breastfed their infants and what were the causes of discontinuation.

Definitions

In this study, the definition by Clark et al. and WHO were used for the following infant feeding patterns (Clark et al., 2017; WHO, 2008).

EBF: an infant who received only human milk; no other solids or liquids are given, except for vitamins or oral medicines” (Clark et al., 2017).

Mixed feeding: An infant who was fed with both human milk and infant formula.

Exclusive bottle feeding: An infant who was fed with formula milk since birth and not human milk.

Complementary feeding: An infant who was chiefly breastfed, however, infant formula and some other liquid, solid, or semi-solid foods were contained within their diet.” (WHO, 2008)

Ethical consideration

Ethical approval was attained from the Deanship of Scientific Research at Majmaah University. Participant’s consent was obtained before administering the questionnaire.
Table 1: Basic Sociodemographic Characteristics of Mothers and Infants Studied for the ir Breastfeeding Practices in the First six months of Life at Sudair and Al Zuliferay Areas of Riyadh, Saudi Arabia (N=522)

| Characteristics        | n   | %    |
|------------------------|-----|------|
| **Area**               |     |      |
| Majmaah                | 174 | 33.3 |
| Zulṝi                  | 222 | 42.5 |
| Hotat Sudair           | 126 | 24.1 |
| **Mother’s age**       |     |      |
| 16–27 years            | 144 | 27.6 |
| 28–38 years            | 330 | 63.2 |
| 39–49 years            | 48  | 9.2  |
| **Nationality**        |     |      |
| Saudi                  | 456 | 87.4 |
| Non-Saudi              | 66  | 12.6 |
| **Marital Status**     |     |      |
| Married                | 498 | 95.4 |
| Divorced               | 24  | 4.6  |
| **Mother’s educational level** | | |
| Illiterate             | 30  | 5.7  |
| Primary                | 30  | 5.7  |
| Intermediate           | 42  | 8.0  |
| High school            | 120 | 23.0 |
| University and above   | 300 | 57.5 |
| **Employment**         |     |      |
| Yes                    | 270 | 51.7 |
| No                     | 252 | 48.3 |
| **Average monthly household income (SAR)** | | |
| <5000                  | 234 | 44.8 |
| 5,000–10,000           | 192 | 36.8 |
| >10,000                | 96  | 18.4 |
| **Mode of delivery**   |     |      |
| Normal                 | 336 | 64.4 |
| Cesarean section       | 186 | 35.6 |
| **Number of children in the family** | | |
| One                    | 174 | 33.3 |

*Continued on next page*
| Characteristics                                      | n   | %  |
|-----------------------------------------------------|-----|----|
| Two                                                 | 180 | 34.5|
| More than two                                       | 168 | 32.2|
| Parity                                              |     |    |
| Primiparous                                         | 162 | 31.0|
| Multiparous                                         | 360 | 69.0|
| Attended breastfeeding health education              |     |    |
| Yes                                                 | 150 | 28.7|
| No                                                  | 372 | 71.3|
| Housekeeping availability                            |     |    |
| Yes                                                 | 144 | 27.6|
| No                                                  | 378 | 72.4|
| Use of contraception                                |     |    |
| None                                                | 210 | 40.2|
| Progesterone only pill                               | 72  | 13.8|
| Combined hormonal pills                              | 144 | 27.6|
| Others                                              | 96  | 18.4|
| Follow-up during pregnancy                           |     |    |
| Regular                                             | 450 | 86.2|
| Not Regular                                         | 72  | 13.8|
| Infants' gender                                      |     |    |
| Male                                                | 234 | 44.8|
| Female                                              | 288 | 55.2|
| Infants' gestational age                             |     |    |
| ≥37 weeks                                           | 504 | 96.6|
| <37 weeks                                           | 18  | 3.40|
| Infants ever breastfed                               |     |    |
| Yes                                                 | 498 | 95.4|
| No                                                  | 24  | 4.60|

*SAR: Saudi riyal
The infants’ mothers were reassured that information given will be kept confidential and only utilized for research.

Data analysis

IBM SPSS software (IBM Corp., version 25; Armonk, NY, USA) was utilized to evaluate the data. Descriptive statistics were computed to determine the prevalence of EBF. To identify factors that might have effects on EBF, binary logistic regression analysis was performed. All analyses were conducted at an alpha level of 0.05.

RESULTS

In this study, 522 infants, 55.2% female and 44.8% male, were enlisted. A majority were infants born at term (96.6%) by normal vaginal delivery (64.4%). Approximately 63% of participating mothers were in age groups (26–30 years). Most mothers were Saudi (87%), with 42.2% coming from the Al Zulfi area. More than half of them (57.5%) graduated from university, and 51.7% were employed. Although most of them had regular follow-up during pregnancy (86.2%), only 28% attended breastfeeding health education. More than two-thirds were multiparous (69%), and 40% did not use contraception (Table 1).

Table 2 shows the patterns of complementary feeding of human milk or formula; liquids supplemented almost one-fourth of the infants (25.8%) within the first six months of life. Water, infant tea, herbs (cumin, mint), and sugar in water were the most used liquids. A small minority of them (5.5%) had been started on solid/semi-solid food such as dates, cereals, cooked vegetables, mashed fruits, and yoghurt. Table 3 presents the maternal reasons for not practising EBF; mothers’ perception of insufficient milk was the most frequently reported reason (42.5%). Additionally, maternal work (32.2%), taking contraception (27.6%), and breast pain (25.3%) were typical constraints to EBF.

To identify factors that might have effects on EBF, binary logistic regression analysis was performed. Women who gave birth by cesarean section, women using contraception, divorced mothers, and women with university/higher educational levels were less likely to breastfeed (all p ≤ 0.05) exclusively. No significant association was found between monthly income and EBF. On the other hand, Saudi mothers were ten times more likely to exclusively breastfeed than non-Saudis (adjusted odds ratio [AOR] = 10.065; 95% confidence interval [CI] 8.466, 12.53). Mothers in the 28–38 age group were 36 times more likely to breastfeed exclusively than those in other age groups (AOR = 36.032; 95% CI 1.96, 62.21). Multiparous women and those who attended health education on breastfeeding were more likely to exclusively breastfed than their counterparts (AOR = 67.253; 95% CI 5.833, 122.8 vs AOR = 90.522; 95% CI 5.496, 134.8). For mothers who had housekeeping services, the likelihood of them exclusively breastfeeding their infants was about 19 times higher than that of those who did not have such services (AOR = 19.594; 95% CI 1.364, 281.478) (Table 4).

DISCUSSION

Although considering the evidence-based advantages of EBF for infants, mothers, or society, the EBF practice rate is not satisfactory worldwide (WHO, 2017). In our study, the overall prevalence of EBF practice was 17.1%. Perception of mothers’ regarding the insufficient milk was the most frequently informed reason for not practising EBF. In binary logistic regression investigation, the mother’s nationality, age, health education on breastfeeding, delivery mode, housekeeping availability, parity, marital status, and contraception use were significant factors associated with EBP. Our results show 17.1% prevalence of EBF in the initial six months of an infant’s life that was found to be higher than that reported recently by Alyousefi et al. (13.7%) (Alyousefi et al., 2017). However, other local report found a higher EBF practice rate in Taif (19%) and Jazan (26.9%) (Dorgham et al., 2014). Moreover, this local prevalence was far lower than those in several recent international studies in Sri Lanka (71.3%), and Malaysia (49.5%), (Perera et al., 2012; Hamid et al., 2017). The health risks for child associated with not receiving the human milk or not breastfeeding include but is not limited to increase in morbidity from respiratory, gastrointestinal, allergic disease, atopic illness and increased childhood obesity risk together with type 2 and type 1 diabetes (Tewabe et al., 2016). The frequency of ever having breastfed was high (95.4%), which indicates high rates of breastfeeding initiation. This finding agrees with those in multiple local and international studies (Alyousefi et al., 2017; Hamid et al., 2017). Regarding breastfeeding patterns, more than half of the infants had received mixed breastfeeding since birth, i.e., human milk and formula, with a rate of 54%. This parallels the finding by Al-Hreashy et al., who found that mixed breastfeeding was the most frequent practice (78.8%) (Al-Hreashy et al., 2008).

However, this feeding pattern is less common in Sri Lanka (32.9%) and Malaysia (46.3%) (Perera et al.,
Table 2: Pattern of Complementary Feeding to Human Milk or Formula in the 1st six Months of Infant Life in the Sudair and Al Zulfi Areas of Riyadh, Saudi Arabia (N = 522)

|                  | n  | %   |
|------------------|----|-----|
| **Other food in the 1st six months Liquid** |    |     |
| Yes              | 135| 25.8|
| No               | 387| 74.2|
| **Solid/Semi-solid** |  |     |
| Yes              | 24 | 5.50|
| No               | 498| 95.5|

*Water, infant tea, herbs (cumin, mint) and sugar in water
†Dates, cereals, cooked vegetables, mashed fruits and yoghurt

2012; Hamid et al., 2017).

Unfortunately, in this analysis, 28.9% of infants were deprived of the well-confirmed protective effects of maternalcolostrumand mature human milk as they had received exclusive formula feeding (Debes et al., 2013). This percentage is higher than those reported by Alyousefi et al. (18.3%) and Malaysian (9%) studies (Alyousefi et al., 2017; Hamid et al., 2017). Moreover, almost one-quarter of the infants studied (25.8%) were supplemented by non-milk liquids within the first six months of life. For example, water was provided for the first few weeks of age to prevent dehydration. Moreover, as a traditional practice, mothers used to give chamomile tea and herbs like cumin drink to relieve infantile colic. Similarly, the Emirati study showed that 30% of the infants were given traditional drinks while breastfeeding such as gripe water, anise seed drink, and tea before three months of age (Radwan, 2013).

The mothers’ perception of insufficient milk was the most frequently reported reason (42.5%) for not practising EBF in this study. This reason was also recorded in a study of Pakistan (Yaqub and Gul, 2013). In contrast to this widespread perception, most mothers produce enough milk to meet the needs of their infant’s growth. Therefore, practising EBF on demand is critical for optimal human milk production (Hoi and McKerracher, 2015). Other mothers, in the current study, stopped EBF because of their work (32.2%). Maternal work is a well-known barrier to breastfeeding. A study from Ghana investigated the effect of maternal work on EBF and found that a majority of mothers working in the formal sector (84%) were unable to exclusively breastfeed after their maternity leave (Nkrumah, 2016). This is possibly due to a lack of facilities at workplaces to support breastfeeding. Another reported obstacle to EBF, in this study, was using contraception. However, a 2010 systematic review found limited evidence on the effect of combined oral contraception on breastfeeding success as well as duration (Kapp and Curtis, 2010).

This study identified several factors that interplay with EBF practice. Saudi females were more likely to exclusively breastfeed compared to non-Saudi mothers who were mostly working mothers and had less opportunity to stay at home to practice EBF. Additionally, mothers who had a cesarean delivery or were divorced were unable to breastfeed exclusively. These factors were identified as constraints to breastfeeding in the previous report (Smart, 2013). This could be attributed to the pain after cesarean section and psychological distress associated with separation or divorce.

Moreover, mothers with higher education levels were less likely to breastfeed than those with lower educational levels. This might be explained by the fact that mothers with higher educational levels tended to have better opportunities for employment and were less likely to stay at home, compromising EBF. However, in a study conducted in Malaysia, a higher educational level is associated with a longer breastfeeding duration (Hamid et al., 2017). The present study showed that maternal age might influence EBF practice, and mothers aged 28–38 years were more likely to intend to breastfeed exclusively. This is supported by the study by Hamid et al., where Malaysian women aged less than 30 were most likely to practice EBF compared to
Table 3: Maternal Reasons for not Practicing Exclusive Breastfeeding in the First six months of Infant Life in the Sudair and Al Zulstå Areas of Riyadh, Saudi Arabia (*N* = 522)

| Variables                                                                 | n   | %   |
|---------------------------------------------------------------------------|-----|-----|
| **Perception of insufficient milk production**                           |     |     |
| No                                                                        | 300 | 57.5|
| Yes                                                                       | 222 | 42.5|
| **Work**                                                                 |     |     |
| No                                                                        | 354 | 67.8|
| Yes                                                                       | 168 | 32.2|
| **Taking contraceptives**                                                 |     |     |
| No                                                                        | 378 | 72.4|
| Yes                                                                       | 144 | 27.6|
| **Breast pain**                                                           |     |     |
| No                                                                        | 390 | 74.7|
| Yes                                                                       | 132 | 25.3|
| **Embarrassed of lactating in front of a family member or public places**|     |     |
| No                                                                        | 426 | 81.6|
| Yes                                                                       | 96  | 18.4|
| **Depressed because my child refused to breastfeed**                     |     |     |
| No                                                                        | 432 | 82.8|
| Yes                                                                       | 90  | 17.2|
| **Too busy to breastfeed the infant**                                    |     |     |
| No                                                                        | 450 | 86.2|
| Yes                                                                       | 72  | 13.8|
| **Fear of distorted breast shape by breastfeeding**                      |     |     |
| No                                                                        | 456 | 87.4|
| Yes                                                                       | 66  | 12.6|
| **Poor prenatal and postpartum support**                                 |     |     |
| No                                                                        | 462 | 88.5|
| Yes                                                                       | 60  | 11.5|
| **I don't have enough knowledge**                                        |     |     |
| No                                                                        | 462 | 88.5|
| Yes                                                                       | 60  | 11.5|
| **Sick**                                                                 |     |     |
| No                                                                        | 486 | 93.1|
| Yes                                                                       | 36  | 6.90|
| **Father not encouraging breastfeeding**                                  |     |     |
| No                                                                        | 492 | 94.3|
| Yes                                                                       | 30  | 5.70|
Table 4: Binary Logistic Regression Analysis using Backward Conditional Approach for Maternal Factors Associated with EBF in the First 6 Months of Infant Life.

| Variables                          | Adjusted odds ratio | p-value | 95% CI Lower | 95% CI Upper |
|------------------------------------|---------------------|---------|--------------|--------------|
| Mode of delivery                   | 0.023               | 0.042   | 0.001        | 0.872        |
| Nationality                        | 10.065              | 0.005   | 8.466        | 12.53        |
| Mother’s age                       | 36.032              | 0.016   | 1.960        | 62.21        |
| Marital status                     | 0.113               | 0.047   | 0.013        | 0.971        |
| Monthly income                     | 0.231               | 0.080   | 0.045        | 1.194        |
| Attended breastfeeding health education | 90.522              | 0.002   | 5.496        | 134.8        |
| Educational level                  | 0.224               | 0.001   | 0.091        | 0.554        |
| Parity                             | 67.253              | 0.009   | 5.833        | 122.8        |
| Housekeeper availability           | 19.594              | 0.029   | 1.364        | 281.478      |
| Use of contraception               | 0.092               | 0.003   | 0.019        | 0.435        |

95% CI, 95% confidence interval

older women. This might be due to increased awareness about breastfeeding benefits through social media and public health campaigns. Moreover, this study found that attending breastfeeding health education during pregnancy facilitated EBF practice. This suggests that all maternity healthcare clinics should provide breastfeeding counselling because of its usefulness in refining maternal knowledge and enhancing the EBF rate (Haroon et al., 2013).

Our study had several limitations. This cross-sectional design conveys associations between determinant factors and EBF, rather than inferences; a prospective cohort design might be more suitable. Besides, a possibility of recall bias cannot be precluded as we sought evidence of breastfeeding from the mothers since their infants’ birth. Moreover, the enrolled participants were from PHC centres only. Those who received analogous care at different health facilities may have different socioeconomic status (SES), that may infer different determinants or breastfeeding patterns.

Recommendations

Although in May 2016, the Saudi Council of Ministers called the establishment of a national association to promote breastfeeding, the practice of EBF is still suboptimal among Saudi mothers. Thus, according to the findings of this study, there are several recommendations for better infant feeding practices.

1. Provide counselling and training sessions for every pregnant mother in antenatal and postnatal visits, as this would help increase the initiation rates and support the maintenance of breastfeeding.
2. Apply the ten steps of the Baby-Friendly Hospital Initiative created by the UNICEF and WHO for successful breastfeeding practices for mother-infant initiatives at all maternity hospitals.
3. Restrict the use of infant formula within maternity hospitals unless medically indicated.
4. Encourage every new mother to initiate breastfeeding after delivery as soon as possible.
5. Engage multiple governmental sectors including educational, medical, media, and religious to promote, protect, and support optimal practices for breastfeeding nationally.
6. Provide more paid days off for maternity leave.
7. Establish proper breastfeeding places at work as well as public places.

CONCLUSIONS

The study results emphasize the consistent low prevalence of EBF among Saudi women. Mother’s age, nationality, delivery mode, contraception use, marital status, maternal education, parity, breastfeeding health education during antenatal care, and housekeeper availability were important determinants to EBF practice in the study area. Aggressive governmental actions should be taken to protect as well as promote breastfeeding in the Saudi community.

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Conflict of interest
The authors have no competing interests to declare.

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REFERENCES

Al-Hreashy, F. A., Tamim, H. M., Al-Baz, N., Al-Kharji, N. H., Al-Amer, A., Al-Ajmi, H., Eldemerdash, A. A. 2008. Patterns of breastfeeding practice during the first six months of life in Saudi Arabia. Saudi Medical Journal, 29(3):427–431.

Alyousefi, N. A., Alharbi, A. A., Almugheerah, B. A., Alajmi, N. A., Alayashi, S. M., Alharbi, S. S., Alnoumasi, Z. K. 2017. Factors influencing Saudi mothers’ success in exclusive breastfeeding for the first six months of infant life: A cross-sectional observational study. International Journal of Medical Research & Health Sciences, 6(2):68–78.

Clark, K. M., Li, M., Zhu, B., Liang, F., Shao, J., Zhang, Y., Ji, C., Zhao, Z., Kaciroti, N., Lozoff, B. 2017. Breast-feeding, Mixed, or Formula Feeding at 9 Months of Age and the Prevalence of Iron Deficiency and Iron Deficiency Anemia in Two Cohorts of Infants in China. The Journal of Pediatrics, 181:56–61.

Debes, A. K., Kohli, A., Walker, N., Edmond, K., Mullany, L. C. 2013. Time to initiation of breastfeeding and neonatal mortality and morbidity: a systematic review. BMC Public Health, 13(Suppl 3):S19–S19.

Dorgham, L. S., Hafez, S. K., Kamhawy, H., Hassan, W. 2014. Assessment of initiation of breastfeeding, the prevalence of exclusive breastfeeding and their predictors in Taif, KSA. Life Sci J, 11(1):1–9.

Hamid, S. B. A., HC, J., CW, B. 2017. Predictors of Breastfeeding Intention in Malaysia. Environment-Behaviour Proceedings Journal, 2(5):161–161.

Haroon, S., Das, J. K., Salam, R. A., Imdad, A., Bhutta, Z. A. 2013. Breastfeeding promotion interventions and breastfeeding practices: a systematic review. BMC Public Health, 13(Suppl 3):S20–S20.

Hoi, A. G., McKerracher, L. 2015. Breastfeeding and infant growth. Evolution, Medicine, and Public Health, 2015(1):150–151.

Kapp, N., Curtis, K. M. 2010. Combined oral contraceptive use among breastfeeding women: a systematic review. Contraception, 82(1):10–16.

Li, R., Zhao, Z., Mokdad, A., Barker, L., Grummer-Strawn, L. 2003. Prevalence of breastfeeding in the United States: The 2001 national immunization survey. Paediatrics, (111):1198–1201.

Mekonen, L., Seifu, W., Shiferaw, Z. 2013. Timely initiation of breastfeeding and associated factors among mothers of infants under 12 months in South Gondar zone, Amhara regional state, Ethiopia. International Breastfeeding Journal, 13(1).

Nkrumah, J. 2016. Maternal work and exclusive breastfeeding practice: a community based cross-sectional study in Efutu Municipal, Ghana. International Breastfeeding Journal, 12(1):10–10.

Perera, P. J., Ranathunga, N., Fernando, M. P., Sampath, W., Samaranayake, G. B. 2012. Actual exclusive breastfeeding rates and determinants among a cohort of children living in Gampaha district Sri Lanka: A prospective observational study. International Breastfeeding Journal, 7(1).

Radwan, H. 2013. Patterns and determinants of breastfeeding and complementary feeding practices of Emirati Mothers in the United Arab Emirates. BMC Public Health, 13(1):171–171.

Smart, C. 2013. Deconstructing motherhood. In Silva, E., editor, Good Enough, Mothering? Feminist Perspectives on Lone Motherhood, pages 45–65.

Tan, K. L. 2011. Factors associated with exclusive breastfeeding among infants under six months of age in peninsular Malaysia. International Breastfeeding Journal, 6(1).

Tewabe, T., Mandesh, A., Gualu, T., Alem, G., Mekuria, G., Zeleke, H. 2016. Exclusive breastfeeding practice and associated factors among mothers in Motta town, East Gojjam zone, Amhara Regional State, Ethiopia, 2015: a cross-sectional study. International Breastfeeding Journal, 12(1):12–12.

UNCF 2009. Tracking progress on child and maternal nutrition: survival and development priority. pages 1–124.

WHO 2008. Indicators for assessing infant and young child feeding practices. page 19.

WHO 2017. Babies and mothers worldwide failed by lack of investment in breastfeeding. Saudi Medical Journal, 38(9):974–975.

Yaqub, A., Gul, S. 2013. Reasons for failure of exclusive breastfeeding in children less than six months of age. Journal of Ayub Medical College Abbottabad, 25(1-2):165–167.