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Master of Science Thesis

INVESTIGATION OF MOTHERS' SATISFACTION WITH
BREASTFEEDING IN DHIQAR, IRAQ

Ali Hikmat Jasim ALAWADI

Supervisor
Assist. Prof. Ayşe Özge DENİZ

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**INVESTIGATION OF MOTHERS' SATISFACTION WITH
BREASTFEEDING IN DHIQAR, IRAQ**

BY

ALI HIKMAT JASIM ALAWADI

**Institute of Health Sciences
Department of Internal Medicine Nursing**

Degree of Master of Science

SUPERVISOR

Asst. Prof. Dr. Ayşe Özge DENİZ

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ACCEPTANCE AND APPROVAL

Ali Hikmat Jasim ALAWADI, a graduate student of the Institute of Health Sciences with the student number of 208210232, has successfully presented his thesis entitled “Investigation of Mothers’ Satisfaction with Breastfeeding in Dhiqar, Iraq” before the jury whose signatures are below, after fulfilling all of the requirements determined by the relevant regulations for the degree of Master of Science:

Advisor : Asst. Prof. Dr. Ayşe Özge DENİZ

Examining Committee Members:

Chairman : Asst. Prof. Dr. Ayşe Özge DENİZ
Faculty of Health Sciences
Çankırı Karatekin Üniversitesi

Member : Assoc. Prof. Dr. Derya KAYA ŞENOL
Faculty of Health Sciences
Osmaniye Korkut Ata Üniversitesi

Member : Asst. Prof. Dr. Nilay GÖKBULUT
Faculty of Health Sciences
Çankırı Karatekin Üniversitesi

Approved for the Graduate School of Health Sciences

Assoc.Prof. Dr. Nazan KAYTEZ
Director of Graduate School

ETHICS STATEMENT

The thesis entitled “Investigation of Mothers’ Satisfaction with Breastfeeding in Dhiqar, Iraq” which was prepared and presented as a thesis, was written by myself and in accordance with the scientific and academic rules and ethical conduct. The idea/hypothesis of my thesis solely belongs to my supervisor and to me. The research pertaining to the thesis was conducted by myself and therefore, all of the sentences used and interpretations within the work belong to me.

I declare the aforementioned issues to be correct.

Signature
Date

Ali Hikmat Jasim
ALAWADI

ABSTRACT

INVESTIGATION OF MOTHERS' SATISFACTION WITH BREASTFEEDING IN DHIQAR, IRAQ

Ali Hikmat Jasim ALAWADI

Master of Science in Nursing

Advisor: Asst. Prof. Dr. Ayşe Özge DENİZ

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Background: Nutrition plays an important role in maintaining healthy growth and development during infancy. The best form of nutrition for the baby is breast milk. Breast milk is special for every baby and its nutritional content varies according to the baby's needs. The most economical, healthy and practical way to feed breast milk is by breastfeeding. Breastfeeding strengthens the bond between mother and baby. The United Nations International Children's Fund (UNICEF) and the World Health Organization (WHO) also recommend breastfeeding only for the first six months, and breastfeeding with complementary foods until at least two years of age. For this reason, in order to increase breastfeeding success, it is important to know the satisfaction of mothers about their breastfeeding experiences in the early period and to maintain effective breastfeeding by creating an appropriate education plan.

Aim: This research aims to evaluate mothers' satisfaction with their breastfeeding experience in Dhiqar City, Iraq.

Method: The research was conducted as a descriptive cross-sectional type in order to determine the thoughts of breastfeeding mothers about their breastfeeding experiences in Iraq. The population of the study consisted of 199 mothers living in Dhiqar, Iraq between November 2022 and February 2023 who met the sampling criteria. As a data collection tool, a Mother Information Form and the Arabic version of the Maternal Breastfeeding Evaluation Scale (MBFES-A) were used. Number, percentage, mean, standard deviation, t-test and ANOVA tests were used in the analysis of the data. The Tukey test was used to determine the differences between groups.

Result: 45.7% of the mothers were in the age range of 30-39 years, 74.4% were secondary school graduates, 65.8% were working, 61.8% had a monthly income equal to their expenses, and 93.5% lived in a city. It was determined that 43.7% had

four or more children, 71.4% had had an unplanned pregnancy and 76.4% had had a normal delivery. In addition, 56.8% had received information about breastfeeding during pregnancy, 93.5% did not have any problems with breastfeeding in the partum / postpartum period, 48.2% breastfed their baby immediately after birth and 74.4% gave first breast milk to their baby after birth. The mean MBFES-A scale score of the mothers was 56.35 ± 7.04 , the mean of the Infant Satisfaction / Growth Sub-Dimension was 18.36 ± 3.56 , the mean of the Maternal Enjoyment/role attainment Sub-Dimension was 19.41 ± 3.19 and the lifestyle/body image sub-dimension was 19.41 ± 3.19 . The mean of the Lifestyle/ Body Image Sub-dimension was determined to be 18.57 ± 2.30 . It was determined that there were statistically significant differences in the participants' MBFES-A scores according to their education level, economic status perception, place of residence, number of children, whether their pregnancy was planned, whether they had received information on breastfeeding during pregnancy, whether they had had any problems with breastfeeding at the birth or afterwards, how long after the birth they had breastfed the baby, and what food they had first given to the baby after the birth ($p > 0.05$). No significant relationship was found between the sex of the baby and its age in months and breastfeeding satisfaction ($p > 0.05$). The mother's age, employment status and family type were found to affect different dimensions of breastfeeding satisfaction ($p < 0.05$).

Conclusion: According to the results obtained from the research, it was determined that the sociodemographic characteristics of the mother, the characteristics of birth, the infant and breastfeeding affected maternal breastfeeding satisfaction and its different dimensions. It was concluded that the gender of the baby and the month of the baby have no effect on the breastfeeding satisfaction of the mother. It is recommended by nurses that mothers' satisfaction with the breastfeeding experience and the factors affecting it be evaluated, and that individualized breastfeeding counselling be provided.

2023, 86 pages

Key Words: Breastfeeding, Breast milk, Satisfaction, Iraq, Nurse

ÖZET

IRAK DHİQAR ŞEHİRİNDEKİ ANNELERİN EMZİRMEYE YÖNELİK MEMNUNİYETLERİNİN ARAŞTIRILMASI

Ali Hikmat Jasım ALAWADI

Hemşirelik, Yüksek Lisans

Tez Danışmanı: Dr. Öğr.Üyesi Ayşe Özge DENİZ

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Giriş: Bebeklik döneminde sağlıklı büyüüp gelişmenin sürdürülebilmesi için beslenmenin yeri önemlidir. Bebek için en iyi beslenme şekli ise anne sütüdür. Anne sütü her bebek için özeldir ve besin içeriği bebeğin ihtiyaçlarına göre değişir. Anne sütüne ulaşmanın en ekonomik, sağlıklı ve pratik yolu ise emzirmektir. Emzirme, anne ve bebek arasındaki bağı güçlendirir. Birleşmiş Milletler Uluslararası Çocuklara Yardım Fonu (UNICEF) ve Dünya Sağlık Örgütü (DSÖ) de ilk 6 ay sadece anne sütü, en az iki yaşına kadar ise ek gıdalar ile birlikte anne sütü ile beslenmeyi önermektedir. Bu nedenle emzirme başarısını artırmak için annelerin erken dönemde emzirme deneyimlerine yönelik memnuniyetlerinin bilinmesi ve buna uygun eğitim planı oluşturularak etkin emzirmenin sürdürülmesi önemlidir.

Amaç: Bu araştırma, Irak Dhiqar Şehrindeki annelerin emzirme deneyimi ile ilgili memnuniyetlerini değerlendirmeyi amaçlamaktadır.

Yöntem: Araştırma, Irak'ta emziren annelerin emzirme deneyimlerine ilişkin memnuniyetlerini belirlemek amacıyla tanımlayıcı kesitsel tipte yapılmıştır. Araştırmanın evrenini, Kasım 2022-Şubat 2023 tarihleri arasında, Irak'taki Dhiqar şehrinde yaşayan ve örneklem kriterini karşılayan 199 anne oluşturmuştur. Veri toplama aracı olarak; Anne Bilgi Formu ve Maternal Emzirme Değerlendirme Ölçeğinin (MBFES-A) Arapça versiyonu kullanılmıştır. Verilerin analizinde sayı, yüzde, ortalama, standart sapma, t-testi ve ANOVA testleri kullanılmıştır. Gruplar arası farklılıkları belirlemek için de Tukey testi kullanılmıştır.

Bulgular: Annelerin %45,7'sinin 30-39 yaş aralığında, %74,4'ü ortaokul mezunu, %65,8'i çalışıyor, %61,8'inin aylık geliri gidere eşit, %93,5'i şehirlerde yaşıyor, %43,7'si 4 ve üzeri çocuk sahibi, %71,4'ünün gebeliği plansız, %76,4'ünün normal doğum yapmış olduğu saptandı. Ayrıca %56,8'inin gebelikte emzirmeye yönelik bilgi aldığı, %93,5'inin doğum/doğum sonrası dönemde emzirmeye yönelik herhangi

bir sorun yaşamadığı, %48,2'sinin bebeğini doğumdan hemen sonra emzirdiği ve %74,4'ünün doğumdan sonra ilk bebeğine anne sütü verdiği belirlenmiştir. Annelerin MBFES-A ölçeği puan ortalama $56,35 \pm 7,04$ olduğu, Bebek Memnuniyeti / Büyümesi Alt Boyutu ortalamasının $18,36 \pm 3,56$, Annenin Keyfi/Rol Edinmesi Alt Boyutu ortalamasının $19,41 \pm 3,19$ ve Yaşam Tarzı/ Anne Beden İmgesi Alt boyutu ortalamasının $18,57 \pm 2,30$ olduğu belirlenmiştir. Katılımcıların eğitim düzeyi, ekonomik durum algısı, yaşadığı yer, çocuk sayısı, gebeliğin planlı olması, doğum şekli, gebelikte emzirmeye yönelik bilgi alınması, doğum/doğum sonrası dönemde emzirmeye yönelik herhangi bir sorun yaşayıp/yaşamaması, bebeğini doğumdan sonra ne kadar süre sonra emzirdiği ve doğumdan sonra ilk bebeğine hangi besini verdiği durumuna göre MBFES-A puanlarında istatistiksel olarak anlamlı fark olduğu belirlenmiştir ($p < 0.05$). Bebeğin cinsiyeti ve hangi ayda olduğu ile emzirme memnuniyeti arasında ise anlamlı bir ilişki bulunamamıştır ($p > 0.05$). Annenin yaşı, çalışma durumu ve aile tipinin ise emzirme memnuniyetinin farklı boyutları üzerinde etkili olduğu belirlenmiştir ($p < 0.05$).

Sonuç: Araştırmadan elde edilen sonuçlara göre, annenin sosyodemografik özellikleri, doğum, bebek ve emzirmeye yönelik özelliklerinin anne emzirme memnuniyeti ve farklı boyutları üzerinde etkili olduğu belirlenmiştir. Bebeğin cinsiyeti ve bebeğin hangi ayda olduğunun ise annenin emzirme memnuniyeti üzerinde etkiliği olmadığı sonucuna ulaşılmıştır. Hemşireler tarafından annelerin emzirme deneyimine yönelik memnuniyetlerinin ve etkileyen faktörlerin değerlendirilmesi ve bireyselleştirilmiş emzirme danışmanlığının verilmesi önerilir.

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Anahtar Kelimeler: Emzirme, Anne sütü, Memnuniyet, Irak, Hemşire

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LIST OF ABBREVIATIONS

AOM	Acute otitis media
BC	Breast cancer
BM	Breast Milk
CDC	Centers for Disease Control and Prevention
CSF	Colony stimulating factor
EGF	Epidermal growth factor
EPA	Eicosapentaenoic acid
GH	Growth hormone
LRTI	Lower respiratory tract infection
MBFES-A	The Arabic version of the Maternal Breastfeeding Evaluation Scale
MBFES	Maternal Breastfeeding Evaluation Scale
MDGF	Mammary derived growth factor
MICS	Multiple Indicator Cluster Survey
NEC	Necrotizing enterocolitis
NGF	Nerve growth factor
UNICEF	United Nations Children's Foundation
WHO	World Health Organization

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1. INTRODUCTION

In order for the newborn to grow and develop healthily, adequate and balanced nutrition is required during infancy. The best form of nutrition for the development and growth of the newborn is breast milk (İnce *et al.* 2017). Breast milk is special for each newborn and its nutrients vary according to the needs of the newborn (Etki-Genç and Özkan 2020). The most economical, healthy and practical way to feed breast milk is breastfeeding (Kösegil 2022). Breastfeeding strengthens the bond between mother and baby. The United Nations International Children's Emergency Fund (UNICEF) and the World Health Organization (WHO) also recommend exclusive breastfeeding for the first six months and breastfeeding with supplementary foods until at least two years of age (UNICEF 2019; WHO 2020).

The first few months of an infant's existence are a crucial period for their overall health, as well as their development and protection. Breastfeeding is the healthiest and most natural way to feed an infant, and it also has a good impact on the child's development and overall health. Breast milk provides the right balance of nutrients for the newborn and contains many bioactive substances like immunoglobulins, hormones, oligosaccharides, and a variety of others. Breast milk also provides the ideal environment for the development of the infant's immune system (Wiciński *et al.* 2020).

Antibodies, cytokines, hormones, enzymes, and major proteins like lactoferrin and α -lactalbumin are just some of the things in human milk that do many different things (microbicidal, tumoricidal, anti-inflammatory, etc.) Breastfeeding is good for the baby's health, development, and protection against getting sick. Breastfeeding gives babies a lot of protection against infections like acute and long-term diarrhea. Both developed and developing countries see cases of neonatal septicemia, respiratory tract infections, acute and recurrent middle ear infections, and urinary tract infections (Sharma *et al.* 2015).

Despite the numerous benefits of breast milk for both mother and baby, initiation of breastfeeding, exclusive breastfeeding for the first six months and the duration of breastfeeding are still not at the desired level worldwide. The rate of exclusive breastfeeding for the first six months and the duration of breastfeeding are inadequate worldwide (Irmak, 2016). There are various factors that affect the successful initiation and maintenance of breastfeeding. (Çalık *et al.* 2017). These include sociocultural features, traditional approaches, education, urbanization, working life, indifference of health workers, family structure, the suspicion that body image will deteriorate with breastfeeding, cultural differences, negative attitudes towards breastfeeding and society's tendencies (Ahluwalia *et al.* 2000; Karaçam and Sağlık 2018; Nilgün 2012; Yeşilçiçek-Çalık *et al.* 2017).

For this reason, it is important to know the negative thoughts and experiences of mothers about breastfeeding in the early period and to maintain effective breastfeeding by creating an appropriate education plan in order to extend the period of exclusive breastfeeding up to six months. In the literature review, studies were found that investigated the breastfeeding self-efficacy (Piro and Ahmed, 2020) and the knowledge, attitudes and practices (Abdul Ameer, Al-Hadi, and Abdulla 2008; Alkayyim 2022), of mothers in Iraq. However, there was no research or study that evaluated satisfaction. For the aforementioned reasons, this study was conducted to evaluate mothers' satisfaction with the breastfeeding experience.

1.1. Purpose of the Study

This research aimed to evaluate mothers' satisfaction with their breastfeeding experience in Dhiqar, Iraq.

1.2. Importance of the Study

There are no studies evaluating maternal satisfaction with the breastfeeding experience in Iraq. In order to increase breastfeeding satisfaction and knowledge, the current situation in Iraq should be revealed. It is thought that the results of this study will be a source for planning breastfeeding services for Iraq, will reveal the

importance of establishing breastfeeding service and training units and of training health personnel trained in this field, and with the increase in the quality of service and training provided, mothers' breastfeeding satisfaction will increase and their behaviours will be positively affected.

1.3. Research questions

1. What are mothers' satisfaction with their breastfeeding experience?
2. What is the relationship between mothers' satisfaction towards breastfeeding experience and their sociodemographic characteristics?

1.4. Limitations

The study cannot be generalized as it only showed results for lactating women living in a particular area.

2. GENERAL INFORMATION

Breastfeeding is known to improve mother and baby health (Sankar *et al.* 2015), leading to lower healthcare costs due to reduced service utilization (Bartick *et al.* 2017; Pokhrel *et al.* 2015). So, according to global public health policy, nursing should be continued alongside solid foods for as long as mother and infant so want (WHO 2017).

Five diseases in infants and mothers are negatively impacted by the use of breast milk substitutes: gastrointestinal (GI) infection, lower respiratory tract infection (LRTI), and acute otitis media (AOM), necrotizing enterocolitis (NEC) in preterm infants, and breast cancer (BC) in mothers. Other conditions, such as cognitive outcomes, early years obesity, Sudden Infant Death Syndrome, and markers of longer-term cardiovascular disease, have been linked to the use of breast milk substitutes, but the available evidence does not permit a robust economic analysis (Renfrew *et al.* 2012). In this section, information about the breasts, breast milk and breastfeeding is given.

2.1. Anatomy of the Breast

The breasts are two hemispherical organs with secretory properties located on the anterior chest wall; they are physiologically and anatomically affected by some variables starting from the fifth and sixth weeks of the intrauterine period until menopause. The breasts are located on the pectoralis major muscle laterally from the lateral edge of the sternum to the middle armpit line and from top to bottom in the second and sixth intercostal space. The location and shape of the breast may vary according to the person and races, and it also varies in terms of shape and size in certain periods in the same person. The average weight of a breast can be 400-500 g during lactation, while the average weight of a breast outside the lactation period is approximately 150-200 g (Hasanoğlu *et al.* 2020). The main external structures of the breast are the nipple, areola and Montgomery tubercles. The pigmented area surrounding the nipple at the apex of the breast is called the areola and contains

Montgomery glands. In Montgomery's glands, there are Montgomery tubercles, which are in the form of small bubbles formed by the duct openings in these glands (Figure 2.1). These tubercles secrete a slippery fluid through the Montgomery glands, keeping the nipples moist and protecting them from infectious agents. In addition, Montgomery tubercles help the baby to recognize the breast with the odor they secrete. Each breast contains milk glands called *glandulae mammaria*. Secretion of these glands in the breasts is controlled by hormones. Each milk gland has approximately 15-20 mammary lobes. Each lobe contains 20-40 alveoli and lobules containing lactocytes which are milk producing cells, and each lobule contains 10-100 alveoli. There are myoepithelial cells around all alveoli and these cells contract in response to oxytocin hormone released from the posterior pituitary. Myoepithelial cells play a role in the discharge of milk produced in the alveoli during lactation into the milk ducts called *ducti lactiferi*, opening to the nipple. The milk produced from here is discharged through a hole in the nipple called *ostium papillare* (Ellis and Mahadevan 2013).

2.2. Physiology of lactation

After birth, the period starting with the milk coming from the breast tissue is called lactation. Lactation is a period in which physiological changes occur in the breast tissue of the mother, growth and development are provided by the sucking of the baby, and interaction between the mother and the baby is established. Lactation occurs in three stages as a result of the combination of hormonal, neurological and psychological responses (Lawrence 2022).

Mammogenesis

This starts in the first trimester of pregnancy. It is the growth of the mammary glands. Thanks to some hormones secreted during pregnancy, breast tissue is prepared. After the fifth month of pregnancy, the acini cells in the alveoli begin secretory activity and as a result, breast milk begins to be secreted. Close to labor, the blood supply to the mammary gland of the expectant mother is doubled. The production of milk from epithelial cells in the alveoli by prolactin is called the milk production reflex (Bilgen *et al.* 2018).

Lactogenesis

The secretory phase begins with changes in the epithelial cells of the breast tissue. The lactogenesis phase occurs in two successive stages. Lactogenesis 1 continues from the fourth month of pregnancy until the second or third postnatal day. Colostrum is formed in this phase. Lactogenesis 2 continues between postnatal day 3 and 8. In this process, milk secretion occurs with a decrease in the mother's estrogen and progesterone hormones and an increase in prolactin hormone (Bilgen *et al.* 2018).

Galactopoiesis

In this phase, mature milk production takes place from the tenth day after birth. Milk synthesis passes from the endocrine system to the control of the autocrine system. Prolactin is at the highest level in the first ten days after birth and decreases gradually in time. It remains at basal level during lactation. Large secretory bursts of prolactin occur during each breastfeeding. Episodic secretion of prolactin ends 22 days after the mother stops breastfeeding completely, but if breastfeeding continues and milk discharge from the breast is provided effectively, new milk synthesis continues for years without interruption (Riordan and Wambach 2010).

Involution

This is the process covering approximately forty days after the mother's last breastfeeding. It is characterized by a decrease in breast milk and cessation of lactation (Turkish Neonatology Association 2018).

Realisation of Lactation

When the baby starts to suck the breast, the nipples and areola are stimulated and afferent messages are sent to the central nervous system and pituitary gland. In response to the messages sent, prolactin hormone is synthesized by the anterior part of the pituitary gland and oxytocin hormone is synthesized by the posterior part. Under the influence of these two hormones, the Milk Production Reflex and the Milk Stroke Reflex occur (Figure 2.2). Prolactin is a polypeptide hormone which is structurally similar to growth hormone (GH) and which is produced and secreted in

the anterior pituitary and provides milk production. Prolactin provides glandular ductal development and increase of epithelial cells in breast tissue and also induces milk protein synthesis. Although many hormones work together for the initiation of breastfeeding, the most hormone which has the greatest effect is prolactin (Lawrence and Lawrence 2021). There are some hormones and neurotransmitters that affect the secretion of prolactin. Stimulators include thyrotropin-releasing hormone, vasoactive intestinal peptide, estrogen, insulin, epidermal growth factor and relaxin, whereas dopamine is an inhibitor (Brownell *et al.* 2012). Although estrogen both increases prolactin secretion and functions like prolactin during differentiation in breast tissue before birth, it suppresses milk synthesis of prolactin when combined with progesterone. During labor, estrogen progesterone levels decrease with the separation of the placenta, and the suppressive effect on milk production disappears. After birth, the hormone prolactin decreases from the high levels of late pregnancy to a basal level with the decrease in estrogen levels. After a few months, the prolactin level returns to pre-pregnancy levels, even if the mother continues breastfeeding (Pang and Hartmann 2007).

However, breastfeeding is the strongest physiological stimulus for the release of prolactin, so that each breastfeeding is accompanied by an abundant release of prolactin in addition to the basal level. The intermittent release of prolactin sends stimulatory signals to the breast to produce milk. These stimuli continue as long as the mother continues breastfeeding, but if she stops breastfeeding, the stimuli cease after a few days. In addition, the mental and physical state of the mother may affect prolactin synthesis. Stress and fatigue may cause an increase in the levels of dopamine or norepinephrine or both, which may lead to inhibition of prolactin synthesis and thus a decrease in milk production (Widmaier *et al.* 2017).

Milk production reflex

Milk production from epithelial cells in the alveoli with the effect of prolactin hormone secreted from the anterior lobe of the pituitary is called the milk production reflex. Oxytocin hormone is synthesized in the supraoptic and paraventricular nuclei in the hypothalamus and stored in the posterior pituitary, and its function is to

provide milk secretion. Oxytocin receptors in the breast tissue increase close to birth and when the baby starts to suck, the posterior pituitary is stimulated and oxytocin is secreted. Oxytocin stimulates myoepithelial cells in the breast and enables milk to be discharged from the alveoli to the milk ducts and sinuses (Cadwell *et al.* 2019).

Milk stroke reflex

The nerves in the areola and nipple are stimulated by the sucking of the baby and the stimuli reach the hypothalamus via afferent nerves in the spinal cord. Myoepithelial cells surrounding the alveoli contract with the release of oxytocin from the posterior pituitary gland. The reflex that results in the ejection of milk from the alveoli into the duct system and lactiferous sinuses and then into the nipple is called the milk stroke reflex. The milk stroke reflex is not conditional at first and is realized by physical stimulation. However, with the continuation of sucking, the reflex becomes conditional and can occur when the baby is thought of, seen or heard crying. Sexual desire and orgasm also stimulate the hypothalamus, causing oxytocin to be released and producing the milk let-down reflex. Negative emotions such as fear, anxiety, pain and fatigue inhibit the milk ejection reflex (Cadwell *et al.* 2019; Truchet and Honvo-Houéto 2017).

2.3. Content of Breast Milk

The content of breast milk varies according to the nutritional status of the mother, the stage of lactation, the beginning or end of the breastfeeding period and the age of the baby. The content changes if the milk sample is taken at the beginning or at the end of breastfeeding or if it is taken immediately after birth or on day 3. The content of the milk of a mother with a premature baby is also different from the milk of a mother with a term baby. Each mother produces milk in accordance with the physiological needs of her baby. For example, the milk of mothers of premature babies contains higher levels of long-chain, polyunsaturated fatty acids. Similarly, the fat ratio, which is low at the beginning of breastfeeding, increases towards the end of breastfeeding. The characteristics of breast milk vary from colostrum to mature milk after birth (Hundshammer and Minge 2020).

Colostrum: Colostrum is the milk secreted immediately after birth and appears yellow in color due to the beta-carotene it contains. Colostrum is secreted for 2-3 days after birth. Its composition is of great importance in terms of the requirements of the newborn in the first days. Colostrum contributes to the formation of normal intestinal flora and has a laxative and proteolytic effect that facilitates meconium expulsion, thus reducing the risk of physiological jaundice. The gastrointestinal systems of babies who receive the first breast milk as soon as they are born are completely covered with immunoglobulins. A mucosal layer is formed and the baby is protected against pathogenic microorganisms from the external environment. Most of the protein content of colostrum is globulins (Bryant and Thistle 2021).

The secretory IgA (sIgA) level in colostrum is as high as 50 mg/ml. However, this rate decreases to 5.0- 7.5 mg/ml after a few weeks. Complement, macrophage, lymphocyte, lactoferrin, lactoperoxidase, lysozyme components and antibodies contained in colostrum protect the newborn against infections. Therefore, colostrum constitutes the first stage of immunization of the baby. In the first days after birth, most of the cells in the colostrum are neutrophils and in the following days macrophages. Both types of cells protect the baby from infections by phagocytosis and interferon synthesis. Half of the lymphocytes in the colostrum are T-lymphocytes. B-lymphocytes form IgA. Therefore, colostrum is also described as the first vaccine of the baby. Colostrum, which is very rich in immunoglobulins (IgA, IgM), should be given to the baby without waiting. Colostrum is replaced by transition milk on the second to fourth days after birth (Taşkın 2005).

Transition Milk: Transition milk is the milk secreted in the two-week period starting from the fifth day of lactation and following colostrum. The level of elements in it is generally between the composition of colostrum and mature milk. Total protein and immunoglobulin ratios decrease compared to colostrum. It contains higher levels of fat, lactose and vitamins and its calorific value starts to increase (Neyzi 2004).

Mature Milk: Towards the fourth week of lactation, transitional milk is replaced by mature milk. 10% of this milk contains carbohydrates, proteins and fats necessary for energy and growth. The rest is water. Mature milk can meet the nutritional

requirements of the baby for the first six months without the need for any additional food. The content of mature milk varies according to the time of breastfeeding (Taşkın 2005).

Foremilk: In a breastfeeding, the first milk that comes from the breast is foremilk. Foremilk contains mostly water, vitamins and protein. Since foremilk is produced in large amounts, the baby meets all the water it needs from foremilk (Littleton and Engeberston 2012).

Aftermilk: The milk secreted from the breast at the end of a breastfeeding is called aftermilk. The last milk contains more fat than the foremilk. This fat meets the energy requirement of the baby. In addition, the high fat content in the aftermilk causes a feeling of saturation in the baby, allowing the baby to leave the breast, and protects the baby against obesity (Littleton and Engeberston 2012).

Proteins

Breast milk, which contains more than 400 different proteins, fulfils various functions; it has antimicrobial and immunomodulatory activities and also stimulates the absorption of nutrients. Proteins found in milk can be divided into three: casein, whey proteins and mucin proteins. Whey proteins and casein are classified according to their solubility. Caseins are found in suspended casein micelles. Mucins are found in the milk fat globule membrane. Proteins found in significant amounts in the whey protein fraction are α -lactalbumin, lactoferrin, IgS, serum albumin and lysozyme (Andreas *et al.* 2015). The protein content of breast milk is 1.4-1.6 g/100 ml in early lactation, 0.8-1 g/100 ml at 3-4 months and 0.7-0.8 g/100 ml at six months (Tekin 2019). Casein and whey amounts vary. While whey concentrations are very high in early lactation, casein is very low. In the later stages of lactation, casein content increases and whey content decreases. On average, the frequently stated ratio is 70/30, but this ratio varies from 80/20 in early lactation to 50/50 in late lactation (Lönnerdal 2003).

The protein content of Breast Milk (BM) is lower than cow's milk, but its biological usefulness is much higher and it meets the protein requirement of the baby for the

first six months. While 60% of the protein content of BM is whey protein, it is around 18% in cow's milk. 10-25% of the total proteins in breast milk is lactoferrin and this protein is iron binding. Lactoferrin protects infants against diarrhea, neonatal sepsis and necrotising enterocolitis, and increases the bioavailability of iron in breast milk (Manzoni *et al.* 2018; Ochoa *et al.* 2013; Pammi and Suresh 2017).

Growth factors in protein structure are also present in breast milk and they act in the respiratory system and gastrointestinal system. Some of these are epidermal growth factor (EGF), nerve growth factor (NGF), insulin-like growth factor (ILGF-I), mammary derived growth factor (MDGF), colony stimulating factor (CSF), taurine, ethanolamine and interferon (Doğan, 2019). Taurine is effective in growth, ensures the integrity of the cell membrane and prevents retinal damage (Dror and Allen, 2018).

Lipids

In addition to being the main energy source in breast milk, fats also have functional properties. Breast milk fats are important in providing essential fatty acids, fat-soluble lipids and bioactivities of some components. Approximately 98% of fats are composed of triglycerides. Most of the remaining 2% consists of diacylglycerols, monoacylglycerols, free fatty acids, phospholipids and cholesterol. The total fat content of breast milk is 2.4-5.9 g/100 ml on average. This amount is 3.7-9.1 g/100 kcal. This indicates that approximately 50% of the energy comes from fats (Tekin 2019). Apart from being a source of energy, lipids are also effective in the development of the nervous system. High levels of unsaturated fatty acids and milk lipase make digestion easy and fast. Long-chain fatty acids in breast milk are very important for brain and eye development. It is thought that high amounts of cholesterol stimulate the development of the lipolytic enzyme system and prevent the accumulation of lipids that pose a risk for atherosclerosis in adulthood (Bilgen *et al.* 2018; Eryiğit 2019) In addition, the fact that breast milk is rich in polyunsaturated fatty acids is also effective in the development of the central nervous system, myelination and normal retinal functions. Breast milk is sufficient for the baby in terms of essential fatty acids such as EPA (eicosapentaenoic acid), DHA (docosahexaenoic acid), LA (linoleic acid) and LNA (linolenic acid). The amount of

DHA in breast milk constitutes 0.1-0.3% of the total amount of fatty acids and 1.5-2.5% of the total amount of omega 3 fatty acids. The ratio of omega 6/omega3 fatty acids is important in determining the requirement because this ratio is the best indicator of tissue DHA level. The n-6/n-3 ratio of breast milk varies between 5.8 and 17.8. The fatty acid composition and lipase enzyme it contains are among the factors that facilitate fat absorption in the infant (Kim and Yi 2020). In a study examining the differences in breast milk fatty acid composition between overweight and normal weight women and the effect of fatty acid composition on cholesterol concentrations and growth in 13-month-old children, the breast milk of overweight women had higher amounts of saturated fatty acids and lower amounts of n-3 fatty acids and unsaturated fatty acid content than breast milk of normal weight women. Weight gain of children was found to be associated with saturated fatty acids and the unsaturated/saturated fatty acid ratio in milk, but the fatty acid composition of milk was not found to be associated with cholesterol concentrations in 13-month-old children (Mäkelä *et al.* 2013). In another study on breast milk fat content, breast milk from obese mothers had a higher omega-6/omega-3 fatty acid ratio and lower DHA, EPA and lutein concentrations compared to that of normal weight mothers. Breast milk saturated fatty acid and monounsaturated fatty acid concentrations were positively associated with maternal dietary inflammation (Panagos *et al.* 2016).

Carbohydrates

Breast milk contains a wide variety of complex carbohydrates. Lactose is the main carbohydrate in breast milk. It is a disaccharide composed of galactose and glucose. The lactose level in breast milk is higher than in cow's milk. The average lactose content of mature milk is 6.7 - 7.8 g/100 mL. The lactose content of breast milk is the least varying carbohydrate among macronutrients. Galactolipids play an important role in brain development, facilitate Ca absorption and contribute to bone mineralization. The indigestible part of lactose is fermented and contributes to the development of *Lactobacillus bifidus* in the intestines, and prevents the growth of pathogens (Andreas *et al.* 2015). One of the bioactive factors that make up an important part of breast milk carbohydrates is oligosaccharides. They cannot be digested by the baby, but they nourish the gastrointestinal microbiota and provide the proliferation of beneficial organisms. In short, they are prebiotic substances. Breast

milk oligosaccharides and their protein conjugates prevent pathogens from adhering to the intestinal wall. They also form the intestinal flora with their prebiotic effect. It was believed for many years that breast milk is sterile. However, it is now known that it contains a large number of microorganisms and bifidobacteria. AS develops the intestinal flora to consist of bifidobacteria and lactobacilli with the probiotic bacteria and oligosaccharides it contains. This natural flora supports the humeral immune response for the protection of intestinal epithelial integrity, removal of pathogens and formation of sIgA activity. It permanently modulates the infant's immune system so that there is less inflammation, atopy and autoimmune disease. In this way, AS affects the immune system at the beginning of life (Bilgen *et al.* 2018).

Vitamins

In addition to macronutrients, breast milk also contains essential micronutrients such as vitamins. Breast milk contains vitamins A, B1 (thiamine), B2 (riboflavin), B6 (pyridoxine), B9 (folic acid), B12 (cobalamin), C and E. Since the content of these vitamins in breast milk may vary depending on the mother's diet, the mother's diet significantly affects the vitamins in breast milk. The B vitamins in breast milk play a fundamental role, especially in supporting the differentiation, repair and regulation of neurons and the synthesis of different neurotransmitters (Dror and Allen, 2018). During lactation, the concentration of some water-soluble vitamins such as vitamin B1 and vitamins B6 and B7 increases, but the concentration of vitamin B2 remains constant. The concentration of vitamins A and E is higher in colostrum than in mature milk. Vitamins D and K are found in low amounts in breast milk. Vitamin K is administered parenterally or orally to prevent neonatal hemorrhagic disease because the intestinal flora of the newborn is not fully developed. In order to meet the vitamin D requirement, 400 IU vitamin D supplementation per day starting from the first 15 days continues until the end of the first year of life (Grilo *et al.* 2016)

Minerals

The mineral composition of breast milk does not vary greatly with the mother's diet. This regulation is thought to be due to the utilization of mineral stores in the mother. For example, when calcium and phosphorus are restricted in the maternal diet, the concentration of these minerals in milk does not change, with mobilization from

bones. The potassium content of breast milk is higher than that of sodium and is comparable with intracellular fluids. The low sodium component is compatible with the incompletely developed renal functions of the newborn. Although the calcium content of breast milk is lower than in cow's milk, the calcium content is twice as high as the phosphorus content and its absorption is higher. This feature is also suitable for bone mineralization. The high phosphorus/calcium ratio in cow's milk is the cause of late hypocalcaemia in newborns. Although the amount of iron in breast milk (0.2-0.8 mg/dl) is lower than the amount of iron in cow's milk, its usefulness is higher because iron in breast milk is absorbed better than iron in cow's milk. While 50-60% of the iron in breast milk is absorbed, this rate is 5-10% in cow's milk and 3-4% in formula foods. Therefore, breastfed babies do not need iron intake for the first six months. The adequacy of fluorine in breast milk is controversial. In regions where fluorine content in water sources is less than 0.3 ppm, fluorine support should be provided to the baby starting from the sixth month (Marques *et al.* 2014; Segura *et al.* 2016).

2.4.Changes in Breast Milk Structure

During lactation, breast milk is divided into three different types due to the change in the proportions of its content. These are colostrum secreted in the first 4-5 days, transitional milk secreted in the following 10 days, and mature milk produced until the end of breastfeeding in the following period (USDA 2021).

2.5. Benefits of Breast Milk

The first two years of life are the period of the fastest growth and development. Proper nutrition in this period has important effects that are reflected at later ages. Breast milk is a nutrient that has the characteristics to fully support the development of the newborn and is superior to all artificial nutrients in terms of nutritional value and the substances it contains which are protective against infections. In the literature, it is stated that breast milk provides important benefits to the baby and the mother (Lyons *et al.* 2020).

Benefits of Breast Milk for the Baby

The benefits of breast milk for the baby are as follows:

- It contains factors that regulate biological functions and ensure the growth of organs and systems. It improves and strengthens the baby's immune system and protects the baby against sepsis, hemophilia, influenza, bacteremia, meningitis, respiratory, urinary and gastrointestinal infections and allergic diseases (Young 2017).
- Protection is more pronounced in severe respiratory diseases such as bronchitis, bronchiolitis and pneumonia.
- It is not allergenic because it does not contain beta lactalbumin. In addition, the sIgA it contains protects the baby from food allergies.
- Depending on the breastfeeding position, breastfed babies have less acute otitis media than bottle-fed babies.
- It protects the baby from obesity because the amount of milk is adjusted according to the baby's needs. Since the development of lipolytic enzyme systems is activated earlier in babies fed with AS in the first months, it protects the baby against hyperlipidaemia and atherosclerosis that may develop in advanced ages. Cytokines, beta-casomorphins and prolactin found in breast milk are thought to be protective against diseases such as Crohn's disease, type 1 diabetes mellitus and lymphoma (Young 2017).
- Human milk contains antibodies and immunological cells that give children maternally-derived adaptive and innate immunity as their naive immune systems grow (Andreas *et al.* 2015).
- Human milk contains several different classes of other immunomodulatory and cell-signaling peptides. A variety of both pro and anti-inflammatory cytokines have been detected in human milk (Chatterton *et al.* 2013).
- Breastfeeding confers substantial protection against pediatric leukemia (Ip *et al.* 2007).

Benefits of Breast Milk for the Mother

Breastfeeding has a very special biological and emotional effect on maternal health as well as on infant health (Çavuşoğlu 2019; Krol and Grossmann 2018). The short and long-term benefits of breastfeeding for maternal health can be listed as follows:

Breastfeeding provides a psychological relationship between mother and baby, thus positively affecting the psychological development of the baby and satisfying the mother's sense of motherhood (Krol and Grossmann 2018).

The oxytocin hormone secreted during breastfeeding increases uterine contractions in the mother, accelerating uterine involution and reducing postpartum bleeding (Del Ciampo and Del Ciampo 2018; Etki-Genç and Özkan 2020).

During milk production in mothers, there is an additional energy expenditure, which facilitates returning to their pre-pregnancy weight (Etki-Genç and Özkan 2020).

Breastfeeding reduces the risk of breast cancer, type 2 diabetes, ovarian cancer, anemia, cardiovascular diseases, postpartum depression, rheumatoid arthritis, and postmenopausal osteoporosis in mothers (Del Ciampo and Del Ciampo, 2018; Etki-Genç and Özkan 2020; Ministry of Health, 2018). Breast milk is always ready at the right temperature, and is economical and practical. It eliminates the cost of formula while providing time for the mother to rest (Etki-Genç and Özkan 2020).

2.6. Breastfeeding

The process of giving breast milk to the baby, i.e. breastfeeding, is as important as reproduction. The breastfeeding experience is a process that should start at the earliest for both mother and baby. Breastfeeding is a form of nutrition that has many positive effects on mother-infant health and emotional closeness. In developing countries, it is emphasized that initiatives to increase exclusive breastfeeding in the first six months reduce all under-five mortality by 13%, and it is the most effective way to reduce child mortality. The World Health Organization (WHO) and the

United Nations Children's Fund (UNICEF) recommend giving AS immediately after birth and feeding only AS for the first six months, switching to additional foods at the end of the sixth month and continuing breastfeeding until the age of two years. It is stated that the lives of 1.5 million children under the age of five can be saved every year with adequate and timely transition to supplementary foods (Cantürk 2019).

According to the data, only four out of ten infants worldwide are exclusively breastfed. Only 41% of infants are exclusively breastfed during the first six months following birth (UNICEF 2019). According to the Centers for Disease Control and Prevention (CDC) 2018 Breastfeeding Report, in the United States, the rate of infants who receive breast milk during the first six months is 57.6%, and the rate of infants exclusively breastfed is 24.9% (CDC 2018). A study conducted by Hussain et al. in Bangladesh found that only 36% of mothers exclusively breastfed their infants during the first six months.

According to data from the Iraq Multiple Indicator Cluster Survey 2018 published by UNICEF, nine out of ten children are breastfed at some point in their early lives. However, only 25.8% of children are exclusively breastfed during the first six months of life. This rate is much lower than the Middle East and North Africa regional average of 33% (UNICEF 2021).

2.7. Breastfeeding Frequency

It is important to give breast milk to term infants within the first half hour following birth. During the first 4-6 weeks after birth, the baby should be breastfed 8-12 times in 24 hours (Ruth, Lawrence, and Robert, 2011). Some babies can take enough food to be satisfied for four hours and need to suckle less frequently, while some babies need to suckle more frequently, every 2-3 hours. The World Health Organization recommends that babies should be breastfed when they show signs of hunger (Erol 2020).

2.8. Factors Affecting Breastfeeding

As in many countries, both mothers and infants may experience problems in initiating and maintaining breastfeeding in this country. In order to ensure effective and adequate breastfeeding, the factors affecting breastfeeding should be known. Factors affecting breastfeeding can be grouped as infant factors, maternal factors and environmental and social factors (Arslan 2011).

Infant Factors

The premature birth of the baby, birth weight, health status, Apgar score, lack or absence of bowel movements, presence of congenital metabolic disorders (galactosemia, phenylketonuria), vomiting, lack of development of the sucking and swallowing reflex, congenital malformations that prevent sucking (hare lip, cleft palate), cerebral defects, multiple pregnancies or sleepiness of the baby can negatively affect breastfeeding. In addition, the gender of the baby, restlessness and the dose of anesthesia administered during delivery can be counted among other factors related to the baby that affect breastfeeding (Cantürk 2019).

Factors Belonging to the Mother

It is important to determine the factors affecting breastfeeding behavior in order to equip mothers with information appropriate to their special needs about breast milk and breastfeeding, to provide effective support and to improve breastfeeding behavior. Some of these factors are as follows (Mizrak Sahin *et al.* 2019; Ministry of Health 2018):

- Age of the mother
- Mother's education level
- Income level
- Family structure
- Desire for pregnancy and experiencing health problems during pregnancy
- Mother's previous experiences with breastfeeding
- Employment of the mother

- Employment of the mother
- The mother being sick (diabetes, preeclampsia, HIV infection, herpes, hepatitis, etc.) and using some medications for her illness.
- The mother's smoking negatively affects milk production.

Environmental and Social Factors

Society's attitude towards breastfeeding, breastfeeding norms, cultural changes, popular movements such as feminism, the mother's understanding of freedom, hospital policies on breastfeeding, national health policies, level of knowledge and interest of health team members, enactment of laws on milk substitutes and mass media can be considered among environmental and social factors (Arslan 2011).

Breast Problems

If the nipple protrudes when the areola circumference is squeezed with the hand, the nipple is considered flat or normal. If the nipple is pulled in, it is collapsed. Collapsed nipple will make it difficult for the baby to grasp the breast and interrupt the breastfeeding period. Therefore, it should be detected and corrected in the prenatal period. In the postnatal period, the nipple can be brought out with nipple exercises and nipple protectors (Kırıcı 2015).

One of the common problems encountered in breastfeeding mothers is nipple pain. There may be pain in the breast in the first few days or first weeks of breastfeeding. The pain may be mild or severe throughout breastfeeding or during breaks. There are various problems that cause breast pain. The most common ones are breast fullness, mastitis and breast abscess. In addition, an improperly selected bra can cause sharp, severe pain and bruising in the breast. Bending over the baby and the baby's constant tugging on the mother's breast tissue cause the pain to increase as a result (Çullu 2008).

Mastitis is a common condition in breastfeeding women; estimates from prospective studies range from 3% to 20% depending on the definition and length of postnatal follow-up. Most cases occur in the first six weeks, but mastitis can occur at any time

during lactation. The general clinical definition of mastitis is a tender, warm, swollen, wedge-shaped breast area associated with a temperature of 38.5 C (101.3 F) or higher, chills, flu-like pain and systemic disease. However, mastitis literally means and is defined here as inflammation of the breast, which may or may not involve a bacterial infection. Redness, pain and heat may also be present when an area of the breast is engorged, but not necessarily an infection (Amir and Academy of Breastfeeding Medicine Protocol Committee 2014).

A blocked milk duct problem occurs when the breast cannot be emptied well. It is important to ensure milk flow by frequent breastfeeding, resting the mother, applying warm dressing and massage between breastfeeding. Breast engorgement is usually common and often affects both sides (Berens *et al.* 2016). In this case, it becomes difficult for the baby to settle on the breast and take the breast into the mouth. Expressing the breast before breastfeeding and softening the breast by applying warm dressing makes it easier for the baby to hold the breast. Frequent breastfeeding will prevent milk from accumulating in the breast (Witt *et al.* 2016).

The most common reason why mothers stop breastfeeding early or start supplementary feeding while breastfeeding is the thought that their milk is insufficient. However, mothers can produce enough milk for their babies regardless of breast size. The small amount of colostrum produced in the first days may increase mothers' concerns about this issue. It should be explained to the mother that the amount of colostrum produced is suitable for the stomach capacity of a newborn baby and is sufficient to meet the fluid the baby needs. The stomach capacity of a newborn baby is approximately 5-7 ml (a marble) on the first day, 20-27 ml (a walnut) on the third day, 45-60 ml (a ping-pong ball) in the first week, and 80-150 ml (an egg) in the first month. For this reason, breast milk, which is secreted less after birth, will be shaped and increased over time according to the needs and growth of the baby (Caner 2016).

2.9.Types of Breastfeeding

The use of the correct breastfeeding technique is very important for successful breastfeeding. Healthy babies are born with search and sucking reflexes. These reflexes are especially active in the reactive period immediately after birth. The reactive period is the first 15-30 minutes immediately after birth. Therefore, if it is suitable for the mother and the baby, it is very important that the newborn is held to the mother's breast during the reactive period and breastfeeding is provided. After this period, the newborn goes into the inactive period (30 minutes-2 hours after birth) and it is very difficult to achieve breastfeeding in this period. The second reactive period occurs between 2-6 hours after birth and in this period, the baby is awake, responds effectively to stimuli and breastfeeding is performed successfully (Riordan and Wambach 2010). For breastfeeding to occur correctly, the position of the mother and the baby is very important as well as the presence of some reflexes in the baby.

The mother should be in a suitable position for the mother to relax. The mother's back should be supported with a pillow, and her shoulders should be relaxed. The load on the mother's hand should be reduced by using support under the arms (breastfeeding pillow, etc.) She should hold the baby with one hand and support the breast with the other hand. While supporting the breast, four fingers should be held at the bottom and one finger at the top (Riordan and Wambach 2010).

The newborn should be supported and given an appropriate position. Whichever position the baby is in, his/her face and torso should be facing the mother, and the whole body of the baby should be supported. The search reflex should be stimulated and it should be ensured that the mouth opens fully and grasps the areola. When the baby grasps the breast correctly, the lower lip curls outwards and the cheeks swell. When viewed from the outside, the lips should surround the areola. More of the areola should be seen above the upper lip. At the beginning of breastfeeding, the mother may feel pain in the nipple. However, the pain should not persist throughout breastfeeding; if it does, this is an indication that the baby is not latching on to the breast correctly. Placing the baby on the breast incorrectly will negatively affect effective breastfeeding (Littleton and Engeberston 2012).

2.10. Breastfeeding Satisfaction

Women's breastfeeding satisfaction was initially defined as the result of fulfilling personal breastfeeding objectives, expectations and needs in addition to experiencing pleasure from breastfeeding (Leff *et al.*, 1994). A higher rate of exclusive breastfeeding is associated with increased breastfeeding satisfaction (Bærug *et al.*, 2016). De Senna *et al.* (2020) and Ericson *et al.* (2021) found that postpartum breastfeeding problems were associated with decreased breastfeeding satisfaction scores. In addition, lower breastfeeding satisfaction scores were associated with a perception of insufficient milk supply. In recent studies conducted in Brazil, greater breastfeeding satisfaction was associated with fewer postpartum depression symptoms, a prolonged intention to breastfeed, the fathers' support, and the absence of feeding difficulties (Avilla *et al.* 2020; de Senna *et al.* 2020).

2.11. The Role of Nurses in Breastfeeding

It is extremely important for mothers to have knowledge about breastfeeding in order to breastfeed their babies adequately and well (Ingram 2006; Gibson-Davis and Brooks-Gunn 2006). Studies have shown that breastfeeding education during pregnancy significantly affects the initiation, satisfaction, rate and duration of breastfeeding (Awaliyah, Rachmawati and Rahmah 2019; Betrini *et al.* 2003; Forster *et al.* 2003; Noble *et al.* 2003). Educating mothers about breastfeeding and improving their knowledge significantly increases exclusive breastfeeding in the first six months.

Taking some preventive measures during pregnancy prevents breast problems such as nipple deformities, nipple cracks, pain and infection that may occur during the lactation period, thus enabling the baby to suck the breast and benefit from breast milk at the desired level. For this reason, individual and group trainings on breastfeeding should be provided within prenatal care services, and conditions that may affect breastfeeding in the mother should be identified and eliminated in advance. However, considering both the rate of use of antenatal care services and the quality of the services provided in Iraq, it is seen that breastfeeding behavior is not

sufficiently supported (WHO 2020). Therefore, an important place where women can be supported about breastfeeding is the postnatal clinics where they are admitted after delivery.

Teaching the importance and benefits of breastfeeding and correct breastfeeding techniques to mothers in postnatal clinics is of great importance both in terms of increasing breastfeeding rates and preventing breast problems that may develop in mothers due to incorrect breastfeeding techniques. The nurses working in postnatal clinics should give training to mothers about the importance of breastfeeding, all questions and concerns of the mother about breastfeeding should be answered and the mother's comfort should be ensured, mothers should be supported to breastfeed their babies within the first half hour after birth and not to give any other supplementary food before breastmilk, mothers should be informed about breastfeeding positions and correct breastfeeding technique and correct breastfeeding behavior should be gained (Ambike *et al.* 2017). Aluř Tokat and Okumuř (2013) stated in a study that breastfeeding education increases breastfeeding self-efficacy and success. Didiřen *et al.* (2021) also mentioned that breastfeeding education and support provided by competent nurses starting from before childbirth have a significant role in infant well-being.

Starting from the prenatal period, informing and supporting mothers about breastfeeding in the hospital and through home visits in the postnatal period can increase breastfeeding behavior to the desired level (Duman 2009). With the correct breastfeeding knowledge and behaviors of mothers, health problems and mortality rates that may develop in infants and children related to inadequate breast milk intake will decrease.

3. MATERIALS AND METHOD

3.1. Study Design

Our research was designed as a cross-sectional and descriptive type with the aim of determining the satisfaction of breastfeeding mothers about breastfeeding in Dhiqar, Iraq.

3.2. Population and Sample of the Research

The universe of this descriptive study consisted of mothers who had babies aged 1-3 months and also breastfeeding experience, and who visited the Iraqi Dhiqar Hospital (Shatrah General Hospital, Nasiriyah Training Hospital and Bint Al-Huda Training Hospital) between November 2022 and February 2023.

The power of the study was calculated using the G. Power-3.1.9.2 program. As a result of the analysis conducted on 199 individuals at the $\alpha=0.05$ level, the effect size was found to be 1.4180, and the power of the study, calculated post-hoc, was determined to be 1.00. The minimum required power value for the post hoc analysis was 0.67. In this case, the achieved power is acceptable, and the sample size was sufficient.

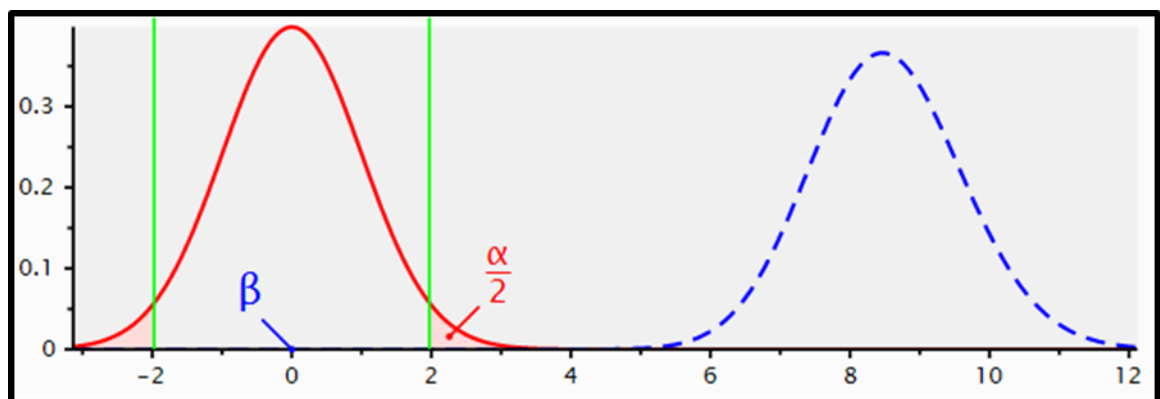


Figure 3.1 G- power analysis

Research Admission Criteria

- Being a mother who speaks and reads Arabic,
- Having a child aged 1-3 months and having breastfeeding experience,
- Not having any problems/diseases that prevent understanding of data collection tools,
- Giving consent to participate in the study.

Research Exclusion Criteria

- Stopping the study by not filling out the questionnaires or scales.

3.3.Data Collection Tools and Data Collection

The questionnaires of this study are a Mother Information Form and the Arabic version of the Mother Breastfeeding Evaluation Scale (MBFES-A).

- **Mother Information Form**

The mother information form was prepared by the researcher through a literature review (Alus-Tokat *et al.*, 2015; Usmanova, 2022). The personal data collection form consists of 16 questions that include demographic characteristics of the mother and baby (age, baby's gender, etc.), birth-related information (planned pregnancy, smoking during pregnancy, method of delivery, etc.), and breastfeeding characteristics (baby's first feeding time, level of knowledge regarding exclusive breastfeeding, etc.).

The Arabic version of the Maternal Breastfeeding Evaluation Scale (MBFES-A):

The Maternal Breastfeeding Rating Scale is a five-point Likert-type 30-item tool developed by Leff *et al.* in 1994 to determine the feelings and thoughts of mothers about the breastfeeding experience in the postpartum period. The original scale includes three sub-dimensions and a total of 30 items. These sub-dimensions are the

Maternal Enjoyment/Role Attainment Sub-Dimension, the Baby Satisfaction/Growth Sub-Dimension, and the Lifestyle/Body Image Sub-Dimension. Since breastfeeding experience and thoughts will be evaluated by the mother's self-report, the time to apply the scale should be one month after the start of breastfeeding at the earliest, or in the second to fourth month of breastfeeding. The Arabic version of the scale was developed in Lebanon by Nabulsi *et al.* (2021). The Cronbach's alpha reliability coefficient was found to be 0.87. As a result of factor analysis, four items with factor loadings below 0.4 were removed, and 26 items and three dimensions were obtained, as shown in Appendix 1 and Appendix 2. The reliability coefficients of the sub-dimensions of the scale were 0.88 for Infant Satisfaction/Growth Sub-Dimension that started with the item Baby loved to nurse and ended with the item Baby gained weight really well with breast milk, 0.87 for the Maternal Enjoyment/role attainment Sub-Dimension which started with Breastfeeding made me feel a more confident mother and ended with It was important to me to be able to nurse, and 0.68 for Lifestyle/Body Image which started with While breastfeeding, I felt too tied down all the time and ended with While breastfeeding, I was anxious to have my body back. According to the reliability analysis conducted in this study, MBFES-A has a Cronbach Alpha value of 0.758.

Data were collected through face-to-face interviews with mothers who volunteered to participate in the study. A researcher conducted and recorded the interviews with participants in the Child care department of hospitals, and each woman needed 10 to 15 minutes to complete the questions. Before starting the interview, written and oral approval was obtained from each participant.

3.4.Ethical approval

Permission For the research was obtained from the Ethics Committee of Çankırı Karatekin University. (Date: 25 October 2022, Meeting no: 28,). Also, permission approval was obtained from the Education and Human Development Center of the Iraqi Ministry of Health/Environment Institution (Date: 2 November 2022, No: 792) as shown in Appendix 4.

Permission to use the scale was obtained via e-mail from the authors who developed the scale and tested its validity and reliability in Arabic (Appendix 5).

Volunteer participants who met the inclusion criteria were informed about the purpose of the study and the scales to be used, which data would be collected, and for what purpose the data would be used. Participants were informed about the benefits and possible harms of the study. The participants were told that they could leave the research at any time after the start of the research or at any stage, and the study was started after their informed consent was obtained.

3.5. Analysis of Data

The data obtained in the research were analyzed using the program SPSS (Statistical Package for Social Sciences) for Windows 25.0. Descriptive statistical methods such as frequency, percentage, minimum-maximum values, mean, and standard deviation were employed in the evaluation of the data. It was determined by controlling the skewness and kurtosis values that the data belonging to the MBFES-A used in the study had normal distribution. The hypotheses were tested using parametric analytical techniques, which took the normal distribution into consideration. Frequency analysis was performed to find out basic facts about each participant who took part.

A descriptive analysis was carried out in order to learn general information about the MBFES-A.

T-Test and Anova analysis were used to determine whether the MBFES-A scores of the participants differed according to demographic variables.

While creating the research report, a 95% confidence interval ($p < .05$) was used for the significance level. According to the reliability analysis conducted in this study, MBFES-A had Cronbach Alpha values of 0.758.

Table 3.1 The findings of Skewness and Kurtosis for MBFES-A

Scale	Skewness	Kurtosis
MBFES-A	0.362	0.646



4. RESULTS

4.1. The Demographic Characteristics of Participants

The results of the analysis that was conducted to determine the demographic characteristics of the participants are shown in Table 4.1.

Table 4.1 Findings on Demographic Characteristics (n=199)

Variables	Group	Frequency	Percentage
Age	18-29 years	46	23.1
	30-39 years	91	45.7
	40-49 years	62	31.2
Educational Status	Primary School	19	9.5
	Middle School	148	74.4
	High School	32	16.1
Working Status	Non-Working	68	34.2
	Working	131	65.8
Family Type	Nuclear	148	74.4
	Extended	51	25.6
Income	Income less than expenses	38	19.1
	Income equal to expenses	123	61.8
	Income more than expenses	38	19.1
Place of longest residence	Village	13	6.5
	City	186	93.5
Number of Children	1 Child	14	7.0
	2 Children	35	17.6
	3 Children	63	31.7
	4 Children or more	87	43.7
Smoking	Yes	11	5.5
	No	188	94.5
Number of cigarettes per day	1-9	8	72.7
	10-19	3	27.3

In the study, 23.1% of the participants were between the ages of 18 and 29, 45.7% were between the ages of 30 and 39 and 31.2% were between the ages of 40 and 49; 9.5% of the participants had a primary school education level, 45.7% middle school

and 16.1% high school; 34.2% of the participants were not working and 65,8% were working; 74.4% of the participants had a nuclear and 25.6% an extended family type. The monthly income of 19.1% of the families was less than expenses, the monthly income of 61.8% of the families was equal to expenses, and the income of 19.1% of the families was more than expenses. It was found that 6.5% of the participants lived in villages and 93,5% lived in cities; 7% of the participants had one child, 17.6% two children, 31.7 % three children and 43.7% four children. Also, 94.4% of the participants did not smoke and 5.5% smoked.

4.2. Birth and Baby Information

The results of the analysis that was conducted to determine information on birth and baby are shown in Table 4.2.

Table 4.2 Findings on Information about Birth and Baby

Variables	Group	Frequency	Percentage
Pregnancy planning	Yes	57	28.6
	No	142	71.4
Birth type	Normal	152	76.4
	Cesarean	47	23.6
Baby's gender	Girl	66	33.2
	Boy	133	66.8
Baby's age	1 Month	60	30.1
	2 Months	72	36.2
	3 Months	67	33.7

It was found that 28.6% of the participants had a planned pregnancy, while 71.4% of them did not; 76.4% of the participants had a normal birth while 23.6% had caesarean section; 33.2% of the participants had a baby girl and 66.8% had a boy. Also, 30.1% of the participants' babies were one month old, 36.2% were two months old and 33.7% were three months old.

4.3. Breastfeeding Information

The results of the analysis that was conducted to determine information on breastfeeding are shown in Table 4.3.

Table 4.3 Findings on Information about Breastfeeding

Variables	Groups	Frequency	Percentage
Received information	Yes	113	56.8
	No	86	43.2
Have a problem	Yes	13	6.5
	No	186	93.5
First breastfeeding	Immediately	96	48.2
	30 minutes-1 hour	53	26.6
	1-2 hours	3	1.5
	2-4 hours	2	1.0
	4-24 hours	42	21.1
	24 hours or more	3	1.5
Given first	Breast milk	148	74.4
	Sugar water	4	2.0
	Instant food	47	23.6

It was found that 56.8% of the participants had received information about breastfeeding, while 43.2% of them had not; 6.5% of the participants had a problem during the birth/postpartum period while 93.5% did not. One person each had abdominal tension or gas, back pain, back pain and insomnia, chest pain, chest pain and cough, cough, fatigue, fatigue and insomnia, insomnia, and pain, three people had backache problems. It was found that 48.2% of the participants breastfeed the baby at Immediately after birth, 26.6% of them 30 min-1 hour, 1.5% of them 1-2 hour, 1% of them 2-4 hour, 21.1% of them 4-24 hour and 1.5% of them 24 hour and above. Also, 74.4% of the participants give their baby breast milk first, 2% of them sugar water and 23.6% instant food.

4.4. Descriptive Findings of the MBFES-A Scale

Descriptive statistics of the scores on the total MBFES-A and its sub-dimensions are given in Table 4.4. As seen in the table, mean scores were 56.35 ± 7.04 on the total MBFES-A (score range: 37 and 79), 18.36 ± 3.56 on the Infant Satisfaction / Growth sub-dimension (score range: 10-28), 19.41 ± 3.19 on the Maternal Enjoyment/role attainment sub-dimension (score range: 11-31) and 18.57 ± 2.30 on the lifestyle/body image sub-dimension (score range: 13-26).

Table 4.4 Descriptive Findings of the MBFES-A

Scale and Dimensions	\bar{X}	S.S	Minimum	Maximum
MBFES-A	56.35	7.04	37.00	79.00
Infant Satisfaction/Growth	18.36	3.56	10.00	28.00
Maternal Enjoyment/Role Attainment	19.41	3.19	11.00	31.00
Lifestyle/Body Image	18.57	2.30	13.00	26.00

4.5. Comparison of MBFES-A and Demographic Characteristics

The results of the analysis conducted to test whether the MBFES-A differs according to the demographic characteristics of the participants are shown in Table 4.5.

It was determined that the infant satisfaction/growth score showed a statistically significant difference according to the age of the participants ($F=6.117$; $p<.05$). When the average score was examined with the Tukey Test, mothers who were between the ages of 40 and 49 had a higher score of satisfaction/growth than the mothers with other age groups.

It was determined that MBFES-A ($F=1.991$; $p>.05$), maternal enjoyment/role attainment ($F=2.014$; $p>.05$) and lifestyle/body image ($F=1.476$; $p>.05$) scores did not show a statistically significant difference according to the age of the participants.

It was determined that the MBFES-A score showed a statistically significant difference according to the education status of the participants ($F=9.280$; $p<.05$). When the average was examined with the Tukey Test, it was found that primary school graduate mothers had a higher score on MBFES-A than the mothers with other levels of education.

It was determined that infant satisfaction/growth score showed a statistically significant difference according to the education status of the participants ($F=6.584$; $p<.05$). When the average score was examined with the Tukey Test, it was found that primary school graduate mothers had a higher score on satisfaction/growth than the mothers with other levels of education.

It was determined that the Maternal Enjoyment/role attainment score showed a statistically significant difference according to the education status of the participants ($F=15,340$; $p<.05$). When the average score was examined with the Tukey Test, it was found that primary school graduate mothers had a higher score on Maternal Enjoyment/role attainment than the mothers with other levels of education.

It was determined that lifestyle/body image score showed a statistically significant difference according to the education status of the participants ($F=7,798$; $p<.05$). When the average score was examined with the Tukey Test, it was found that high school graduate mothers have a higher score on lifestyle/body than the mothers with other levels of education.

It was determined that the lifestyle/body image score showed a statistically significant difference according to the working status of the participants ($t=5.778$; $p<.05$). Non-working mothers had higher scores on lifestyle/body image than working mothers.

MBFES-A ($t=1.423$; $p>.05$), infant satisfaction/growth ($t=-0.248$; $p>.05$) and Maternal Enjoyment/role attainment ($t=-0.468$; $p>.05$) did not show a statistically significant difference according to the working status of the participants.

It was determined that the Maternal Enjoyment/role attainment score showed a statistically significant difference according to the family types of the participants ($t=-3.283$; $p<.05$). Extended families had higher scores on lifestyle/body image than working mothers.

It was determined that the lifestyle/body image score showed a statistically significant difference according to the family types of the participants ($t=3.816$; $p<.05$). Nuclear families had higher scores on lifestyle/body image than non-working mothers.

MBFES-A ($t=-1.102$; $p>.05$) and infant satisfaction/growth ($t=-1.705$; $p>.05$) scores did not show a statistically significant difference according to the family types of the participants.

It was determined that the MBFES-A score showed a statistically significant difference according to the incomes of the participants ($F=3.939$; $p<.05$). When the average score was examined with the Tukey Test, it was found that mothers whose income equaled expenses had a lower score on MBFES-A than the mothers of other income groups.

It was determined that the infant satisfaction/growth sub-dimension score did not show a statistically significant difference according to the income of the participants ($F=2.986$; $p>.05$).

It was determined that the Maternal Enjoyment/role attainment score showed a statistically significant difference according to the incomes of the participants ($F=6.361$; $p<.05$). When the average score was examined with Tukey Test, it was found that mothers whose income was less than expenses had a higher score on Maternal Enjoyment/role attainment than the mothers of other income groups.

It was determined that the lifestyle/body image score showed a statistically significant difference according to the incomes of the participants ($F=6.361$; $p<.05$). When the average score is examined with Turkey Test; mothers who income more

than expenses have high score of lifestyle/body image than the other income of groups mothers.

It was determined that the MBFES-A score showed a statistically significant difference according to the place of longest residence of the participants ($t=2.234$; $p<.05$). Mothers who had lived longest in a village had higher scores on MBFES-A than mothers who had lived longest in a city.

It was determined that the infant satisfaction/growth score showed a statistically significant difference according to the place of longest residence of the participants ($t=2.294$; $p<.05$). Mothers who had lived longest in a village had higher scores on infant satisfaction/growth than mothers who had lived longest in a city.

It was determined that the Maternal Enjoyment/role attainment score showed a statistically significant difference according to the place of longest residence of the participants ($t=2.707$; $p<.05$). Mothers who had lived longest in a village had higher scores on Maternal Enjoyment/role attainment than mothers who had lived longest in a city. Lifestyle/body image scores did not show a statistically significant difference according to the place of longest residence of the participants ($t=-0.436$; $p>.05$).

It was determined that the MBFES-A score showed a statistically significant difference according to the number of children of the participants ($t=5.715$; $p<.05$). Mothers with four children and above had higher scores on MBFES-A than mothers with a different number of children.

It was determined that the infant satisfaction/growth score showed a statistically significant difference according to the number of children of the participants ($t=7.125$; $p<.05$). Mothers with four children and above had higher scores on MBFES-A than mothers with a different number of children.

It was determined that the Maternal Enjoyment/role attainment score showed a statistically significant difference according to the number of children of the participants ($t=4.789$; $p<.05$). Mothers with four children and above had higher

scores on MBFES-A than mothers with a different number of children. Lifestyle/body image scores did not show a statistically significant difference according to the number of children of the participants ($t=1.089$; $p>.05$).



Table 4.5 Comparison of Participants' Mean Scores of MBFES-A and Its Sub-Dimensions by Mothers' Demographic Characteristics

Variables		MBFES-A		Infant Satisfaction / Growth		Maternal Enjoyment/role attainment		Lifestyle / Body Image	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age	18-29 years ¹	55.15	7.13	17.67	3.66	18.69	3.65	18.78	2.16
	30-39 years ²	56.02	6.49	17.84	3.16	19.41	2.77	18.75	2.40
	40-49 years ³	57.74	7.63	19.64	3.76	19.93	3.43	18.16	2.23
	F Test	1.991		6.117		2.014		1.476	
	p	.139		.003*		.136		.231	
	Post-Hoc	-		3>1.2		-		-	
Educational status	Primary School ¹	62.57	8.91	21.10	4.29	23.00	3.81	18.47	2.45
	Middle School ²	55.48	6.67	18.11	3.52	19.08	2.99	18.28	2.21
	High School ³	56.68	5.72	17.90	2.56	18.78	2.26	20.00	2.18
	F Test	9.280		6.584		15.340		7.798	
	p	.001*		.002*		.001*		.001*	
	Post-Hoc	1>2.3		1>2.3		1>2.3		3>1.2	
Working status	Not Working	57.33	6.98	18.27	3.27	19.26	3.16	19.79	2.30
	Working	55.84	7.05	18.41	3.72	19.48	3.21	17.94	2.05
	t Test	1.423		-0.248		-0.468		5.778	
	p	.157		.804		.640		.001*	
Family types	Nuclear	56.03	6.96	18.11	3.51	18.98	2.95	18.93	2.34
	Extended	57.29	7.27	19.09	3.64	20.64	3.54	17.54	1.86
	t Test	-1.102		-1.705		-3.283		3.816	
	p	.272		.090		.001*		.001*	

Abbreviation: SD: Standard Deviation; P =probability value was calculated by using t-test when there were two groups and using One-way ANOVA when there were three or more groups; *= Significant if $p \leq 0.05$; 1,2,3 = there is a significant difference, if the letters are different between groups, and there is no significant difference if the letters are the same.

Table 4.5 (Continued) Comparison of Participants' Mean Scores of MBFES-A and Its Sub-Dimensions By Mothers' Demographic Characteristics

Variables		MBFES-A		Infant Satisfaction / Growth		Maternal Enjoyment/role attainment		Lifestyle / Body Image	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Income	Less than expenses ¹	58.34	7.27	19.55	3.83	21.02	3.31	17.76	1.97
	Equal to expenses ²	55.27	6.73	17.95	3.52	19.00	2.92	18.31	2.15
	More than expenses ³	57.86	7.29	18.50	3.23	19.13	3.44	20.23	2.35
	F Test	3.939		2.986		6.361		14.777	
	p	.021*		.053		.002*		.032*	
	Post-Hoc	1>2.3		-		1>2.3		3>1.2	
Place of longest residence	Village	60.53	7.46	20.53	3.61	21.69	4.09	18.30	2.09
	City	56.06	6.94	18.21	3.52	19.25	3.06	18.59	2.32
	t Test	2.234		2.294		2.707		-0.436	
	p	.027*		.023*		.007*		.663	
Number of children	1 Child ¹	54.00	10.00	17.57	4.46	18.21	5.67	18.21	2.42
	2 Children ²	55.00	5.92	17.48	3.29	18.42	2.62	19.08	2.11
	3 Children ³	54.52	5.50	17.28	2.69	18.96	2.38	18.26	2.02
	4 Children and above ⁴	58.60	7.36	19.63	3.72	20.32	3.18	18.65	2.53
	F Test	5.715		7.125		4.789		1.089	
	p	.001*		.001*		.003*		.355	
	Post-Hoc	4>1.2.3		4>1.2.3		4>1.2.3		-	

Abbreviation: SD: Standard Deviation; P =probability value was calculated by using t-test when there were two groups and using One-way ANOVA when there were three or more groups; *= Significant if $p \leq 0.05$; 1,2,3,4= there is a significant difference, if the letters are different between groups, and there is no significant difference if the letters are the same.

4.6. Comparison of MBFES-A and Birth and Baby Information

The results of the analysis conducted to test whether the MBFES-A differs according to the birth and baby information is shown in Table 4.6.

It was determined that the MBFES-A score showed a statistically significant difference according to the pregnancy planning of the participants ($t=-2.837$; $p<.05$). Participants who had not planned their pregnancy had higher scores on MBFES-A than participants with planned pregnancies.

It was determined that the infant satisfaction/growth score showed a statistically significant difference according to the pregnancy planning of the participants ($t=-2.674$; $p<.05$). Participants not planning their pregnancy had high scores on infant satisfaction/growth than participants who planned their pregnancy.

It was determined that the Maternal Enjoyment/role attainment score showed a statistically significant difference according to the pregnancy planning of the participants ($t=-3.945$; $p<.05$). Participants not planning their pregnancy had higher scores on maternal enjoyment/role attainment than participants who planned their pregnancy.

Lifestyle/body image scores did not show a statistically significant difference according to the pregnancy planning of the participants ($t=0.819$; $p>.05$).

It was determined that the MBFES-A score showed a statistically significant difference according to the birth type of the participants ($t=-8.859$; $p<.05$). Participants who had cesarean had higher scores on MBFES-A than participants who had a normal birth.

It was determined that the infant satisfaction/growth score showed a statistically significant difference according to the birth type of the participants ($t=-10.831$; $p<.05$). Participants who had caesarean had higher scores on infant satisfaction/growth than participants.

It was determined that the maternal enjoyment/role attainment score showed a statistically significant difference according to the birth type of the participants ($t=-5.085$; $p<.05$). Participants who had caesarean had higher scores on maternal enjoyment/role attainment than participants who had a normal birth.

It was determined that the lifestyle/body image score showed a statistically significant difference according to the birth type of the participants ($t=-3.090$; $p<.05$). Participants who had caesarean had higher scores on lifestyle/body image than participants who had a normal birth.

MBFES-A ($t=-0.310$; $p>.05$), infant satisfaction/growth ($t=-0.315$; $p>.05$), maternal enjoyment/role attainment ($t=-0.763$; $p>.05$) and lifestyle/body image ($t=0.316$; $p>.05$) scores did not show a statistically significant difference according to the gender of the participants' babies.

MBFES-A ($F=2.188$; $p>.05$), infant satisfaction/growth ($F=0.809$; $p>.05$), maternal enjoyment/role attainment ($F=1.941$; $p>.05$) and lifestyle/body image ($F=1.670$; $p>.05$) scores did not show a statistically significant difference according to the age of the participants' babies.

Table 4.6 Comparison of Participants' Mean Scores on MBFES-A and Its Sub-Dimensions by Birth and Baby Information

Variables		MBFES-A		Infant Satisfaction / Growth		Maternal Enjoyment / Role Attainment		Lifestyle / Body Image	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pregnancy planning	Yes	54.16	7.72	17.32	3.59	18.05	3.62	18.79	2.20
	No	57.24	6.58	18.78	3.48	19.96	2.83	18.49	2.35
	t Test	-2.837		-2.674		-3.945		0.819	
	p	.005*		.008*		.001*		.414	
Birth type	Normal	54.27	5.73	17.16	2.82	18.81	2.84	18.30	2.21
	Cesarean	63.11	6.70	22.28	2.86	21.36	3.42	19.47	2.39
	t Test	-8.859		-10.831		-5.085		-3.090	
	p	.001*		.001*		.001*		.002*	
Baby's gender	Girl	56.14	7.58	18.32	3.92	19.17	3.50	18.65	2.20
	Boy	56.46	6.79	18.39	3.39	19.53	3.02	18.54	2.36
	t Test	-0.310		-0.135		-0.763		0.316	
	p	.757		.893		.446		.752	
Baby's age	1 Month ¹	57.63	8.29	18.68	4.16	20.05	3.82	18.90	2.28
	2 Months ²	56.51	6.09	18.51	3.28	19.32	2.71	18.68	2.39
	3 Months ³	55.04	6.65	17.92	3.28	18.94	2.99	18.18	2.21
	F Test	2.188		0.809		1.981		1.670	
	p	.115		.447		.141		.191	
	Post-Hoc	-		-		-		-	

Abbreviation: SD: Standard Deviation; P =probability value was calculated by using t-test when there are two groups and using One-way ANOVA when there are three or more groups; *= Significant if the p <=0.05; 1,2,3= there is a significant difference if the letters are different between groups, and there is no significant difference if the letters are the same.

4.7. Comparison of MBFES-A and Breastfeeding Information

The results of the analysis conducted to test whether the MBFES-A differs according to breastfeeding information is shown in Table 4.7.

It was determined that MBFES-A score showed a statistically significant difference according to received information of the participants ($t=-2,665$; $p<.05$). Participants not received information have high scores of MBFES-A than participants received information.

It was determined that infant satisfaction/growth score showed a statistically significant difference according to received information of the participants ($t=-3,569$; $p<.05$). Participants not received information have high scores of infant satisfaction/growth than participants received information.

Maternal enjoyment/role attainment ($t=-1,738$; $p>.05$) and lifestyle/body image ($t=-0,266$; $p>.05$) Score do not show a statistically significant difference according to received information of the participants.

It was determined that the MBFES-A score showed a statistically significant difference according to the participants having a problem ($t=6.722$; $p<.05$). Participants having a problem had higher scores on MBFES-A than participants who did not have a problem.

It was determined that the infant satisfaction/growth score showed a statistically significant difference according to the participants having a problem ($t=5.145$; $p<.05$). Participants who had a problem had higher scores on infant satisfaction/growth than participants who did not have a problem.

It was determined that the maternal enjoyment/role attainment score showed a statistically significant difference according to whether the participants had a

problem ($t=6.130$; $p<.05$). Participants with a problem had higher scores on maternal enjoyment/role attainment than participants without a problem.

It was determined that the lifestyle/body image score showed a statistically significant difference according to whether the participants had a problem ($t=3.378$; $p<.05$). Participants without a problem had higher scores on lifestyle/body image than participants with a problem.

It was determined that the MBFES-A score showed a statistically significant difference according to the first breastfeeding of the participants ($F=50.834$; $p<.05$). When the average score was examined with Tukey Test, it was found that mothers who breastfed their babies after one hour had a higher score on MBFES-A than the other groups.

It was determined that the infant satisfaction/growth score showed a statistically significant difference according to the first breastfeeding of the participants ($F=70.587$; $p<.05$). When the average score was examined with the Tukey Test; who breastfed their babies after one hour had a higher score on infant satisfaction/growth than the other groups.

It was determined that the maternal enjoyment/role attainment score showed a statistically significant difference according to the first breastfeeding of the participants ($F=17.890$; $p<.05$). When the average score was examined with the Tukey Test, it was found that mothers who breastfed immediately after birth had a higher score on maternal enjoyment/role attainment than the other groups.

It was determined that the lifestyle/body image score showed a statistically significant difference according to the first breastfeeding of the participants ($F=6.339$; $p<.05$). When the average score was examined with Tukey Test, it was found that mothers who breastfed their babies after one hour had a higher score on lifestyle/body image than mothers breastfeeding immediately after birth.

It was determined that the MBFES-A score showed a statistically significant difference according to given first food given to baby of the participants ($F=42.765$; $p<.05$). When the average score was examined with Tukey Test, it was found that baby given first instant food of participants had a higher score on MBFES-A than by given first breast milk of participants.

It was determined that infant satisfaction/growth score showed a statistically significant difference according to given first food given to baby of the participants ($F=64.598$; $p<.05$). When the average score is examined with Tukey Test; the baby is given first instant food and sugar water of participants have a high score of infant satisfaction/growth score than by given first breast milk of participants.

It was determined that the maternal enjoyment/role attainment score showed a statistically significant difference according to baby given first of the participants ($F=15.525$; $p<.05$). When the average score was examined with the Tukey Test; baby given first instant food of participants had a higher score on maternal enjoyment/role attainment than by given first breast milk of participants.

It was determined that lifestyle/body image score showed a statistically significant difference according to baby given first of the participants ($F=4.790$; $p<.05$). When the average score was examined with the Tukey Test, it was found that baby given first instant food of participants had a higher score on lifestyle/body image than by given first breast milk of participants.

Table 4.7 Comparison of Participants' Mean Scores of MBFES-A and Its Sub-Dimensions by Breastfeeding Information

Variables		MBFES-A		Infant Satisfaction / Growth		Maternal Enjoyment / Role Attainment		Lifestyle / Body Image	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Received information	Yes	55.21	6.60	17.60	3.33	19.07	3.24	18.54	2.00
	No	57.86	7.36	19.37	3.63	19.86	3.08	18.63	2.66
	t Test	-2.665		-3.569		-1.738		-0.266	
	p	.008*		.001*		.084		.790	
Have a problem	Yes	57.85	6.75	23.00	3.55	24.23	3.49	20.62	1.80
	No	55.55	6.35	18.04	3.34	19.07	2.89	18.44	2.27
	t Test	6.722		5.145		6.130		3.378	
	p	.001*		.001*		.001*		.001*	
First breastfeeding	Immediately ¹	53.45	5.01	16.76	2.78	28.58	2.61	18.10	1.77
	30 Minutes-1 Hour ²	55.02	5.92	18.57	2.46	18.88	2.81	18.57	2.83
	Above 1 Hour ³	63.36	6.80	22.30	2.90	21.56	3.62	19.50	2.34
	F Test	50.804		70.587		17.890		6.339	
	p	.001*		.001*		.001*		.002*	
	Post-Hoc	3>1.2		3>1.2		1>2.3		3>1	
Given first	Breast Milk ¹	54.09	5.53	17.05	2.73	18.72	2.70	18.31	2.20
	Sugar Water ²	61.00	9.66	21.00	3.82	22.00	6.37	18.00	2.94
	Instant Food ³	63.11	6.70	22.27	2.86	21.36	3.42	19.47	2.39
	F Test	42.765		64.598		15.525		4.790	
	p	.001*		.001*		.001*		.009*	
	Post-Hoc	3>1		2.3>1		2.3>1		3>1.2	

Abbreviation: SD: Standard Deviation; P =probability value was calculated by using t-test when there are two groups and using One-way ANOVA when there are three or more groups; *= Significant if the p <=0.05; 1,2,3= there is a significant difference, if the letters are different between groups, and there is no significant difference if the letters are the same.

5. DISCUSSION

Breast milk, which is the most suitable and unique feeding method for the healthy growth and development of babies, has a very special biological and emotional effect on mother and baby health (Akyüz *et al.* 2007; Samur, 2008; Schack and Michaelsen 2006; Özmert 2005). However, breastfeeding is not only an individual behavior, but also a systematic outcome affected by many factors (Matthews 1991). The most important factors affecting breastfeeding success are mothers' knowledge about breast milk and breastfeeding and their satisfaction with breastfeeding (Durmazoğlu and Okumuş 2019; Murugesan *et al.* 2022). In this section, the findings obtained by examining the effects of mothers' breastfeeding experiences on satisfaction are discussed in the light of the literature.

5.1. Discussing the Socio-demographic Findings of the Mothers for the Study

When the socio-demographic characteristics of the mothers included in our study were examined, it was found that 45.7% of the mothers were between the ages of 30 and 39. Similarly, in a study conducted by Al-Kayyim (2023), the maternal age range was 31-40 with a maximum of 32.9%. Safari *et al.* (2020) found that 83% of mothers were between the ages of 18 and 35. When the educational status of the mothers included in our study was examined, it was found that 74.4% of them were secondary school graduates. In the study by Al-Kayyim (2023), the highest proportion of mothers were primary school graduates with 36%; de Senna *et al.* (2020) found that 71% of mothers had at least secondary school education. It is thought that the reason for the difference from the literature in education level may be due to the fact that the studies were conducted in different regions.

In our study, it was determined that 65.8% of the mothers were working. When the literature is examined, it is seen that most of the mothers do not work (Çalık *et al.* 2017; Safari *et al.* 2018; Pino and Ahmed 2020; Yenal *et al.* 2013). Similar to our study, Al-

Kayyim (2023) found that 40.3% of mothers (25.2% civil servants, 15.1% self-employed) were in business life.

In our study, 61.8% of the mothers stated that their income was equal to their expenses. When the literature was examined (Al-Kayyim 2023; Özkan *et al.* 2022; Yenal *et al.* 2013), it was seen that this rate ranged between 50 and 73.8%, and the results were similar to our study. In our study, it was seen that 74.4% of the mothers had a nuclear family structure and this rate was similar to the literature (Al-Kayyim 2023; Çalık *et al.* 2017; Özkan *et al.* 2022; Pino and Ahmed 2020). It was determined that 93.5% of the mothers resided in a city. In the study thisof Al-Kayyim (2023), it was seen that 52.7% of the mothers resided in the city, and was similar to our study.

In our study, it was determined that 43.7% of the mothers had four or more children. As a result of the literature review, Safari *et al.* (2018) found that 77% of mothers had 2-4 children. In our study, the rate of smoking in mothers was found to be 5.5%. In a study by Kösegil (2022), the rate of smoking was 15.7%, and in a study by Şahin and Özyurt (2017), the rate of smoking was 9.3% in women with children aged between 0 and 24 months. According to Tanrikulu *et al.* (2012) 12% of the mothers smoked. In the light of these data, it is seen that the smoking status of the mothers participating in the study is similar to other studies.

5.2. Discussion of Mothers' Birth and Baby Information for Research

It was determined that 30.1% of the babies of the mothers included in our study were one month old, 36.2% were two months old, and 33.7% were three months old and showed a normal distribution. In the study, it was determined that 76.4% of the mothers gave birth by the normal way and 66.8% of the babies born were male. On the other hand, Ozkan *et al.* (2022), in their study evaluating the breastfeeding success of mothers of newborn infants and related factors found that 54.5% of the mothers gave birth to their infants normally and 50.9% of the babies born were male. Similarly, in a study by Çalık *et al.* (2017) in which they investigated the breastfeeding practices of mothers and

affecting factors, 55.6% of mothers stated that their last mode of delivery was the normal way. Unlike our study, Özkan *et al.* (2022) concluded that 33.1% of mothers had an unplanned pregnancy, while Çalık *et al.* (2017) found 34.2%. This result can be attributed to the fact that the research was conducted in different regions.

5.3. Discussing the Breastfeeding Information of the Mothers for Research

The proportion of getting information about prenatal breast milk and breastfeeding was found to be 56.8% of the mothers participating in the study. On the other hand, Ozkan *et al.* (2022) determined that 36.1% of the mothers had received prenatal information. Compared to these two studies, the proportion of getting information about breast milk and breastfeeding was as high as 91.7%, according to Aslan's (2016) study.

The most important factor in ensuring the continuity of breast milk is to start breastfeeding as soon as possible after birth and to breastfeed the baby whenever it wants (Güneri, 2015). In our study, it was determined that 48.2% of the mothers breastfed their babies immediately, 74.4% of them first gave their babies breastmilk and 93.5% of them had no problems with breastfeeding after birth. Sahin *et al.* determined that (2013) 88% of mothers breastfed their babies in the first hour, Yenil *et al.* (2013) determined that 57.7% of mothers breastfed their babies longer than one hour, and Kurnaz and Hazar (2014) found that 67.4% of mothers breastfed their babies in the first half hour. In Cömert's (2011) study, 66.3% and in Şencan's (2008) study, 84.1% of mothers gave their first breast milk. Looking at these studies, we can say that the rate of first breastfeeding is high.

5.4. Discussion of MBFES-A Mean Scores According to Socio-Demographical Characteristics of Mothers

The MBFES-A scale, which provides an objective assessment in terms of breastfeeding criteria, was used to evaluate the breastfeeding satisfaction of the mothers participating

in our study. In the literature, the average score is generally used to evaluate the scores obtained from the scale (Nabulsi *et al.* 2021). It was determined that the total mean score of the mothers from the MBFES-A was 56.35 ± 7.04 , with a minimum of 37 points and a maximum of 79 points. Senna *et al.* (2020) found that mothers' breastfeeding satisfaction was at a good level (total score/maximum score from the scale = 124/ 145) in a study in Brazil. Ahmed and Roumani (2020) found in a study to investigate maternal satisfaction in the first, second and third months after discharge from the hospital that the mean MBFES score of the control group was 112.8 ± 18.03 , while the mean MBFES score of the intervention group was 122.2 ± 17.68 . Avilla *et al.* (2020) also obtained a mean MBFES score ranging from 124 ± 10 to 63-145 with a median of studies. Murugesan *et al.* (2022), in a study conducted in India categorizing MBFES scores according to the cut-off point, found that 57.7% of mothers were very satisfied with breastfeeding. Avaliyah *et al.* (2019) concluded in a study in Indonesia that 53.4% of breastfeeding mothers had a high level of satisfaction. In a validity study of the MBFES-A scale used in our study in Lebanese women, it was found that the mean total score in the mothers of babies who received only breast milk was 108.1 ± 9.7 in the first month and 108.8 ± 9.3 in the third month. From these results, it can be said that our research finding differs from the studies in the literature. It can be said that the reason for the differences is due to the fact that the studies were conducted with mothers from different cultures and socio-demographic structures. In addition, no other study was found in the literature using the MBFES-A scale consisting of 26 questions. Studies in which validity and reliability studies in different countries and the MBFES consisting of 29 or 30 questions were used were included in the discussion. For this reason, we see the difference in the mean scores. In the light of this information, it is thought that our results will contribute to the Iraqi literature.

MBFES-A ($F=1.991$; $p>.05$) by age groups of mothers, Maternal Enjoyment/role attainment ($F=2.014$; $p>.05$) and lifestyle/body image ($F=1.476$; $p >.05$) as the sub-dimension of the mother scores did not show a statistically significant difference, and infant satisfaction/growth scores were found to be statistically significant according to the age of the participants ($F=6.117$; $p<.05$). When the average score was examined with

the Tukey Test; Infant Satisfaction/growth scores of mothers in the 40-49 age group were found to be higher than those of the mothers in the age group. Ericson *et al.* (2021) stated that higher maternal age was positively associated with higher breastfeeding satisfaction, while Murugesan *et al.* (2022) stated that age was not associated with breastfeeding satisfaction. This difference suggests that it may be due to the distribution of age groups.

It was determined that the MBFES-A score showed a statistically significant difference according to the educational status of the participants ($F=9.280$; $p<.05$). When the average was examined with the Tukey Test, it was found that the MBFES-A score of the mothers who had a primary school level education was higher than that of the mothers with other education levels. When the sub-dimensions of the scale were analyzed, infant satisfaction/growth score ($F=6.584$; $p<.05$), Maternal Enjoyment/role attainment score ($F=15.340$; $p<.05$) and Lifestyle/body image score ($F=7.798$; $p. <.05$) were found to be statistically significant according to the educational status of the participants. When the average score was examined with the Tukey Test, it was found that primary school graduate mothers had a higher score on Maternal Enjoyment/role attainment and baby satisfaction/growth than the mothers with other levels of education. The mothers who had graduated from higher education in the lifestyle/body image sub-dimension were higher than the other educational status scores.

It should not be forgotten that it is important to inform and support mothers about correct breastfeeding behavior both in the prenatal and postnatal period. In the literature, it is stated that as the education level of mothers increases, the understanding of the benefits of breast milk increases; therefore, breastfeeding behaviors of mothers with higher education levels are more positive and breastfeeding durations are longer (American Academy of Pediatrics 1997; Betrini *et al.* 2003; Wen *et al.* 2009). In Ludvigsson's (2004) study, women with a higher education level of five years and above were found to have a significantly higher level of knowledge about breastfeeding (Ludvigsson, 2004). Yilmaz *et al.* (2002) found that university graduate mothers gave breast milk for a longer period of time. Ozer *et al.* (2010) examined the knowledge and

behaviors of mothers on breast milk and breastfeeding and it was found that mothers with high school or higher education had higher breast milk knowledge scores than mothers with primary school and below education (Özer *et al.* 2010). Ekambaram *et al.* (2010) found in a study in India that as the education level of mothers increased, their knowledge scores on breastfeeding increased (Ekambaram *et al.* 2010). Ericson *et al.* (2021) found no relationship between the education level of mothers and breastfeeding satisfaction (Ericson, Limpa and Flacking 2021). In our study, it was thought that mothers with low education levels may be multiparous and therefore, they may have better breastfeeding skills and therefore higher satisfaction because they have previous breastfeeding experiences.

The mother's work is an important factor affecting breastfeeding behavior. Therefore, breastfeeding satisfaction will also be affected. Today, the proportion of working women of childbearing age is increasing. MBFES-A ($t=1.423$; $p>.05$) mean score and sub-dimensions of the scale, infant satisfaction/growth ($t=-0.248$; $p>.05$) and maternal enjoyment/role attainment ($t=-0.468$; $p>.05$) scores were not found to be statistically significant according to the working status of the mother. Avaliyah *et al.* (2019) also found no relationship between working mothers and breastfeeding satisfaction. However, it was determined that the sub-dimension lifestyle/body image score of the scale was statistically different according to the working status of the participants ($t=5,778$; $p<.05$). Non-working mothers had higher lifestyle/body image scores than working mothers. When the relevant literature was examined, no evidence of breastfeeding satisfaction was found directly related to the lifestyle/body image sub-dimension of mothers. However, in a study conducted by Ayran and Yılmaz (2022) to determine the body image and perceived stress levels of mothers during breastfeeding, it was concluded that body satisfaction was lower in obese mothers whose income was less than their expenses and who only fed their babies with ready-made formula. This may be due to the fact that mothers are in different working environments and have different working hours.

One of the important factors affecting breastfeeding is socio-economic status. According to the study's findings, it was determined that there was a statistically significant difference in the mean MBFES-A score ($F=3.939$; $p<.05$) and the sub-dimension scores of the baby satisfaction/growth from the mother ($F=6.361$; $p<.05$) according to the income of the participants. In the advanced statistical analysis, the satisfaction score of the mothers whose expenses were less than their income was higher than that of the mothers in the other income group. It was determined that the infant satisfaction/growth sub-dimension score did not show a statistically significant difference according to the income of the participants ($F=2.986$; $p>.05$). De Senna *et al.* (2019) reported that the economic situation did not affect breastfeeding satisfaction. Avaliyah *et al.* (2020) stated that household income and breastfeeding self-efficacy were associated with breastfeeding satisfaction. This difference is thought to be because studies were conducted in different populations. At this point, socio-economic status is not the main determinant of breastfeeding satisfaction; It is thought to affect satisfaction under the influence of different variables.

It was determined that the MBFES-A score showed a statistically significant difference according to the place where the participants had lived the longest ($t=2.234$; $p<.05$). When the sub-dimensions of the scale are examined, it was determined that the infant satisfaction/growth score ($t=2.294$; $p<.05$) and maternal enjoyment/role attainment obtained from the mother ($t=2.707$; $p<.05$) differed statistically significantly according to the place where they had lived the longest. As a result of the advanced statistics, the scores of the mothers who had lived in a village for the longest time were higher than the scores of the mothers who had lived longest in a city. Lifestyle/body image sub-dimension scores did not show a statistically significant difference according to the place where the participants had lived the longest ($t=-0.436$; $p>.05$). In the literature review, it was found that there is no difference in breastfeeding practices of mothers according to the place where they lived (Al-Zamanni 2023; Kurnaz and Hazar 2014). However, no research on breastfeeding satisfaction was found. Our research result will contribute to the literature.

While MBFES-A ($t=-1.102$; $p>.05$) and infant satisfaction/growth ($t=-1.705$; $p>.05$) sub-dimension scores did not show a statistically significant difference according to the family types of the participants, Maternal enjoyment/role attainment score ($t=-3.283$; $p<.05$) and lifestyle/body image ($t=3.816$; $p<.05$) scores were statistically significant. In the further analysis, the maternal enjoyment/role attainment score was higher in the extended family type, and the lifestyle/body image score was higher in the nuclear family type.

In the postpartum period, women expect support from their social environment as well as from nurses (Gülşen and Merih, 2018; MacKinnon, McIntyre and Quance, 2005). They mostly expect support from their own mothers and their closest neighbors (Demirtaş 2005). For this reason, whether their mothers live in the same house or in a different house, they are affected by family elders and neighbors during the breastfeeding process. In a study conducted by Çalık *et al.* (2017), it was found that family structure had an effect on mothers' mean knowledge about breastfeeding.

It was determined that the MBFES-A score showed a statistically significant difference according to the number of children of the participants ($t=5.715$; $p<.05$). When the sub-dimensions were examined, infant satisfaction/growth score ($t=7.125$; $p<.05$), maternal enjoyment/role attainment score ($t=4.789$; $p<.05$) were found to be significant. In the further analysis, it was determined that MBFES-A and two sub-dimension scores were higher in mothers with four children or more. It was observed that lifestyle/body image scores did not show a statistically significant difference according to the number of children of the participants ($t=1.089$; $p>.05$). In the literature review, Murugesan *et al.* (2022) found that multiparous women were more satisfied with breastfeeding, while Avilla *et al.* (2020) and Senna *et al.* (2020) said that there is no difference. At this point, the number of children is not the main determinant of breastfeeding satisfaction. It is thought to affect satisfaction under the influence of different variables.

5.5. Discussion of MBFES-A Mean Scores According to Mothers' Birth and Infant Information

It was determined that the MBFES-A score of the participants showed a statistically significant difference according to their pregnancy planning ($t=-2.837$; $p<.05$). Participants with a non-planned pregnancy had higher MBFES-A scores than participants with a planned pregnancy.

When the sub-dimensions of the scale were examined, it was found that the baby satisfaction/growth score ($t=-2.674$; $p<.05$) and maternal enjoyment/role attainment score ($t=-3.945$; $p<.05$) were statistically significant in terms of the participants' unplanned pregnancy and lifestyle/body image score ($t=0.819$; $p>.05$); on the other hand, it was determined that there was no significant difference ($t=-3.945$; $p<.05$).

De Senna *et al.* (2020) found that the planned pregnancy of the mother did not affect breastfeeding satisfaction, and Avilla *et al.* (2020) reported that planned pregnancy increased the satisfaction score. On the other hand, Ozkan *et al.* (2022) concluded that planned pregnancy did not affect breastfeeding success and self-efficacy. Our research result shows parallelism with the literature except for Avilla *et al.* (2020) ' study.

It was determined that the MBFES-A score showed a statistically significant difference according to the birth type of the participants ($t=-8.859$; $p<.05$). The MBFES-A scores of the participants who had a cesarean section were higher than the scores of the mothers who had a normal delivery.

In the literature review, Murugesan *et al.* (2022), Avila *et al.* (2020) and Avaliyah *et al.* (2019) stated that mothers who gave birth normally had higher breastfeeding satisfaction. De Senna *et al.* (2020) reported that there was no relationship between

delivery type and breastfeeding satisfaction. Our research findings show that there are similarities with some studies and differences with some studies. The reason for the difference is thought to be due to the different birth experiences of the mothers, because negative birth experiences and breastfeeding problems may lead to situations such as cesarean section request in subsequent births due to fear of childbirth (Størksen *et al.* 2013).

There was no statistically significant difference in MBFES-A ($t=-0.310$; $p>.05$) and sub-dimensions of the scale according to infant gender. De Senna *et al.* (2020) reported that the gender of the mother's baby did not affect breastfeeding satisfaction. The literature finding supports our study result.

MBFES-A ($F=2.188$; $p>.05$) and the sub-dimensions of the scale did not show a statistically significant difference according to the age of the baby. Cooke *et al.* (2003) reported that mothers scored 116 on the 15th day, 117 on the 45th day, and 120 on the third month in a study to determine postpartum maternal satisfaction. The literature finding supports our study result.

5.6. Discussion of MBFES-A Mean Scores According to Breastfeeding Knowledge of Mothers

It was determined that the MBFES-A score was statistically significant according to the participants' prenatal breastfeeding education ($t=-2.665$; $p<.05$). In addition, the infant satisfaction/growth sub-dimension was found to be statistically significant ($t=-3.569$; $p<.05$). In the advanced statistics for MBFES-A and the infant satisfaction/growth sub-dimension, participants who had not received training were found to have higher satisfaction than those who had received training.

The maternal enjoyment/role attainment ($t=-1.738$; $p>.05$) and lifestyle/body image ($t=-0.266$; $p>.05$) sub-dimension scores obtained from the mother were not found to be statistically significant.

There are studies in the literature showing that the education given to women and previous experiences are effective in knowing the attitudes and techniques (Çalık *et al.* 2017; Çakmak and Dengi 2017). On the contrary, there are studies showing that breastfeeding education is not effective in breastfeeding success and self-efficacy. Breastfeeding self-efficacy and attitude are among the important factors that increase satisfaction (Avaliyah, Rachmavati and Rahmah 2019). Therefore, our research result suggested that breastfeeding education given to mothers was not effective.

It was determined that the MBFES-A score for mothers having problems in breastfeeding after delivery/postpartum was statistically significant ($t=6.722$; $p<.05$). Participants with problems had higher MBFES-A scores than participants without problems.

When the sub-dimensions of the scale were examined, the infant satisfaction/growth score ($t=5.145$; $p<.05$), maternal enjoyment/role attainment score ($t=6.130$; $p<.05$) and the lifestyle/body image score ($t=3.378$; $p<.05$) were statistically evaluated and found to be significant. In further analysis, it was observed that the participants who had problems had a higher satisfaction score than the participants who did not have problems.

Avilla *et al.* (2020) stated that the mother's not having a breastfeeding problem increases maternal satisfaction. Schlomer *et al.* (1999), in a study conducted with 30 mothers who breastfed for the first time one week after birth, stated that the levels of breastfeeding satisfaction were high and breastfeeding problems did not affect this. The difference between the studies is thought to be due to the difference in the breastfeeding duration of the mothers.

It was determined that the MBFES-A score of the participants showed a statistically significant difference according to the time of first breastfeeding ($F=50.834$; $p<.05$). In the advanced analysis, the MBFES-A scores of mothers who breastfed their babies after one hour were higher than the other groups. When the sub-dimensions of the scale were examined, the Infant satisfaction/growth score ($F=70.587$; $p<.05$), maternal enjoyment/role attainment score ($F=17.890$; $p<.05$), and Lifestyle/body image score ($F=6.339$; $p<.05$) were found to be statistically significant. In further analysis, it was observed that the infant satisfaction/growth score and Lifestyle/body image scores were higher in the direction of breastfeeding after one hour. The maternal enjoyment/role attainment score had a higher satisfaction score in the direction of breastfeeding immediately after birth.

De Senna *et al.* (2020) and Murugesan *et al.* (2022) did not find a significant relationship between breastfeeding satisfaction and factors such as breastfeeding the baby within one hour and breastfeeding support in the delivery room. Ince *et al.* (2017) reported that 54.9% of mothers breastfed their babies within the first hour after birth, but this result did not affect mothers' breastfeeding self-efficacy or breastfeeding success. In our study, it was concluded that mothers who gave birth by cesarean section had a high level of breastfeeding satisfaction. It is thought that the same result may have affected the results of breastfeeding duration.

It was determined that the MBFES-A score was statistically significantly different according to the first food given to the baby after birth by the participants ($F=42.765$; $p<.05$). In further analysis, it was seen that mothers who gave formula to their first baby had higher MBFES-A scores than mothers who gave breast milk first.

When the sub-dimensions of the scale were examined, the infant satisfaction/growth score ($F=64.598$; $p<.05$), maternal enjoyment/role attainment score ($F=15.525$; $p<.05$) and the lifestyle/body image score ($F=4.790$; $p<.05$) were statistically evaluated and found to be significant. In further analysis, it was determined that the satisfaction scores of the mothers who gave their babies breast milk first were low. De Senna *et. al* (2019)

stated that giving formula to the baby in the maternity ward and within 30 days after birth did not affect maternal breastfeeding satisfaction. The literature finding does not support our study result. This result also supports the result that mothers who participated in our study had low breastfeeding satisfaction scores.



6. CONCLUSION

6.1. Conclusion

- It was found that 45.7% of the participants were aged between 30 and 39; 45.7% were educated to middle school level, and 65.8% were working. Also, 74.4% had a nuclear family structure, 61.8% had a monthly income equal to expenses, 93.5% lived in a city, and 43.7% had four or more children. It was determined that 5.5% of the participants smoked.
- It was found that 71.4% of the mothers' most recent pregnancies were unplanned, 76.4% had given birth most recently by the normal vaginal way, 66.8% of the babies were born male, and 30.1% of the babies were aged one month, 36.2% two months, and 33.7% three months.
- It was determined that 56.8% of the mothers participating in the research had received information before the birth on mother's milk and breastfeeding, 48.2% breastfed their baby immediately after birth, and 93.5% had had no problems with breastfeeding after the birth.
- It was found that the mothers had a mean score of 56.35 ± 7.04 on the MBFES-A, 18.36 ± 3.56 on the Infant Satisfaction / Growth Sub-Dimension, 19.41 ± 3.19 on the Maternal Enjoyment/Role Attainment Sub-Dimension, and 18.57 ± 2.30 on the Lifestyle/Mother's Body Image Sub-dimension.
- It was determined that there were statistically significant differences in the participants' MBFES-A scores according to their education level, economic status perception, place of residence, number of children, whether their pregnancy was planned, whether they had received information on breastfeeding during pregnancy, whether they had had any problems with breastfeeding at the birth or afterwards, how long after the birth they had breastfed the baby, and what food they had first given to the baby after the birth.
- On the Infant Satisfaction / Growth sub-dimension, the following were found to be significant: the mother being aged 40-49 years, having a primary school education level, living in a city, having four or more children, the pregnancy

being unplanned, having a cesarean birth, not having received information on breastfeeding, having had a problem with breastfeeding after the birth, the time to first breastfeeding being more than one hour, and first having given the baby something other than mother's milk.

- On the Maternal Enjoyment/Role Attainment sub-dimension, the following were found to be significant: the mother being educated to primary school level, having a nuclear family structure, having expenses more than income, having lived longest in a city, having four or more children, the pregnancy being unplanned, having given birth by cesarean, having had a problem with breastfeeding after the birth, starting to breastfeed after one hour, and first giving the baby something other than breastmilk.
- On the Lifestyle/Mother's Body Image sub-dimension, the following were found to be significant: the mother having a university-level education, not working, having a nuclear family structure, having an income greater than expenses, having given birth by cesarean, having had a problem with breastfeeding after the birth, starting to breastfeed one hour after the birth, and having first given the baby something other than breastmilk.
- It was established that the baby's gender and age did not affect the mother's satisfaction with breastfeeding.

6.2. Recommendations

In line with the data obtained from this study in which the Satisfaction of Breastfeeding Experiences of Mothers was examined, the following are recommended:

- Evaluating mothers' breastfeeding satisfaction and addressing the factors affecting it, and developing individual breastfeeding support plans accordingly.
- Providing breastfeeding counseling to mothers during labor and the postpartum period.
- Questioning cultural characteristics and myths about breastfeeding while providing counselling on breast milk and breastfeeding.

- Treating first-time mothers as an at-risk group in terms of breastfeeding and providing breastfeeding counselling in line with their needs from their pregnancies.
- Ensuring that the spouse and other family members participate in the training, if possible, taking into account individual and cultural characteristics.
- Providing in-service training on breastfeeding to nurses/midwives who provide prenatal, birth and postnatal care.
- Determining the differences between cultures by determining the breastfeeding satisfaction of mothers in different cultures and the affecting factors.
- Increasing the awareness of breastfeeding from a social point of view through educational institutions, media, health institutions, non-governmental organizations and peer training.

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APPENDICES

Appendix 1: Questionnaire





Appendix 2: The Arabic version of the Arabic Maternal Breastfeeding Evaluation Scale (MBFES-A) (ENGLISH)





**The Arabic version of the Arabic Maternal Breastfeeding Evaluation Scale
(MBFES-A) (ARABIC)**





Appendix 3: Ethics Committee Permission



Appendix 4: Ethics committee approval from Iraq









Appendix 5: Permission to use scale



CURRICULUM VITAE

Personal Information

Name and Surname : Ali Hikmat Jasim ALAWADI

