

## تأثير العوامل الاجتماعية والثقافية على معرفة وممارسة الأمهات الكويتيات للرضاعة الطبيعية: دراسة تطبيقية

مها السجاري

### ملخص

**هدف الدراسة:** هدفت هذه الدراسة الوصفية إلى تحديد أثر العوامل الاجتماعية والثقافية في مدى معرفة الأمهات الكويتيات بالوقت المناسب للبدء بالرضاعة الطبيعية، والفترة الزمنية المثالية للرضاعة، والوقت المناسب لإدخال المكملات الغذائية للرضيع. **المنهجية:** تم توزيع استمارة ذاتية على 870 أما كويتية، وهي تتألف من أربعة أجزاء: (1) البيانات الاجتماعية والثقافية، (2) أسئلة حول مدى معرفة الأم بالوقت المناسب للبدء بالرضاعة الطبيعية، (3) أسئلة حول المدة الزمنية المثلى لممارسة الرضاعة الطبيعية، و(4) مصادر المعلومات الرئيسة للأمهات حول الرضاعة الطبيعية. **النتائج:** كشفت الدراسة عن وجود اختلافات بين المعلومات الديموغرافية للمشاركات (العمر، والحالة العائلية، والخلفية العرقية، والوضع الوظيفي) ومدى معرفتهم بالوقت المناسب للبدء بالرضاعة الطبيعية والمدة الزمنية المثالية للرضاعة. تم أيضاً الكشف عن وجود علاقة ذات دلالة إحصائية بين العوامل الديموغرافية للمشاركات (العمر، والحالة العائلية، والخلفية العرقية، والوضع الوظيفي) ومدى معرفتهن بالوقت المناسب لتقديم المكملات الغذائية لأطفالهن الرضع. وقد كانت أمهات المشاركات المصدر الرئيسي للمعلومات حول ممارسة الرضاعة الطبيعية في هذه الدراسة. **الخلاصة:** يمكن أن تساعد نتائج هذه الدراسة الأطباء واختصاصيي الرضاعة الطبيعية في توفير رعاية أكثر للأمهات المرضعات من خلال معرفة العوامل الثقافية المؤثرة في درجة الوعي والمعرفة حول ممارسة الرضاعة الطبيعية وتقديم المشورة المناسبة لهنّ حولها.

**المصطلحات الرئيسة:** الرضاعة الطبيعية، المعرفة، الممارسة، عوامل اجتماعية- ثقافية، أمهات كويتيات.

## **The Impact of Social and Cultural Factors on the Kuwaiti Mothers' Knowledge and Practice of Breastfeeding: An Applied Study**

***Maha M Al-Sejari\****

### **Abstract**

**Objective:** This is a cross-sectional descriptive study that aims to identify the influence of socio-cultural factors on Kuwaiti mothers' knowledge of Breast Feeding (BF) initiation and duration, and of the appropriate time for introducing food supplements. **Methods:** A self-administered questionnaire was handed to 870 Kuwaiti mothers, and it consisted of four sections: socio-cultural information, knowledge of BF initiation, knowledge of BF duration, and sources of information about exclusive BF. **Results:** there were significant differences between the participants' demographic information (age, ethnic background, governorate, and occupational status) and their knowledge of BF initiation and duration. A statistically significant relationship was found between the participants' demographic factors (age, marital status, ethnic background, and occupational status) and knowledge of when to introduce supplements to their infants. The participants' mothers were the main source of BF information. **Conclusions:** The findings of this study can assist physicians and lactation specialists with providing more culturally sensitive care to maternal patients and offering them appropriate counseling about breastfeeding practice.

**Keywords:** Breastfeeding, Knowledge, Practice, Socio-cultural Factors, Kuwaiti Mothers.

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\* Professor - Department of Sociology and Social Work - College of Social Sciences, Kuwait University.

**Research interests:** Mental health, Cultural-biological anthropology, Men's and women's health, Domestic Violence.

email: maha.alsejari@ku.edu.kw

## **Introduction**

The mother's milk is considered the most appropriate food for newly born babies all over the world; however, numerous determinants affect the initiation and duration of breastfeeding (BF) (David Napier et al., 2014; Victora et al., 2015; Rollins et al., 2016). According to a report by the United Nations Children's Fund (UNICEF), the first six months of an infant's life are crucial for their physiological and mental development; therefore, exclusive BF is encouraged up to the age of two years or beyond (WHO/UNICEF, 2014). Exclusive BF was defined by Labbok and Krasovec (1990) as introducing only breast milk to a newborn infant as the main source of nutrition, with no additional drinks (including water) or food for the first six months of the infant's life. Many studies have shown that breast milk has a significant effect on the infants' cognitive development, and that breastfeeding is associated with factors such as increased intelligence, accomplishment of higher education in adulthood, a stronger immunological protection, and reduced incidence of chronic and infectious diseases (American Academy of Pediatrics [AAP], 2012; Hackman, Sznajder, & Kjerulff, 2022; Hayatbakhsh et al., 2012; Victora et al., 2015). However, there are several factors that strongly impact a mother's knowledge and decisions about the initiation, duration, and cessation of BF practice. These factors are associated with maternal socio-demographic characteristics, psychosocial condition, social support, biomedical aspects, health care systems, area of residence (urban or rural), public policy factors, cultural beliefs and values, and community perspective (WHO, 1998).

## **Literature review**

There have been many cross-cultural studies (Chalmers & Royle, 2009; Brown et al., 2009; Condon et al., 2012; Dennis et al., 2011; Wambach et al., 2011) that examined factors influencing women's decision to select BF as the main method of infant feeding. For example, Al Bustan and Kohli (1988) conducted a study among 1553 Kuwaiti women to explore the factors that strongly influence the mothers' decisions regarding BF initiation and duration. The study outcomes showed that initiation and duration rate of BF among Kuwaiti mothers were moderate, as in other Middle Eastern

countries. Furthermore, the study revealed that the duration of BF practice was significantly associated with the mother's age at the time of the birth, and also with child parity. Younger mothers and mothers with older children reported shorter periods of BF compared to older mothers and mothers with younger children. In addition, the study showed that the mother's decisions regarding BF practice were significantly associated with the mother's age at the time of marriage, education, occupational status, and family income. Amine et al. (1989) performed a cross-sectional survey among Kuwaiti mothers to measure the incidence of BF practice; their study revealed that 86% of Kuwaiti mothers initiated BF post-delivery, and 60.6% of the mothers reported exclusive BF.

Al-Mazroui et al. (1997) conducted a study among 221 infants (4 weeks old) in Al Ain, UAE, to investigate the factors that influence BF initiation, BF patterns, and feeding supplements. They found that the practice of exclusive BF during the first month of the infant's life was reported by only 4% of the mothers, and the initiation of BF on the first day of delivery was reported by half of the mothers (51%). They also identified factors that were significantly associated with postponing the BF initiation beyond the first day of life (younger age of the mother, complicated labor, newborn's lower weight at birth, and unawareness of colostrum advantages). The main factors that delayed the initiation of BF on the second and third post-delivery days were insufficient milk in the breast, the mother being exhausted after delivery (41%), a lack of milk in the breast (33%), and the baby's staying in a special care unit (26%). Moreover, Al-Mazroui et al. (1997) reported that the infants' main food sources besides milk were water, juice, tea, and local herbal drinks such as Aniseed and Chamomile.

Abalkhail and Shawky (2003) conducted a study among 400 Saudi women in Jeddah to assess the factors that significantly influence the mother's decision to initiate BF practice during the first year of an infant's life, and to identify the risk factors that caused BF cessation. They found that the initiation of BF practice after birth was reported by 94.0% of the respondents, and 40.0% of those respondents claimed that they maintained BF for the first year postpartum. Moreover, oral contraceptives intake and caesarean section delivery were significantly associated with a shorter

duration of BF (less than 12 months postpartum). Ogbeide et al. (2004) did a cross-sectional study among 704 Saudi women at the Al Kharj Health Centre, and they found that more than half (66.1%) of the mothers reported that they practiced partial BF, while one-fourth (27.3%) of the mothers said that they practiced exclusive BF, and only 6.7% of the mothers said that they used exclusive bottle feeding. Moreover, the study found that several factors significantly affected the mothers' decisions to engage in exclusive BF, such as their spouse's level of education, encouragement to breastfeed received, and the hospital's supply of milk samples at discharge. In addition, the study showed that the following socio-demographic factors were significantly associated with BF practice: the father's and mother's age, parity, number of offspring previously breastfed, age of the last-born child, and duration of the previous breastfeeding periods.

Batal et al. (2005) conducted a study among 830 Lebanese mothers at health centers in Lebanon. The study reported that more than half of the mothers (55.9%) said that they started BF within a few hours of birth; while 18.3% of the mothers said that they started BF within half an hour of birth, and 21.2% said that they initiated BF a few days after birth. Moreover, the study identified factors that affected the timing of BF initiation, such as the type of delivery (vaginal/caesarean section) and factors relating to the hospital conditions that encouraged the frequency of mother-infant interaction, night BF, and rooming-in.

Furthermore, Batal et al. (2005) found that the mother's educational level and place of residence (urban/rural) were negatively associated with the mothers' practicing of exclusive BF. Moreover, the mother's educational level and the use of painkillers during delivery were inversely associated with the duration of BF. Chalmers and Royle (2009) performed a study among Canadian mothers to detect factors that influenced initiation and duration of BF. Their study revealed that the mother's age, ethnic background, religious affiliation, educational level, socioeconomic status, and family support were the main socio-demographic factors that significantly affected the practice of BF.

Dashti et al. (2010) conducted a study among 373 mothers who had recently given birth at four hospitals in Kuwait. The purpose of the study

was to assess BF prevalence and the factors that were associated with a mother's decision to initiate BF. The study reported that the majority (92.5%) of the mothers initiated BF shortly after delivery; however, only 10.5% of the mothers practiced exclusive BF, and 55% of the mothers who practiced exclusive BF dropped to half after discharge from the hospital. Also, according to the study, 18.2% of the mothers reported that they fed colostrum to their babies as their first food, and 81.8% of the mothers reported that pre-lacteal feeding was the norm. Moreover, the findings of Dashti et al. (2010) showed that paternal support for BF after discharge from the hospital had a significant positive influence on both BF practice and the infant's health post-delivery, and that caesarean section delivery had a negative impact on the mother's decision regarding BF practice. Nassar et al. (2014) conducted a study among 234 mothers in Kuwait to examine the factors that influenced the mother's decision on BF duration and cessation. The study results revealed that the father's support was a significant factor that positively influenced the mother's decision regarding BF practice, and 26.5% of the mothers breastfed their baby up to the age of 6 months or more. The main risk factors for the early cessation of BF were higher maternal age, late initiation of BF, maternal and infant illness, insufficient BF information given after delivery, separate housing from their family, and inconvenient environment at work.

Al-Kandari and Ramadan (2018) conducted a study among 712 mothers in Kuwait to investigate the factors that affected the mother's decision regarding BF practice and duration. The study showed that younger mothers tended to BF their babies for a shorter duration than older mothers, and first and second children had shorter durations of BF compared to fourth children. Furthermore, the study revealed that the mother's employment conditions, the mother's economic status, duration of marriage, and family stability were correlated positively with duration of artificial feeding. On the other hand, the mother's age, number of abortions, and the mother's religiosity level were negatively associated with artificial feeding duration. Nevertheless, the mother's age, ethnic background, and type of marriage had a strong influence on the initiation and duration of BF. Also, Al-Kandari and Ramadan (2018) found that

mothers from nonconsanguineous marriages and from a Bedouin ethnic background reported lower mean duration of BF compared to those from consanguineous marriages and from an Urban ethnic background.

### **Biocultural theory and breastfeeding**

From a biocultural theory perspective, “Breastfeeding is the ultimate biocultural phenomenon; in humans, breastfeeding is not only a biological process but also a culturally determined behavior” (Stuart-Macadam, 2017, p.7). According to the biocultural theory perspective, breastfeeding is not instinctive because it is reliant on training and learning; therefore, maternal practice of breastfeeding is shaped by cultural and social aspects. Cultural norms, familial traditions and individual beliefs impact the initiation and duration of breastfeeding practice as well as the type and timing of introducing supplemental foods which consequently affect the mothers' behavior regarding mother–infant interaction, emotional and health adjustment, and infants' growth and performance (Bosch, 2011; Brion et al., 2011; Figueiredo et al., 2010; Groer and Morgan, 2007; Mezzacappa, Guethlein, & Katkin, 2002)

### **Objectives and importance of the study**

In Kuwait, several socio-economic aspects of life have changed after oil excavation. These changes happened alongside other alterations in Kuwaiti lifestyle, leading to new behaviors, cultural norms and beliefs, maternal behavior, and infant feeding practices. Since the late 1980s, a few studies have been conducted on BF practice among Kuwaiti mothers in Kuwait (Al Bustan & Kohli, 1988; Amine et al., 1989). The objective of the current study is to identify the influence of socio-cultural factors on Kuwaiti mothers' knowledge of BF initiation and duration, and on the timing of introducing food supplements to the infants. This paper will try to answer the following questions:

**Research question 1:** Is there a significant relationship between Kuwaiti mothers' knowledge of BF initiation and socio-cultural variables (age, educational level, marital status, religious affiliation, social sector, Kuwaiti governorate, and occupational status)?

**Research question 2:** Is there a significant relationship between Kuwaiti mothers' knowledge of BF duration and socio-cultural

variables (age, educational level, marital status, religious affiliation, social sector, Kuwaiti governorate, and occupational status)?

**Research question 3:** Is there a significant relationship between Kuwaiti mothers' knowledge of when to start feeding supplements to infants and socio-cultural variables (age, educational level, marital status, religious affiliation, social sector, Kuwaiti governorate, and occupational status)?

**Research question 4:** What are the sources of information about BF among Kuwaiti mothers?

### Study terminology

**Breastfeeding:** The world Health Organization (WHO) defines breastfeeding as “the child received breast milk (direct from the breast or expressed)” (Yngve & Sjöström, 2001, p.632).

**Initiation of BF:** is provision of mother's breast milk to infants “within 24 hours of birth (“early”) or equal to or after 24 hours of birth (“late”)” (Debes et al.,2013, p.2).

**Duration of BF:** “is the length of time for any breastfeeding, including breastfeeding through the initial stage of exclusive breastfeeding and any period of complementary feeding until weaning” (Noel-Weiss, Boersma & Kujawa-Myles, 2012,p.1) .

**Exclusive BF:** “is a measure of the amount of breastfeeding without supplementation (e.g., infant formula or other breast milk replacements), and 6 months of age is a key marker since complementary foods (i.e., solids) usually begin around 6 months postpartum” (Noel-Weiss, Boersma & Kujawa-Myles, 2012, p.1).

## Method

### Study design and population

The present study is a cross-sectional research project that was performed among 870 Kuwaiti mothers selected from all six Kuwaiti governorates. The study is a part of a big project that was conducted by the author between December 2018 and December 2019, and the sampling



method was based on convenience and non-probability sampling. After informing the participants about the study procedures and objectives and about their right to withdraw from the study at any time, a self-administered questionnaire was handed to the women, which was completed anonymously and collected after completion. The data collection procedures and regulations follow the Kuwait University research method.

### **Study instruments and data collection**

The questionnaire consisted of four sections, and it contained closed-ended questions intended to measure the identified variables (socio-cultural information, knowledge of BF initiation, knowledge of BF duration, and sources of information about BF). The first section of the structured questionnaire contained questions about the mother's socio-cultural characteristics (i.e., age, educational level, ethnic background, religious affiliation, marital status, occupational status, monthly income, and residential area). The second section of the questionnaire contained questions about the mothers' knowledge of BF; the first question was about post-delivery initiation, and participants had to choose one of the following answers: immediately after birth, within 24 hours of birth, 24 hours after birth, and other. The second question was about the mothers' knowledge of BF frequency per day, and participants had to choose one of the following options: according to schedule, according to the infant's need, other, and I do not know. The third section of the questionnaire contained questions about the mothers' knowledge of BF duration (where participants had to choose either from 0–3 months, 4–6 months, 6.1–9 months, or more than 9.1 months) and the appropriate time to introduce food supplements to their infants (where participants had to choose either from 0–3 months, 3.1–6 months, or more than 6.1 months). The fourth section of the questionnaire contained a question about the sources of information about the benefits of BF that the mothers were able to have access to, and participants had to choose one or more of the following sources: media, social media, health centers, educational institutions, mothers, sisters, grandmothers, girlfriends, spouses, and other).

To assure the validity of the questionnaire, six faculty members from Kuwait University, who are specialists in the field of medical anthropology,

sociology, and public health, evaluated and reviewed the translated instrument from English into Arabic. To test the accuracy and meaning of the translated instrument, the questionnaire was distributed to 30 women. The reliability of the study instrument showed high internal consistency (Cronbach's alpha was 0.87).

### **Statistical analysis**

Several statistical tests were performed using SPSS (version 23.0) for data analysis. A t-test and a chi-squared test were applied to detect differences in the degree of association between the participants' socio-cultural variables and their knowledge of BF initiation, duration, and introduction of food supplements to the infant. For all analyses, values were two-tailed and  $p < 0.05$  was considered statistically significant.

## **Results**

### ***Description of the population***

Table 1 shows that the age of more than half of the participants was between 31 and 50 ( $n = 458$ , 53.1%), and the mean age was 36.30 (SD = 10.48). Most of the participants were married ( $n = 800$ , 92.0%), and the majority were Sunni Muslims ( $n = 699$ , 80.3%) with Bedouin ethnic background ( $n = 444$ , 51.0%). Almost three-fourths ( $n = 634$ , 72.9%) of the participants held a university degree, and nearly one-third of the participants ( $n = 205$ , 23.6%) lived in the Al-Asimah district. In addition, Table 1 shows that nearly one-third of the participants ( $n = 244$ , 27.9%) reported a monthly income of 801–1110 K.D., and more than half ( $n = 510$ , 58.6%) of the participants were retired. More than three-fourths (74.17%) of the participants reported that their type of delivery was normal.

**Table 1.**

*Distribution of Participants' Sociodemographic Variables of the Sample (N = 870)*

| Characteristics              | N (%)      | Characteristics            | N (%)       |
|------------------------------|------------|----------------------------|-------------|
| <b>Age category, years</b>   |            | <b>Income K.D</b>          |             |
| < 30                         | 299 (34.7) | < 500                      | 153 (17.5)  |
| 31-50                        | 458 (53.1) | 501-800                    | 181 (20.7)  |
| >50                          | 105 (12.2) | 801-1110                   | 244 (27.9)  |
| <b>Occupational Status</b>   |            | 1101-1400                  | 131 (15.0)  |
| Student                      | 112 (12.9) | 1401-1700                  | 49(5.6)     |
| Student & Employed           | 46 (5.3)   | 1701-2000                  | 38 (4.4)    |
| Employed                     | 510 (58.6) | 2001-2300                  | 32 (3.7)    |
| Retired                      | 81 (9.3)   | >2301                      | 45 (5.2)    |
| Private Business             | 16 (1.8)   | <b>Kuwait governorates</b> | 205 (23.6)  |
| Housewife                    | 104 (12.0) | AlAsimah                   | 147 (16.9)  |
| <b>Religious Affiliation</b> |            | Hawalli                    | 59 (6.8)    |
| Sunni                        | 699 (80.3) | Mubarak Al-kabeer          | 134 (15.4)  |
| Shiite                       | 171 (19.7) | ALFarwayniyah              | 62 (22.5)   |
| <b>Marital Status</b>        |            | ALJahra                    | 78 (9.0)    |
| Married                      | 800 (92.0) | ALAhmadi                   |             |
| Divorced                     | 52 (6.0)   | <b>Delivery Method</b>     |             |
| Widow                        | 18 (2.1)   | Normal                     | 650 (74.17) |
| <b>Ethnic Background</b>     |            | C-Section                  | 206 (23.7)  |
| Urban                        | 426 (49.0) | <b>Educational level</b>   |             |
| Bedouin                      | 444 (51.0) | < High school              | 41 (4.7)    |
|                              |            | High school & Diploma      | 135 (15.5)  |
|                              |            | >University                | 694 (79.8)  |

Table 2 shows the participants' knowledge and practice of breastfeeding (BF). Regarding the participants' knowledge of BF, more than half of the participants (n = 452, 52.0%) said that the best BF duration is nine months or more, and about half of participants (n = 427, 49.1%) said that the best time to start BF is immediately after birth. Around three-fourths of the participants (n = 615, 70.7%) said that they made the decision to BF their

baby before giving birth, and more than half of the participants (n = 551, 63.1%) reported that their main source of information on BF was their mothers. Nearly three-fourths of the participants (n = 651, 74.8%) said that the frequency of BF depended on the infant’s demand, and one-third of the participants (n = 279, 32.1%) knew that they should introduce food supplements to their infants at the age of four to six months. The majority of the participants (n = 737, 84.7%) had accurate information about the health benefits of giving colostrum to their infants.

**Table 2**  
*Characteristics of 870 Women According to Their Knowledge and Practices of Breastfeeding (BF)*

| Characteristics                                                        | N (%)      | Characteristics                           | N (%)      |
|------------------------------------------------------------------------|------------|-------------------------------------------|------------|
| <b>Have you made the decision to BF your baby before giving birth?</b> |            | <b>BF duration (months)</b>               |            |
| Yes                                                                    | 615 (70.7) | 0-3                                       | 137 (15.7) |
| No                                                                     | 255 (29.3) | 4-6                                       | 135 (15.5) |
|                                                                        |            | 6.1-9                                     | 146 (16.8) |
| <b>When to start BF</b>                                                |            | More than 9.1                             | 452 (52.0) |
| Immediately                                                            | 427 (49.1) |                                           |            |
| Within 24 hours after birth                                            | 257 (29.5) | <b>When to start supplements (months)</b> |            |
| 24 hours after birth                                                   | 147 (16.9) | 0-3 months                                | 65 (7.5)   |
| Other                                                                  | 39 (4.5)   | 4-6 months                                | 279 (32.1) |
| <b>Major Source of Information</b>                                     |            | 478 (54.9)                                |            |
| Health centre                                                          | 320 (36.7) | More than 6.1 months                      | 48 (5.5)   |
| Media                                                                  | 188 (21.5) | Don't know                                |            |
| Social Media                                                           | 297 (34.1) | <b>Frequency of BF</b>                    |            |
| Educational Institute                                                  | 65 (7.4)   | Scheduled                                 | 130 (14.9) |
| Friends                                                                | 192 (22.0) | On demand                                 | 651 (74.8) |
| Grandmother                                                            | 165 (18.9) | Other                                     | 23 (2.6)   |
| Mother                                                                 | 165 (18.9) | Don't know                                | 66 (7.6)   |
| Sisters                                                                | 551 (63.1) |                                           |            |
| Other                                                                  | 204 (23.4) | <b>Giving colostrum</b>                   |            |
|                                                                        | 115 (13.2) | Good                                      | 737 (84.7) |
|                                                                        |            | Not good                                  | 16 (1.8)   |
|                                                                        |            | Don't' know                               | 117 (13.4) |

***Kuwaiti maternal socio-cultural variables and knowledge of BF initiation***

Table 3 presents the maternal socio-cultural variables that were significantly associated with the knowledge of BF initiation after applying chi-squared analysis to the predicted associated factors. The variables are age ( $P < .001$ ), ethnic background ( $P < .0001$ ), Kuwaiti governorate ( $P < .01$ ), and occupational status ( $P < .0001$ ). The remainder of the factors listed under methods were not significantly associated with maternal knowledge of BF initiation. A statistically significant association was found between the participants' knowledge of BF initiation and their age ( $X^2 = 21.897$ ,  $p = 0.001$ ): more than half (55.2%) of the participants aged between 31 and 50 reported that mothers should start BF immediately after delivery, while out of the participants aged 30 and younger, only 32.7% stated this. Also, 54.3% of the participants whose ethnic background was Urban reported that mothers should start BF immediately after delivery, compared to 45.7% of the participants whose ethnic background was Bedouin ( $X^2 = 19.569$ ,  $p = 0.0001$ ).

Table 3 also shows that 26.2% of the participants who lived in Al Jahra governorate reported that mothers should start BF immediately after delivery, compared to 23.9% of the participants who lived in Al Asimah governorate and 19.7% of participants who lived in Hawalli governorate ( $X^2 = 30.595$ ,  $p = 0.01$ ). Also, 59.5% of the participants who were employed reported that mothers should start BF immediately after delivery, compared to 13.3% of the participants who were housewives ( $X^2 = 59.555$ ,  $p = 0.0001$ ).

**Table 3**

***Kuwaiti Maternal Sociocultural Variables and Knowledge of BF Initiation***

| Sociocultural Variables |                            | BF Initiation   |                |        |        | X <sup>2</sup> | Sig  |
|-------------------------|----------------------------|-----------------|----------------|--------|--------|----------------|------|
| Age                     | After delivery immediately | Within 24 hours | After 24 hours | Other  | Total  | 21.897         | .001 |
|                         | N                          | N               | N              | N      | N      |                |      |
|                         | (%)                        | (%)             | (%)            | (%)    | (%)    |                |      |
| 30 or below             | 138                        | 76              | 60             | 25     | 299    |                |      |
|                         | (32.7)                     | (29.8)          | (41.1)         | (64.1) | (34.7) |                |      |

**Cont. Table 3***Kuwaiti Maternal Sociocultural Variables and Knowledge of BF Initiation*

| Sociocultural Variables |                     | BF Initiation |               |              |              | X <sup>2</sup> | Sig         |
|-------------------------|---------------------|---------------|---------------|--------------|--------------|----------------|-------------|
| Ethnic Background       | 31-50               | 233<br>(55.2) | 142<br>(55.7) | 72<br>(49.3) | 11<br>(28.2) | 458<br>(53.1)  |             |
|                         | 51+                 | 51<br>(12.1)  | 37<br>(14.5)  | 14<br>(9.6)  | 3<br>(7.7)   | 105<br>(12.2)  |             |
|                         | Urban               | 232<br>(54.3) | 128<br>(49.8) | 55<br>(37.4) | 11<br>(28.2) | 426<br>(49.0)  | 19.569 .000 |
|                         | Bedouin             | 195<br>(45.7) | 129<br>(50.2) | 92<br>(62.6) | 28<br>(71.8) | 444<br>(51.0)  |             |
|                         | Kuwait Governorates |               |               |              |              |                |             |
|                         | AlAsimah            | 102<br>(23.9) | 70<br>(27.2)  | 28<br>(19.0) | 5<br>(12.8)  | 205<br>(23.6)  | 30.595 .010 |
|                         | Hawalli             | 84<br>(19.7)  | 42<br>(16.3)  | 16<br>(10.9) | 5<br>(12.8)  | 147<br>(16.9)  |             |
|                         | ALFarwayniyah       | 60<br>(14.1)  | 41<br>(16.0)  | 24<br>(16.3) | 9<br>(23.1)  | 134<br>(15.4)  |             |
|                         | ALAhmadi            | 40<br>(9.4)   | 24<br>(9.3)   | 8<br>(5.4)   | 6<br>(15.4)  | 78<br>(9.0)    |             |
|                         | ALJahra             | 112<br>(26.2) | 61<br>(23.7)  | 60<br>(40.8) | 14<br>(35.9) | 247<br>(28.4)  |             |
| Occupational Status     | Mubarak Al-kabeer   | 29<br>(6.8)   | 19<br>(7.4)   | 11<br>(7.5)  | 0<br>(0.0)   | 59<br>(6.8)    |             |
|                         | Student             | 41<br>(9.6)   | 30<br>(11.7)  | 27<br>(18.4) | 14<br>(35.9) | 112<br>(12.9)  | 59.555 .000 |

**Cont. Table 3**

*Kuwaiti Maternal Sociocultural Variables and Knowledge of BF Initiation*

| Sociocultural Variables | BF Initiation |               |              |              |               | X <sup>2</sup> | Sig |
|-------------------------|---------------|---------------|--------------|--------------|---------------|----------------|-----|
| Student & employed      | 29<br>(6.8)   | 9<br>(3.5)    | 5<br>(3.4)   | 5<br>(12.8)  | 46<br>(5.3)   |                |     |
| Employed                | 254<br>(59.5) | 155<br>(60.3) | 24<br>(16.3) | 3<br>(7.7)   | 510<br>(58.6) |                |     |
| Retired                 | 38<br>(8.9)   | 25<br>(9.7)   | 83<br>(56.5) | 18<br>(46.2) | 81<br>(9.3)   |                |     |
| Private Business        | 8<br>(1.9)    | 4<br>(1.6)    | 17<br>(11.6) | 1<br>(2.6)   | 16<br>(1.8)   |                |     |
| Housewife               | 57<br>(13.3)  | 34<br>(13.2)  | 3<br>(2.0)   | 1<br>(2.6)   | 104<br>(12.0) |                |     |

***Kuwaiti maternal socio-cultural variables and knowledge of BF duration***

Table 4 displays the maternal sociocultural variables that were significantly associated with knowledge of BF duration after applying the chi-squared analysis to the predicted associated factors. The variables were age ( $P < .005$ ), ethnic background ( $P < .0001$ ), Kuwaiti governorate ( $P < .01$ ), and occupational status ( $P < .05$ ). The remainder of the factors listed under methods were not significantly associated with maternal knowledge of BF duration. A statistically significant association was found between the participants' knowledge of BF duration and age ( $X^2 = 18.578$ ,  $p = 0.005$ ): more than half (54.8%) of the participants aged between 31 and 50 reported that mothers should BF for more than nine months, compared to 31% of the participants aged 30 and younger.

More than half (53.3%) of the participants whose ethnic background was Urban reported that mothers should continue to BF for more than nine months, compared to 46.2% of the participants whose ethnic background was Bedouin ( $X^2 = 19.079$ ,  $p = 0.0001$ ). Also, 57.5% of the participants who were employed reported that mothers should continue BF for more than nine months, compared to 13.5% of the participants who were housewives, and 11.1% of the participants who were retired ( $X^2 = 30.245$ ,  $p = 0.035$ ).

**Table 4***Kuwaiti Maternal Sociocultural Variables and Knowledge of BF Duration by Months*

| BF Duration         |        |        |        |               |        | X <sup>2</sup> | Sig  |
|---------------------|--------|--------|--------|---------------|--------|----------------|------|
| Age                 | 0-3    | 4-6    | 6.1-9  | More than 9.1 | Total  | 18.578         | .005 |
|                     | N      | N      | N      | N             | N      |                |      |
|                     | (%)    | (%)    | (%)    | (%)           | (%)    |                |      |
| 30 or below         | 63     | 50     | 47     | 139           | 299    | 19.079         | .000 |
|                     | (46.3) | (37.3) | (32.9) | (31.0)        | (34.7) |                |      |
| 31-50               | 68     | 69     | 75     | 246           | 458    |                |      |
|                     | (50.0) | (51.5) | (52.4) | (54.8)        | (53.1) |                |      |
| 51+                 | 5      | 15     | 21     | 64            | 105    |                |      |
|                     | (3.7)  | (11.2) | (14.7) | (14.3)        | (12.2) |                |      |
| Ethnic background   |        |        |        |               |        |                |      |
| Urban               | 46     | 60     | 77     | 243           | 426    |                |      |
|                     | (33.6) | (44.4) | (52.7) | (53.8)        | (49.0) |                |      |
| Bedouin             | 91     | 75     | 69     | 209           | 444    |                |      |
|                     | (66.4) | (55.6) | (47.3) | (46.2)        | (51.0) |                |      |
| Occupational status |        |        |        |               |        |                |      |
| Student             | 27     | 24     | 20     | 41            | 41     |                |      |
|                     | (19.7) | (17.8) | (13.7) | (9.1)         | (9.1)  |                |      |
| Student & Employed  | 6      | 5      | 7      | 28            | 28     |                |      |
|                     | (4.4)  | (3.7)  | (4.8)  | (6.2)         | (6.2)  |                |      |
| Employed            | 83     | 85     | 82     | 260           | 260    |                |      |
|                     | (60.6) | (63.0) | (56.2) | (57.5)        | (57.5) |                |      |
| Retired             | 4      | 10     | 17     | 50            | 50     |                |      |
|                     | (2.9)  | (7.4)  | (11.6) | (11.1)        | (11.1) |                |      |
| Private business    | 2      | 1      | 2      | 11            | 11     |                |      |
|                     | (1.5)  | (0.7)  | (1.4)  | (2.4)         | (2.4)  |                |      |
| Housewife           | 15     | 10     | 18     | 61            | 61     |                |      |
|                     | (14.4) | (7.4)  | (12.3) | (13.5)        | (13.5) |                |      |



### ***Participants' knowledge of when to introduce supplements to their infants***

A statistically significant association was found between the participants' socio-cultural characteristics (age, marital status, ethnic background, and occupational status) and knowledge of when to introduce supplements to their infants. A statistically significant association was found between the participants' age and their knowing to introduce supplements to their infants at the age of four to six months ( $X^2 = 19.634, p = 0.003$ ). 56.0% of the participants aged between 31 and 50 reported that the best age to introduce food supplements to an infant was between four and six months, compared to 27.8% of the participants aged 30 and younger, and 16.2% of the participants aged 51 years and older (Table 8). Furthermore, a statistically significant association was found between the participants' marital status and their knowing to introduce supplements to their infants at the age of four to six months ( $X^2 = 17.237, p = 0.008$ ). 92.8% of the married participants reported that the best age to introduce food supplements to an infant was between four and six months of age, compared to 6.1% of the divorced participants and 1.1% of the widowed participants (Table 5). Also, knowing to introduce supplements to infants at the age of four to six months has a statistically significant association with ethnic background ( $X^2 = 11.510, p = 0.009$ ). 50.2% of Bedouin participants reported that the best age to introduce food supplements to an infant is between four and six months, compared to 49.8% of Urban participants. Moreover, the participants' occupational status had a statistically significant association with knowing to introduce supplements to infants at the age of four to six months ( $X^2 = 38.237, p = 0.004$ ). 57.3% of the employed participants reported that the best age to introduce food supplements to an infant is between four and six months, compared to 21.5% of the student participants and 13.8% of the housewife participants (Table 5).

**Table 5**

*Kuwaiti Maternal Sociocultural Variables and Knowledge of When to Start Supplements (months)*

|                     | When to start supplements (months) |                 |                              |                           |                   | X2     | Sig  |
|---------------------|------------------------------------|-----------------|------------------------------|---------------------------|-------------------|--------|------|
|                     | 0-3<br>N<br>(%)                    | 4-6<br>N<br>(%) | More<br>than 6.1<br>N<br>(%) | Don't<br>know<br>N<br>(%) | Total<br>N<br>(%) |        |      |
| Age                 |                                    |                 |                              |                           |                   |        |      |
| 30 or below         | 26<br>(40.6)                       | 77<br>(27.8)    | 171<br>(36.2)                | 25<br>(52.1)              | 299<br>(34.7)     | 19.634 | .003 |
| 31-50               | 34<br>(53.1)                       | 155<br>(56.0)   | 247<br>(52.2)                | 22<br>(45.8)              | 458<br>(53.1)     |        |      |
| 51+                 | 4<br>(6.3)                         | 45<br>(16.2)    | 55<br>(11.6)                 | 1<br>(2.1)                | 105<br>(12.2)     |        |      |
| Marital status      |                                    |                 |                              |                           |                   |        |      |
| Married             | 56<br>(86.2)                       | 259<br>(92.8)   | 444<br>(92.9)                | 41<br>(85.4)              | 800<br>(92.0)     | 17.237 | .008 |
| Divorced            | 34<br>(6.2)                        | 155<br>(6.1)    | 247<br>(5.6)                 | 22<br>(8.3)               | 458<br>(6.0)      |        |      |
| Widow               | 4<br>(7.7)                         | 45<br>(1.1)     | 55<br>(1.5)                  | 1<br>(6.3)                | 105<br>(2.1)      |        |      |
| Ethnic Background   |                                    |                 |                              |                           |                   |        |      |
| Urban               | 24<br>(36.9)                       | 139<br>(49.8)   | 248<br>(51.9)                | 15<br>(31.3)              | 426<br>(49.0)     | 11.510 | .009 |
| Bedouin             | 41<br>(63.1)                       | 140<br>(50.2)   | 230<br>(48.1)                | 33<br>(68.8)              | 444<br>(51.0)     |        |      |
| Occupational Status |                                    |                 |                              |                           |                   |        |      |
| Student             | 14<br>(21.5)                       | 30<br>(10.8)    | 54<br>(11.3)                 | 14<br>(29.2)              | 14<br>(29.2)      | 38.237 | .004 |

**Cont. Table 5**

*Kuwaiti Maternal Sociocultural Variables and Knowledge of When to Start Supplements (months)*

|                    | When to start supplements (months) |               |               |              |              | X2 | Sig |
|--------------------|------------------------------------|---------------|---------------|--------------|--------------|----|-----|
| Student & Employed | 3<br>(4.6)                         | 51<br>(5.4)   | 24<br>(5.0)   | 4<br>(8.3)   | 4<br>(8.3)   |    |     |
| Employed           | 34<br>(52.3)                       | 160<br>(57.3) | 294<br>(61.5) | 22<br>(45.8) | 22<br>(45.8) |    |     |
| Retired            | 5<br>(7.7)                         | 35<br>(12.5)  | 40<br>(8.4)   | 1<br>(2.1)   | 1<br>(2.1)   |    |     |
| Private Business   | 0<br>(0.0)                         | 11<br>(3.9)   | 4<br>(0.8)    | 1<br>(2.1)   | 1<br>(2.1)   |    |     |
| Housewife          | 9<br>(13.8)                        | 28<br>(10.0)  | 61<br>(12.8)  | 6<br>(12.5)  | 6<br>(12.5)  |    |     |

### Discussion

The present study revealed that about three-fourths of Kuwaiti mothers had made their decision to BF before giving birth; this is similar to Arora et al.'s study (2017), which suggested that women who had chosen to breastfeed before pregnancy were twice as likely to BF their baby compared to those who made their decision either during pregnancy or after giving birth. Our findings demonstrated the high tendency among Kuwaiti mothers to practice BF might be related to their regular visits to maternity health clinics, which provided them with health recommendations and information on the advantages of BF for both the mother's and the infant's health and wellbeing. According to biocultural theory, the current findings illustrate how Kuwaiti culture value the practice of BF among expecting mothers by encouraging them to make their decision before giving birth and preparing them mentally and emotionally.

Additionally, we found that three-fourths of Kuwaiti mothers started to breastfeed their newborns within 24 hours of birth; this finding is similar to the results reached by Olatubi and Olufarati's study (2016) which suggested that half of Nigerian mothers initiated BF within 30 minutes of birth. Arora et al. (2017) also found that most Australian mothers (92%)

began BF in the hospital. In contrast, Batal et al. (2005) found that only 18.3% of Lebanese mothers started BF within 30 minutes of birth. These cross-cultural differences in the timing of the initiation of BF can be associated with several factors, such as customs or beliefs of BF practice, participation in BF promotion programs, partner encouragement in BF-related decisions, additional health care to support post-delivery BF, and hospital-related factors (rooming-in, night feedings, and frequency of mother-infant interactions) (Amalina Che Hussain, Chih & Abdul Hamid, 2022; Benitez, 2023; Rostomian et al., 2022).

Moreover, our study revealed that more than half (68.8%) of Kuwaiti mothers chose the optimal duration of exclusive BF. These findings are consistent with those of Alamirew et al.'s (2017), who found that among Ethiopian mothers, 69.8% had sufficient knowledge about BF practice. In the same vein, Olatubi and Olufarati (2016) found that three-fourths (77.0%) of Nigerian mothers gave the correct answer regarding the optimal duration of exclusive breastfeeding. In contrast, Hörnell et al. (2001) found that Swedish mothers introduced formula milk to their infants at the age of four months and younger, and that there was a positive association between the introduction of formula feed and exclusive BF. The younger an infant was at the start of the regular formula feeding, the shorter the breastfeeding duration. These findings illustrate the significant impact of prenatal educational classes on the mothers' knowledge and practice of exclusive BF. Some studies also demonstrated the significant impact of the mothers' educational level on their decision to cease exclusive BF and introduce solid or semi-solid foods before four months of age (Batal et al., 2005; Ergenekon-Ozelci, 2006; Spyrou et al., 2022).

Additionally, our study reveals that more than half of Kuwaiti mothers aged between 31 and 50 knew correctly when the best age to introduce food supplements to the infant is. This is comparable to Al Bustan and Kohli's study (1988) in Kuwait that detected a strong relationship between a mother's age and her accurate and adequate knowledge of how BF benefits her infant's health. Younger mothers and mothers with older children reported shorter periods of BF compared to older mothers and mothers with younger children. These findings might be due to the association between the mothers' knowledge of how the nutrients from exclusive BF benefit infants' health and wellbeing, and to the years of maternity experience and feeding practice. In addition, the father's age can

also have a significant positive influence on the mother's knowledge and practice of exclusive BF (Al-Mazroui et al., 1997; Buttery & Mancz, 2022; Nassar et al., 2014; Ogbeide, 2004).

We found that most married Kuwaiti mothers had accurate knowledge of the best time to introduce food supplements to the infants. This can be attributed to the father's encouragement and father's educational level, and to background information about the advantages of exclusive BF to the health of the infant (Wang et al., 2013; Hernández & Callahan, 2008; Morrison et al., 2008). Previous studies demonstrated that mothers maintained a sufficient period of BF by virtue of their partner's external encouragement and support, and that mothers who didn't get encouragement and support from their partner did not BF as long. Moreover, we found that mothers who lived in Al Jahra governorate believed in the early initiation of exclusive BF, and believed that mothers should start BF immediately after delivery. This might be associated with the positive influence of family support that postnatal mothers received in this environment, which is occupied mainly by people with a Bedouin background. The cultural values of Al Jahra governorate favor having many children, because in this culture children represent power, prestige, blessing, and authority (Aoodah, 1988).

Occupational status also had a positive influence on the mothers' knowledge of the best age to introduce food supplements to the infants. This is consistent with the work of Musaiger (1995), Bonet et al. (2013), and Nassar et al. (2014) which showed that work environment, maternity leave, and the feasibility of breastfeeding at work were the main determinants of BF cessation. We found that employed Kuwaiti mothers were more knowledgeable about exclusive BF duration; this might be due to the satisfactory periods of maternity leave for Kuwaiti working mothers—two months with full salary and additional four months with half salary after labor, according to Kuwaiti Civil Service Commission (CSC) Maternity Law (CSC, 2020). Pursuant to Maternity Leave Law, mothers are allowed to spend more time breastfeeding their babies, which may in turn extend the duration of exclusive BF and postpone introducing food supplements.

Regarding the main sources of information about BF practice, we found that for most of the Kuwaiti participants the main source of information was their mothers, whereas physicians were the main sources of BF information for Lebanese mothers (Batal et al., 2005) and Iranian

mothers (Marandi et al., 1993), and health institutions were the main sources of information for Ethiopian mothers (Alamirew et al., 2017) and American mothers (Wiemann et al., 1998). This cross-cultural difference in the main sources of information about BF practice and duration suggests that a community health campaign should be established to develop maternity health programs in Kuwait to educate expecting mothers on BF practice, duration, and weaning method so that mothers could receive accurate information from medical authorities instead of being guided by cultural beliefs and norms. According to the work of Dennis (2002), Lu et al. (2001), and Shinwell et al. (2006), health care providers are considered significant determinants of a mother's decision to initiate BF and her tendency to continue breastfeeding and introduce formula feed.

### **Conclusion**

Further socio-cultural studies are required to understand the local customs and beliefs regarding exclusive breastfeeding practice and duration among Kuwaiti women. The findings of these studies could assist physicians and lactation specialists to provide more culturally sensitive care to the maternal patients and offer them appropriate counseling about breastfeeding practice. Furthermore, studies are also necessary to determine the influence of the partner's support and encouragement on the mother's decision to initiate and maintain exclusive BF. In-depth and comprehensive studies on the present situation with infant feeding practices and the factors associated with these practices must be done to investigate the changes in breastfeeding and weaning patterns and to evaluate the effectiveness of health-related programs on motivating mothers to make the decision before labor.

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### **Conflict of Interests**

The author declares that there is no conflict of interests.

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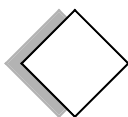
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