



**REPUBLIC OF TÜRKİYE
HARRAN UNIVERSITY
GRADUATE SCHOOL OF HEALTH SCIENCES**

MASTER THESIS

**KNOWLEDGE AND PRACTICE OF PEDIATRIC NURSES IN IRAQ
REGARDING BREASTFEEDING**

KAWTHAR IBRAHİM OTHMAN OTHMAN

NURSING

**Şanlıurfa
2024**



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Thesis Supervisor: Prof. Dr. HÜLYA KARATAŞ**

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2024

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ABSTRACT

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NURSING**

**Thesis Supervisor: Prof. Dr. HÜLYA KARATAŞ
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This study was conducted to determine the knowledge and practices of pediatric nurses in Erbil, Iraq regarding breastfeeding. The study is a descriptive study. The sample of the study consisted of 70 nurses working in a pediatric hospital in Erbil. Data were obtained using a Descriptive Characteristics Questionnaire and a Breast Milk and Breastfeeding Information Form. The information form was prepared by the researchers in line with the World Health Organization's breastfeeding principles and the relevant literature. The form consists of 25 questions. Data were evaluated with t test and one-way ANOVA in SPSS program. It was found that 62.5% of the nurses had knowledge about breastfeeding, and the knowledge score of nurses with experience of working in neonatal intensive care was significantly higher than those without experience ($t=2.326$, $p<0.05$). In Iraq, 55.7% of nurses rated the breastfeeding status of mothers as inadequate. It is recommended that nurses and mothers should be trained about breastfeeding.

KEYWORDS: Nursing, children, Breastfeeding, breast milk, pediatric nursing

ÖZET

YÜKSEK LİSANS TEZİ

IRAK'TA ÇOCUK HEMŞİRELERİNİN EMZİRMeye İLİŞKİN BİLGİ VE UYGULAMALARI

Kawthar Ibrahim Othman OTHMAN

HARRAN ÜNİVERSİTESİ
SAĞLIK BİLİMLERİ ENSTİTÜSÜ
HEMŞİRELİK

Tez Danışmanı: Prof. Dr. HÜLYA KARATAŞ
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Bu çalışma, Irak'ın Erbil kentindeki pediatri hemşirelerinin emzirmeye ilişkin bilgi ve uygulamalarının belirlenmesi amacıyla yapılmıştır. Çalışma tanımlayıcı bir çalışmadır. Çalışmanın örneklemini Erbil'de çocuk hastanesinde çalışan 70 hemşire oluşturmuştur. Veriler, Tanımlayıcı Özellikler Soru Formu ve Anne Sütü ve Emzirmeye İlişkin Bilgi Formu kullanılarak elde edilmiştir. Bilgi formu, Dünya Sağlık Örgütü'nün emzirme ilkeleri ve ilgili literatür doğrultusunda araştırmacılar tarafından hazırlanmıştır. Form 25 sorudan oluşmaktadır. Veriler, SPSS programında t testi ve tek yönlü ANOVA ile değerlendirilmiştir. Hemşirelerin %62.5'inin emzirme hakkında bilgi sahibi olduğu, yenidoğan yoğun bakımda çalışma deneyimi olan hemşirelerin bilgi puanı çalışmayanlara göre anlamlı olarak daha yüksek bulunmuştur ($t=2.326$, $p<0.05$). Hemşirelerin %55.7'si Irak'ta annelerin bebeklerine anne sütü verme durumunu yetersiz olarak değerlendirmiştir. Emzirme konusunda hemşirelere ve annelere eğitim verilmesi önerilmektedir.

ANAHTAR KELİMELEER: Hemşirelik, çocuk, Emzirme, anne sütü, çocuk hemşireliği

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ABBREVIATIONS

CDC : Centers For Disease Control And Prevention

UNICEF : United Nations International Childrens's Emergency Fund (Birleşmiş Milletler Uluslararası Çocuklara Yardım Fonu)

WHO : World Health Organization

1. INTRODUCTION

Breastfeeding is a method used for feeding an infant with natural breast milk directly from female mammary glands rather than using manufactured infant formula from a bottle or other containers (Awatef et al., 2010). Breastfeeding is the best approach to provide for the needs of an infant's physiological and psychological requirements (Subbiah, 2003). World Health Organization's definition of breastfeeding pointed out that breastfeeding is the normal method to provide all of the nutrients that infants need for healthy growth and development rather than maintaining all biological activities (WHO, 2013).

Human breast milk is exhibited as the healthiest source of milk for babies under modern healthcare goals (Picciano, 2001). Human breast milk is the most specific reliable for human babies and it is ideal for infant feeding it contains all necessary nutrients, antibodies, minerals, vitamins, and other factors important for growth and development which mark it as a distinguished and perfect food for babies beginning life as it is sustainable safe and available in every time and situation (Riordan, 2005). However, it does not provide suitable vitamin D amount which is required to build healthy bones and teeth in children. The amount of vitamin D in breast milk is determined by the vitamin D level of the mother, therefore, maintaining vitamin D status is very exclusive in the case of breastfed babies as it depends on whether their mothers' vitamin D level is normal as synthesized through sunlight as well as from food that mom can get (Butte et al, 2002). Breastfeeding has been to be the most critical interference for reducing infant mortality and certifying optimal growth and development of children (Adams, 2017).

Strategies that are used to improve infant health and successful young child feeding are the key piece of the child survival and development regimes as seen in many nations and countries. This important cornerstone of breastfeeding to be successful should include the following criteria; Breastfeeding start within one hour of birth; Breastfeeding should be on-demand as often as the child need; Breastfeeding exclusively used for the first six months of life; Addition of other food sources is essential for complementary feeding after six months along with continued breastfeeding (WHO, 2013). Pediatrics American Academy recommendation comments clarified that breastfeeding provides extreme benefits for allover health, growth, and development. Many documents in various diversities ruled or compelled the use of breastfeeding for the advantages for infants, mother's health, families, and society when the use of human milk for infant feeding applied. These advantages

include many categories like general health, nutritional values, immunologic aspects, developmental behaviors, mental and psychological conditions, social situations, economic benefits, and environmental enhancement (Aliyu and Shehue, 2016).

Breastfeeding is a very central and focus point topic in the health education sector because of the many good results that can be gained for all family members like babies, mothers, and fathers, and communities in general. For example, the contents of breast milk provide the needed of all nutrition for babies, especially in the first six months, and boost the baby's immune system for a good level. Also, practicing the process of breastfeeding helps mothers to lose weight safely after pregnancy and stimulates the uterus to shrink and return to its previous condition before pregnancy. For these huge amounts of reasons assessing awareness and interest of knowledge for all mothers or girls seek to be so to regard breastfeeding will and clarify its needs and for the health planning process in our area and community.

2. PREVIOUS STUDIES

2.1. Breastfeeding and Breast Milk

2.1.1. Breast Milk

Breast milk provides immunologic protection against death from infectious diseases, such as diarrhea, respiratory infections, otitis media, pneumonia and meningitis (Littleton, 2002). Good nutrition during this period of rapid growth is vital to ensure that the infant develops both physically and mentally to the fullest potential (Kujur et al, 2016). Malnutrition has been responsible, directly or indirectly, for 60% of the 10.9 million deaths annually among children under five (WHO, 2003). In Iraq, infant mortality rate in the five years preceding 2006 was 35 per 1,000 live births and under-five mortality was 41 deaths per 1,000 live births for the same period, indicating that the majority of under-five deaths (85%) are infant deaths. In 2004 neonatal mortality rate was 63 deaths per 1,000 live births, while infant mortality rate in 2007 was 36 deaths per 1,000 live births (UNICEF, 2008). In Erbil infant mortality rate was 42 deaths per 1,000 live births. Over one-fifth (21%) of children are severely or moderately stunted (Shaker et al., 2013). Nutrition interventions have been acknowledged as being among the most effective preventive actions for reducing mortality among children under the age of five years. Of these actions, exclusive breastfeeding ranks first; being estimated as having the potential to prevent 13% of all deaths in this age group while complementary feeding, water sanitation and hygiene would reduce 6% and 3% respectively (Khadijanimo, 2021).

2.1.2. Breastfeeding

According to the World Health Organization (WHO) and United Nations Children Education Fund (UNICEF) references on breastfeeding are as follows: start of breastfeeding within the first hour after birth; Exclusive Breastfeeding (EBF) for the first six months; and nonstop breastfeeding for 24 months or more, together with harmless, nutritionally adequate, age appropriate, responsive matching feeding starting from the sixth month Worldwide (90%) reportage of coverage of exclusive breast feeding reported to avoid in low and middle income countries approximately 13 % of all deaths among under five year-age (Ibrahim et al., 2022). Internationally, sub-optimal breastfeeding still accounts for an assessed 1.4 million deaths in children under five years annually. On average, only around 45% of infants under 6 months are exclusively breastfed globally, and only 38% of children less than six months of age in the developing world are exclusively breastfed and just 39% of those 20-23 months old benefit from the practice of continued breastfeeding, The advanced of

international breastfeeding rates in the last decade about 39 percent of children <6 months of age in the developing world are exclusively breastfed (WHO, 2009). According to the general characteristics of early breast-feeding, it is exposed higher in central and southern Iraq, the highest percentage than in the Kurdistan region and also higher in rural compared to urban areas is higher when natural childbirth compared to caesarean birth and is reduced with high education all mothers . While the number of children receiving the smallest amount of food diversity increases with the increase in the education mothers the old rages, especially 18 months and above, as well as in urban associated with the countryside (Khalid et al., 2012). Many studies conducted on EBF in the last years have shown progressive improvement in maternal knowledge in EBF among mothers. A study by Oche et al recorded a rate of 54 % of knowledge in EBF among mothers (Oche et al., 2011). A study conducted by Mogre et al. among lactating mothers in rural areas in Ghana noted that 74 % of mothers who participated in the study had general knowledge in exclusive breastfeeding (Mogre et al., 2016). Also, a study conducted by Ghana by Dun-Dery & Laar found that nearly all mothers (98%) who participate in that study had adequate knowledge about EBF (Dun-Dery & Laar, 2016). Information on EBF according to mothers was acquired through their healthcare providers through antenatal care programs (Mogre et al., 2016).

After birth the health of the baby depends upon the nurturing practice adopted by the family. The ideal food for the young infant is human milk which has the specific characteristics that match the growing infants' nutritional requirements. Breastfeeding is a socially constructed and controlled practice (Chaudhary et al., 2011). It is often presented as a natural practice, sadly corrupted and curtailed by cultures. The Innocenti Declaration of 1990 August, Florence, Italy presents breastfeeding as best practice for mothers and babies. As a global goal for optimal maternal and child health and nutrition, all women should be enabled to practice exclusive breastfeeding, and all infants should be fed exclusively on breast milk, from birth to 6 month of age (March 2001) (Khassawneh et al., 2005). Breastfeeding is nearly universal in Nepal and the median duration of breast-feeding is long (33 months) (Paudel, 2022). But on the contrary to the recommendations of WHO only 2/ 3 rd of children less than 6 months of age are exclusively breast fed (Khassawneh et al., 2005). Numerous barriers to breastfeeding like lack of accurate information and lack of appropriate knowledge among the population in general have been identified. According to a published survey⁴ , a major barrier to successful inhospital breast-feeding is inconsistency in information and nursery practices related to breastfeeding management. This study was carried out based on the fact that

knowledge of pediatric nurses and their appropriate knowledge regarding breastfeeding is limited.

2.1.3. Benefits of Breastfeeding

Numerous studies have confirmed the benefits of breastfeeding, with EBF being even more beneficial than partial breastfeeding (Ramakrishnan et al., 2014)[25]. The benefits of breastfeeding include nutrition and immunological protection for the infant and numerous benefits for the mother. Breast milk contains all the necessary nutrients in the exact quantity that is needed by an infant during the first 6 months of life (Alamirew et al., 2017). Other benefits for the infant include a reduced prevalence of otitis media, asthma, respiratory tract infections, bronchiolitis, gastroenteritis, atopic dermatitis, inflammatory bowel disease, obesity, type 1 and 2 diabetes, necrotising enterocolitis, leukemia, and mortality (sudden infant death syndrome) (Hansenm, 2015). In addition, breast milk promotes sensory and cognitive development, improved school attendance and a higher intelligence quotient (IQ). Breastfeeding establishes and promotes a tremendous bonding between mother and baby, having a lifelong impact on both (Archer et al., 2017). For mothers, breastfeeding is associated with decreased risk of breast and ovarian cancer, hypertension, diabetes, osteoporosis and heart attack. Mothers who never initiate breastfeeding or who wean early, have an increased risk of postpartum depression. Thus, breastfeeding should not only be regarded as purely a lifestyle choice, but rather a critical health issue and therefore should receive adequate support, promotion, protection and endorsement. breastfeeding has been shown to provide multiple health benefits for both infants and mothers (Handa & Schanler, 2013).

According to the Centers for Disease Control and Prevention (CDC), breastfeeding rates in the United States range from 23.9% to 70.4% at 6 months, and 11.3% to 44.9% at 1 year. Mississippi has the lowest rates of breastfeeding of all states at 6 months (23.9%), and at 12 months (11.3%). The breastfeeding initiation rate in Mississippi is 52.0%, which is far from the Healthy People 2020 objective of 81.9% initiation rate (CDC). In 1991, the World Health Organization (WHO) recognized the importance of increasing breastfeeding rates worldwide and launched the Baby-Friendly Hospital Initiative (BFHI) (Garth et al., 2016).

Numerous studies have highlighted the importance of pediatric nurses' understanding of breastfeeding physiology and its benefits. A study by Brown et al (Adams et al., 2019). found that pediatric nurses demonstrated a solid

understanding of breastfeeding anatomy, milk production, and infant feeding cues. Similarly, a review by Smith and Moore (Lojander et al., 2022), emphasized the role of pediatric nurses in educating mothers about the nutritional composition of breast milk, the importance of exclusive breastfeeding for the first six months of life, and the benefits of breastfeeding for infant growth and development., Turck.D conducted a study on the health benefits of breast feeding for both mother and child .The study revealed that breast milk contains hormones, growth factors, cytokines, cells etc and offers many advantages over cow's milk or soya protein and infant formulae. Breastfeeding allows normal growth until at least 6 months. Breastfeeding is associated with slightly enhanced performance on tests of cognitive development. Exclusive breastfeeding for at least 3 months is associated with a lower incidence and severity of diarrhea, otitis media and respiratory infection. Very few medications contraindicate breastfeeding breast feeding is also associated with a decreased risk of breast and ovarian cancer in the premenopausal period and of hip fractures and osteoporosis in the postmenopausal period (Saleheen et al., 2021).

2.1.4. Factors Influencing Exclusive Breastfeeding

Exclusive breastfeeding is defined as an infant receiving only breast milk as his/her sole source of nutrition; no other liquids, solids, or water, including commercial infant formula, are given (World Health Organizationm 2019). However, exclusive breastfeeding can be affected by multiple factors. These include unique maternal, infant, or societal issues or conditions that directly affect the maintenance of exclusive breastfeeding. Maternal factors include lack of knowledge about or insufficient experience with breastfeeding or lack of maternal desire to exclusively feed breast milk (Brown, 2014), medical or surgical conditions that preclude breastfeeding (Dozier et al., 2013), or oxytocin use and cesarean birth (Hobbs et al., 2016). Infant factors may include prematurity or late preterm birth (Gianni et al., 2016), feeding issues such as tongue-tie, arched palate, receding chin, or dysfunctional suck (Quinn & Tanis, 2020), or current treatment regimens associated with correcting newborn jaundice (Philipp, 2010). Furthermore, societal factors, including a woman's lack of family or social support, family disapproval of exclusive breastfeeding, or a woman's need to return to work with an inability to sustain adequate breastfeeding, have also been implicated as significant causes, alone or in combination, for why exclusive breastfeeding rates remain poor in the United States (Marinelli et al., 2013).

2.1.5. Breastfeeding in Iraq

In Iraq, breastfeeding was almost universal and was considered the normal way to feed infants and young children (Abdul Ameer et al., 2008). Iraq is one of the seven countries where 100% of facilities have been designated as BFHI (Philipp, 2010). In Iraq, while more than 9 out of 10 children were breastfed at some point in their young lives, only 25.8 per cent (Saleheen et al., 2021), of children were 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 per cent (Babayan, 2023). However, there is limited information on how many Iraqi mothers practice exclusive breastfeeding for six months. A study reports that Iraqi mothers have limited knowledge about how long exclusive breastfeeding should last and when the introduction of complementary foods should occur (Abdul Ameer et al., 2008). The reason for this could be that the knowledge among medical professionals in Iraq on breastfeeding was limited (Al Nassaj et al., 2004). Another study shows that the prevalence of exclusive breastfeeding was low and that early introduction of complementary food is common among Arab mothers (Muhsen et al., 2011). Most Iraqis belong to the religion Islam, and the holy book of Islam, the Quran, recommends mothers to breastfeed their infant for two years if possible (Shaikh & Ahmed, 2006).

2.2. Role of Nurses in Breastfeeding

Nurses play an essential role in providing accurate information about breastfeeding and support to the mother and their partner. The nurse often assists with breastfeeding initially after birth and ensures latching. The nurse helps encourage and support frequent maternal-infant contact to promote effective breastfeeding. The nurse's role in supporting breastfeeding varies in the time and place of care. However, the same goals are present: to help the mother initiate breastfeeding, enjoy it, and ensure the baby gets the optimum nutrition needed for growth and development (Pack et al., 2024).

Nurse practitioners (NPs) place a high value on health promotion and teaching in their practices. The ability to promote and support breastfeeding may be one of the most beneficial activities they can perform because breast milk is widely acknowledged as the best nutrition for the human infant (Fulhan et al., 2003). Indeed, the Healthy People 2010 objectives for the United States are to have 75% of infants breastfed at birth and 50% breastfed until 6 months of age (Dannenberg, 2016), if these goals are to be met, there is a great need for experienced and knowledgeable clinicians to assist breastfeeding mothers. There is a limited body of

literature relative to the knowledge and attitudes of nurse practitioners toward breastfeeding. Given the health value of breastfeeding for the mother/baby dyad and the number of women who are cared for by NPs, it is important to assess the knowledge, experience, and attitudes that these professionals bring to the care setting.

Both healthcare services (especially antenatal care), and HCW (Nurse) s play a key role in the initiation, duration and support of breastfeeding. Supportive breastfeeding policies in healthcare facilities also play a crucial role in the initiation and duration of breastfeeding (de Graft-Johnson et al., 2017). Changes in hospital policies such as implementation of the BFHI, and the encouragement and support of breastfeeding protocols, have been reported to improve breastfeeding initiation rates in hospitals (Kimani-Murage et al., 2017). The first national Maternity Practices in Infant Nutrition and Care Survey was undertaken by the CDC in 2007 and showed that many facilities provide maternity care that is not evidence-based and may have a negative impact on breastfeeding (Bernaix et al., 2010). Support and encouragement from well-trained HCWs can positively influence breastfeeding initiation and duration and therefore how infants are fed (Bernaix et al., 2010). It is important for all HCWs, including doctors, nurses, midwives, obstetricians, and paediatricians, to serve as advocates and supporters for breastfeeding, as mothers want support not only from midwives and public health nurses but also other health care professionals (Whelan & Kearney, 2015). Numerous studies have reported that the most significant determining factor for a mother to breastfeed or not, was the quality of the breastfeeding instruction, support and encouragement received from HCWs (Bernaix et al., 2010). Breastfeeding is a learned skill and mothers look to HCWs as a source of knowledge, trust their advice and depend on skilled support during the early postnatal period (Whelan & Kearney, 2015). According to Mass (2015), women who receive negative breastfeeding messages from HCWs are more likely to discontinue breastfeeding. Seventy percent of mothers who perceived their physician as supporting breastfeeding were still breastfeeding at 6 weeks compared with 54% who perceived that the physician had no preference and 9% who believed their physician favoured formula milk (Mass, 2015). One of the main causes of early weaning is the lack of accurate information and support from HCWs and their recommendation to wean (Almeida et al., 2015). The influence of the HCWs on breastfeeding success cannot be underestimated, as the effect of uninformed or misinformed advice and support given to breastfeeding mothers can have a negative effect on breastfeeding success (Mass, 2015). Inaccurate or inappropriate advice from HCWs, and lack of access to HCWs adequately trained in lactation management, are factors that

contribute to failure to achieve successful lactation management (Mirghani et al., 2020). In retrospect, many mothers feel that healthcare services and HCWs failed them at a time when they needed breastfeeding support and assistance (Almeida et al., 2015). Bernaix et al. (2010) have reported that the knowledge of the HCWs is the most important influencing factor in their support given to breastfeeding. Knowledge should be accurate and adequate for them to protect, promote and support breastfeeding (Spear, 2004). Over the years, a lack of breastfeeding knowledge among a variety of HCWs, including general practitioners, paediatricians, obstetricians, midwives and nurses has been confirmed in numerous studies, despite numerous calls to action for improving breastfeeding education of HCWs (Archer et al., 2017). Lack of knowledge about breastfeeding is thus a major barrier to breastfeeding support (Adeyemi et al., 2012). Mass (2015) reported that 55% of HCWs in the US believed that formula milk is an acceptable feeding option and will not harm the infant. In the same study, physicians reported that they are hindered by their own inadequate knowledge (Mass, 2015). A survey done in 1995 in the US was repeated in 2005 and found the same results, namely that 45% of paediatricians believed that breastfeeding and formula feeding were equally acceptable infant feeding methods (Handa & Schanler, 2013). Another study conducted by Spear (2004) in the US on the knowledge of nurses about breastfeeding, reported poor knowledge of the nutritional value of breast milk among nurses. A large percentage (41.9%) believed that breastmilk and formula milk had the same nutritional value (Spear, 2004). Numerous other studies have confirmed that the breastfeeding knowledge of HCWs is often inadequate (Spear, 2004). A decrease in breastfeeding knowledge amongst HCWs, including midwives, since their initial education has been reported and ascribed to a lack of participation in breastfeeding education as part of their continuing professional development (Creedy et al., 2008). In the African context, a recent study conducted by de Graft-Johnson et al. (2017) in 6 Sub-Saharan African countries in a total of 643 health facilities, including hospitals and health centres, to establish HCWs knowledge about the 10 Steps to Successful Breastfeeding, found that only 50% of the HCWs were able to report at least one step. 27 Gaps in knowledge were observed in all countries (de Graft-Johnson et al., 2017). In the 1990's, a lack of knowledge was reported among paediatricians, family physicians, obstetricians, and residents in their field in the management of mastitis, poor milk supply and poor weight gain in infants (de Graft-Johnson et al., 2017). In a 2009 group evaluation of the knowledge of breastfeeding of paediatricians and obstetricians, it was stated that the physician did not feel comfortable with breastfeeding and did not have adequate knowledge about breastfeeding (de Graft-Johnson et al., 2017). In a study conducted by Samuel et al. (2016) in Nigeria, it was

reported that only 4.8% of HCWs could list 3 advantages of breastfeeding for the baby, only 29.8% mentioned 3 advantages of breastfeeding for the mother, 17.7% could list 3 breastfeeding difficulties and only 3.2% could mention 3 ways of managing these difficulties (Samuel et al., 2016). In the same study, only 12.9% stated that mothers infected with HIV should breastfeed and 55.6% believed that the infant should receive complementary foods whenever the infant is ready. Although general EBF knowledge of HCWs was adequate, in-depth knowledge of specific aspects was inadequate (Samuel et al., 2016). Another study undertaken in Nigeria also reported that the knowledge of HCWs about breastfeeding was lacking (Adeyemi et al., 2012). A study conducted to assess HCWs breastfeeding knowledge in a high HIV prevalence area in SA revealed outdated knowledge that was not in line with the WHO current recommendations at that time (Robb et al., 2020). Both breastfeeding mothers and healthcare providers acknowledge the importance of healthcare provider involvement in a dyad's breastfeeding journey. Health facilities and community health workers are integral to maintaining continuity of care of the breastfeeding dyad (Hernández-Cordero & Pérez-Escamilla, 2022). Nurses believe providing breastfeeding education to mothers is an integral part of their scope of practice; 99.1% of participants surveyed indicated providing breastfeeding support to mothers falls within their responsibility (Dubik et al., 2021). Support from healthcare professionals was repeatedly cited by mothers as a protective factor for breastfeeding duration (Ringo & Gephart, 2022).

2.3. Nurse Support to the mothers

Successful breastfeeding depends, in part, on the support of the nursing staff directly caring for the breastfeeding dyad. Traditionally, it has been the role of obstetrical nurses to support mothers' initiation of breastfeeding. However, with early discharge from the hospital, many infants are admitted to pediatric facilities within the first two to four weeks of life with problems, such as dehydration, excessive weight loss, failure to thrive, or hyperbilirubinemia (Spatz & Goldschmidt, 2006). Frequently, these admissions are a direct result of a mother not fully understanding how to breastfeed her infant (Naramore, 2007). An infant's readmission to a pediatric medical facility should not be the cause of discontinuation of breastfeeding (Watkins & Dodgson, 2010). Breastfeeding duration has been recognized to decline after discharge from the birth hospital (Lawrence, 2021), with the most significant decline occurring within the first two weeks postpartum (Bernaix et al., 2010). Therefore, it becomes the role of the pediatric nurse to safeguard continuation and exclusivity of breastfeeding while the infant is admitted to a

pediatric medical center. Several factors can influence the initiation, duration, and exclusivity of successful breastfeeding including provision of accurate information and support to breastfeeding mothers by healthcare providers during the early weeks of breastfeeding establishment (Bernaix et al., 2010). Inconsistent or inaccurate information and lack of support by healthcare professionals are reported factors affecting breastfeeding failure (Bernaix et al., 2010). Understanding what factors influences pediatric nurses' intent to provide breastfeeding support when infants are admitted to a pediatric hospital can be vital to the success (or failure) of a dyad's future breastfeeding experience. Several studies suggest that nurses' knowledge and attitudes predict their intention to provide breastfeeding support (Bernaix et al., 2010). Additional research findings have proposed that nurses who have personal breastfeeding experience, or attain 1. Tracy.Brewer@Wright.edu © 2012 United States Lactation Consultant Association 65 higher education, such as a bachelor's or graduate degree, are more likely to provide support and encouragement to breastfeeding dyads (Duijts et al., 2009). While most nurses receive some breastfeeding instruction in nursing school (Dodgson & Tarrant, 2007) few students have any clinical experience providing breastfeeding support. Mothers look to nurses as the "experts," yet pediatric nurses may only be able to rely on what they learned about breastfeeding during their nursing education, or through personal experience, as they provide breastfeeding support, which could result in inconsistent and/or inaccurate breastfeeding information. However, little is known about pediatric nurses' knowledge of and attitudes towards breastfeeding and providing breastfeeding support in pediatric medical centers (Narramore, 2007), or the effectiveness of educational breastfeeding programs with this population of nurses. Therefore, it is first important to understand pediatric nurses' baseline knowledge and attitudes regarding the provision of breastfeeding support. The purpose of this study was to determine knowledge and attitudes of pediatric nurses regarding the provision of support to breastfeeding dyads when the infant is admitted to a pediatric hospital. A second purpose explored the possible relationships between pediatric nurses' knowledge and attitudes toward providing breastfeeding support and select demographic variables, such as years of post-high school education and prior personal breastfeeding experience.

2.4. Inadequate training of Nurse (healthcare worker)s

Despite the important influence of HCWs, studies show that HCWs are often inadequately trained and educated to promote breastfeeding (Almeida et al., 2015). Various specialties, including obstetricians, paediatricians, general practitioners and

nurses/midwives report a lack in breastfeeding education, skills, experience and confidence to support breastfeeding parents (Pollard, 2017). In the US, 73% of paediatricians reported that they had not received adequate training to support breastfeeding mothers (Cockerham et al., 2012). Breastfeeding education of HCWs varies widely in terms of the amount of training received, scope, orientation and philosophical model applied (Brittin, 2015). Inadequate training and education of HCWs are a major and concerning barrier to successful initiation and continuation of breastfeeding. Research has identified a clear need for training of all HCWs about breastfeeding, according to their specific professional requirements for knowledge and skills to support breastfeeding (Whelan & Kearney, 2015). UNICEF states that training of HCWs can reduce inconsistencies of practice among HCWs, and also encourage EBF and duration of breastfeeding (Pollard, 2017). The need for better education is highlighted in the Surgeon General's 2011 Call to Action to Support Breastfeeding that recommends breastfeeding education for all HCWs caring for mothers and infants (Deloian et al., 2015). Better training of HCWs during undergraduate studies as well as during in-service training is thus needed (Hennop, 2020).

2.5. Healthcare Providers Lack Sufficient Breastfeeding Knowledge

Additional breastfeeding education is needed to prepare the nurse to better support the breastfeeding journey (Prokop et al., 2021). Healthcare providers in general were undereducated about evidence-based breastfeeding and were not prepared to assist the breastfeeding dyad with the prevention or treatment of common obstacles to breastfeeding. One study specifically aimed at assessing breastfeeding knowledge of inpatient pediatric nurses found an average breastfeeding knowledge score of 26.8 (6.4) out of 50 total points (Farrag et al., 2019). The lack of breastfeeding knowledge among pediatric nurses stemmed from both insufficient undergraduate breastfeeding education and a paucity of continuing education planning (Farrag et al., 2019). Many new-graduate nurses received little to no breastfeeding training as part of their pre-licensure education (Dubik et al., 2021). Nurses were dissatisfied with the extent of breastfeeding education they received in nursing school, and many reported relying on personal breastfeeding experience when counseling the breastfeeding dyad (Dubik et al., 2021). New-graduate nurses attributed this gap in breastfeeding knowledge as the primary contributor to the distress they felt during situations in which they were expected to provide breastfeeding support to mothers (Prokop et al., 2021). However, even nurses with prelicensure breastfeeding education may require continuing education to sustain

adequate ability and knowledge to support the breastfeeding dyad (Farrag et al., 2019). Years of nursing experience did not correlate with breastfeeding knowledge, indicating continuing education as a necessary facet of improving breastfeeding support (Farrag et al., 2019). Approximately three quarters of nurses desired additional breastfeeding education to support their care of the breastfeeding dyad (Dubik et al., 2021).

2.6. Rate of exclusive breast feeding

Ross laboratories. gave a survey report in USA the report says that the rate of exclusive breast feeding has Substantial increase from 14.1% in 1980 and in 1990 it is 33.7% and in 1992 it increases to 38.4% and report says that rate of still birth decreased as the exclusive breast feeding rate increases. And this change is due to the positive attitude of mothers towards exclusive breast feeding (Creswell, 2016).

Onavade and Abiona conducted a study on the first six months growth and illness of exclusively and nonexclusively fed infants in the Urban Comprehensive Health Centre (UCHC) in Nigeria. 352 mothers and their normal birth weight babies, weighing 2.500kg or more and aged less than 14 days were selected. They found that at six months 76.5% were exclusively breast-fed, 13.1% were started on complementary feeding between the ages of four and six months while 10.4% commenced complementary feeding before the age of four months. The mean weight of children who fed with complimentary diet before six months was less than that of those children fed exclusively for six months. They also reported fewer symptoms and had fewer illness episodes compared to those who started complimentary feeding early. They concluded that exclusively breastfed children thrive better than nonexclusively fed children in terms of growth and development and health status (Abdul Ameer et al., 2008).

3. MATERIALS AND METHODS

3.1. Purpose and Type of Research

This research, which was conducted to examine the experiences of pediatric nurses regarding knowledge and practice of breastfeeding, was conducted in a descriptive, comparative and cross-sectional study.

3.2. Research Question

1. What is the level of knowledge of nurses working in pediatric hospitals in Iraq about breastfeeding?
2. Which factors affect the level of knowledge about breastfeeding among nurses working in a pediatric hospital in Iraq?

3.3. Place and Date of Research

The study is a descriptive comparative and cross-sectional study. This study was conducted with 70 Pediatric Nurse in Erbil province between 01 February 2023 and 20 June 2023.

3.4. Sampling Method

The research was conducted to knowledge and practice of pediatric nurses in Erbil city in Iraq, regarding breastfeeding in Rapareen Hospital for pediatric, bed number 180 beds with 100 nurses. There is only one pediatric hospital in Erbil, so it was aimed to reach all working nurses. The sample consisted of 70 nurses who were not on leave on the day of data collection and who agreed to participate in the study.

3.5. Data Collection Method

Data were obtained using a Descriptive Characteristics Questionnaire (Appendix-1) and a Breast Milk and Breastfeeding Information Form (Appendix -2). The descriptive characteristics questionnaire consisted of 12 questions about the nurses' age, gender, years of education, having children, whether they received breast milk during childhood, etc. The information form was prepared by the researchers in line with the World Health Organization's breastfeeding principles and the relevant

literature (World Health Organization, 2002). The form consists of 25 questions. The form is scored as 1 for correct answers and 0 for incorrect answers. A minimum score of 0 and a maximum score of 25 are received from this section. As the score increases, the knowledge of nurses increases. Data collection forms were completed by face-to-face interview method. The purpose of the study was explained to the nurses and they were informed that they would participate according to the principle of voluntary participation. All nurses working in the hospital on the data collection dates agreed to fill out the questionnaire. The data collection period lasted 15-20 minutes.

3.6. Data analysis

For the questions in the information form, correct=1 point and incorrect=0 points. The mean score was calculated and analyzed according to independent variables. The normal distribution was evaluated with Kolmogorov-Smirnov, skewness and kurtosis. Data were evaluated with t test and one-way ANOVA in SPSS program. In this study, the variables in the descriptive characteristics form were examined as independent variables and the knowledge score was evaluated as the dependent variable. The significance level was accepted as 0.05.

3.7. Limitations

It is limited to the data obtained from pediatric nurses who accepted the study during the time period in which the research was conducted, available only one pediatric Hospital and collect data only in Erbil city.

3.8. Ethic

Before starting the research, necessary written permissions were obtained from General Directorate of health – Hawler Clinical Research Ethics Committee (Appendix -3). After the Pediatric nurses were informed about the purpose of the study, the confidentiality of the answers, and where and how the data would be used, 70 pediatric nurse who volunteered were included in the sample. All nurses read all question and understand of it then answered all of it.

4. FINDINGS

In the study, was conducted with 70 Pediatric Nurse in Erbil province. The ages of Pediatric Nurses between 22 and 60 years from both gender. Regarding their marital status, all nurses are married. When their educational status is evaluated, two nurses are high school graduates, theirtee two nurses are institute graduates, and theirty six nurses are university gratuated.

Table 4.1. Descriptive Statistics of Knowledge

Descriptive		Mean Knowledge	
		Statistic	Std. Error
Mean Score		0.625	0.017
95% Confidence Interval for Mean	Lower Bound	0.592	
	Upper Bound	0.659	
5% Trimmed Mean		0.624	
Median		0.62	
Variance		0.02	
Std. Deviation		0.141	
Minimum		0.36	
Maximum		0.92	
Range		0.56	
Interquartile Range		0.24	
Skewness		0.148	0.287
Kurtosis		-0.916	0.566

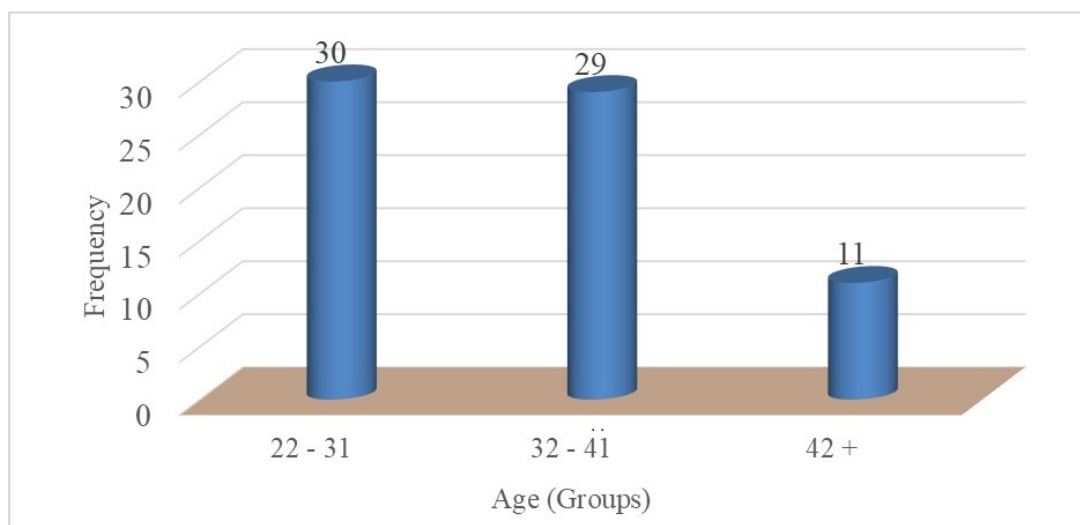


Figure 4.1. Bar chart illustrating different age groups

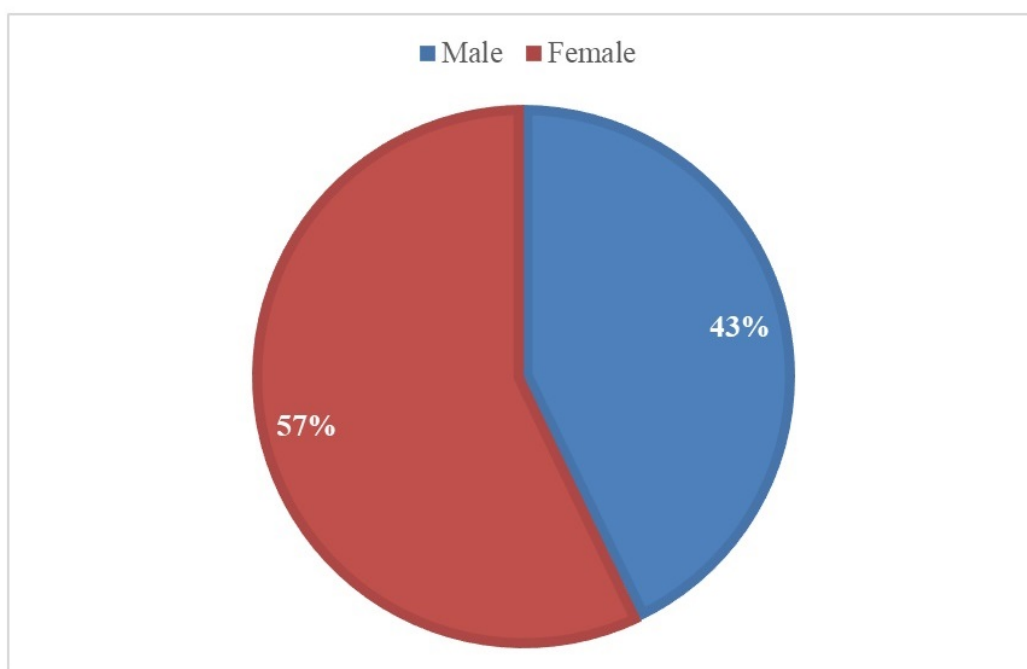


Figure 4.2. Pie-chart illustrating Genders

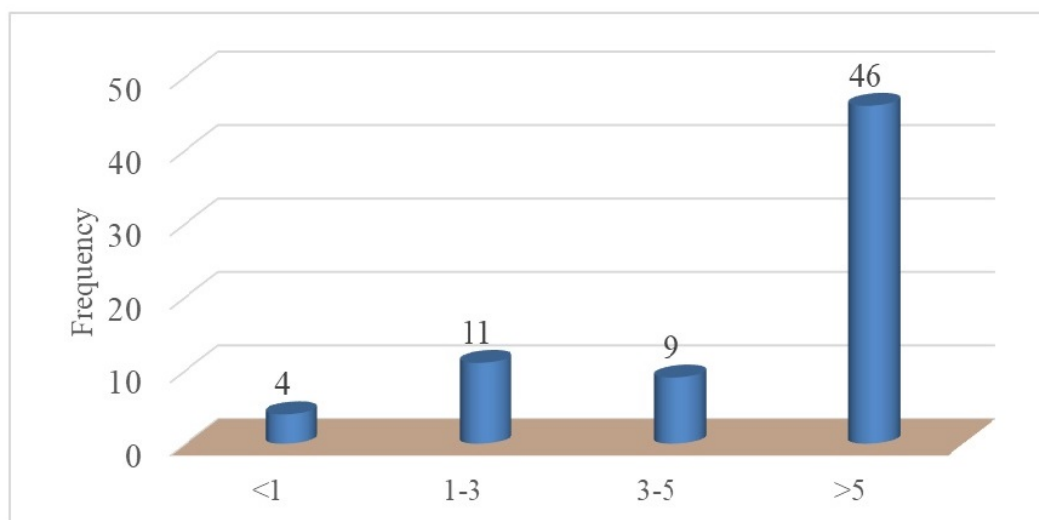


Figure 4.3. Bar chart illustrating answer of (How many years have you been working as a nurse?)

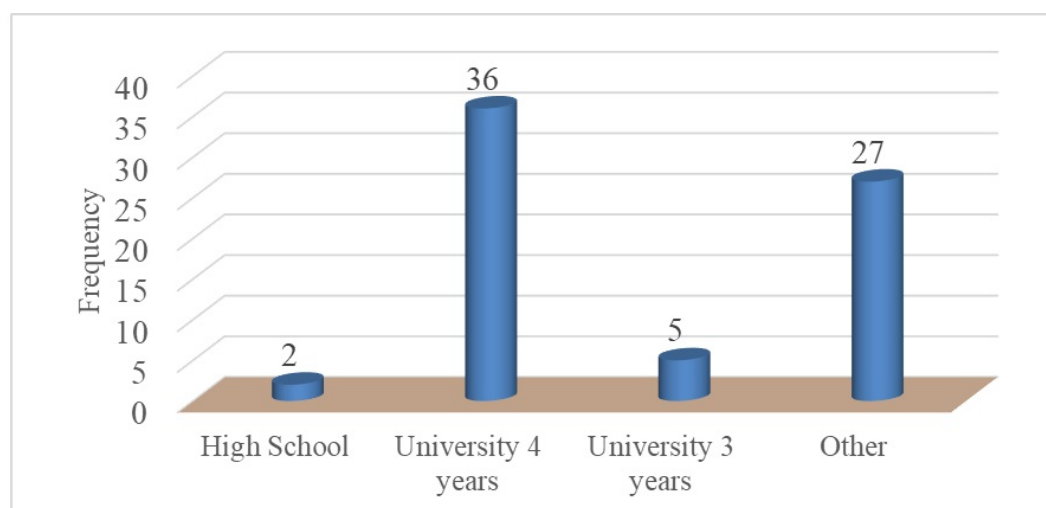


Figure 4.4. Bar chart illustrating answer of (Which nursing school did you graduate from?)

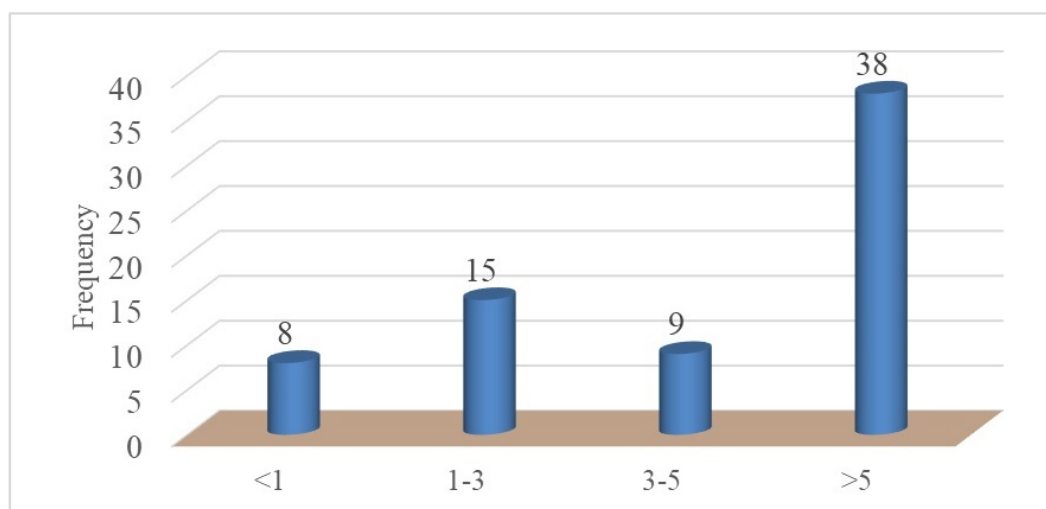


Figure 4.5. Bar chart illustrating answer of (How many years have you been working in the pediatric clinic?)

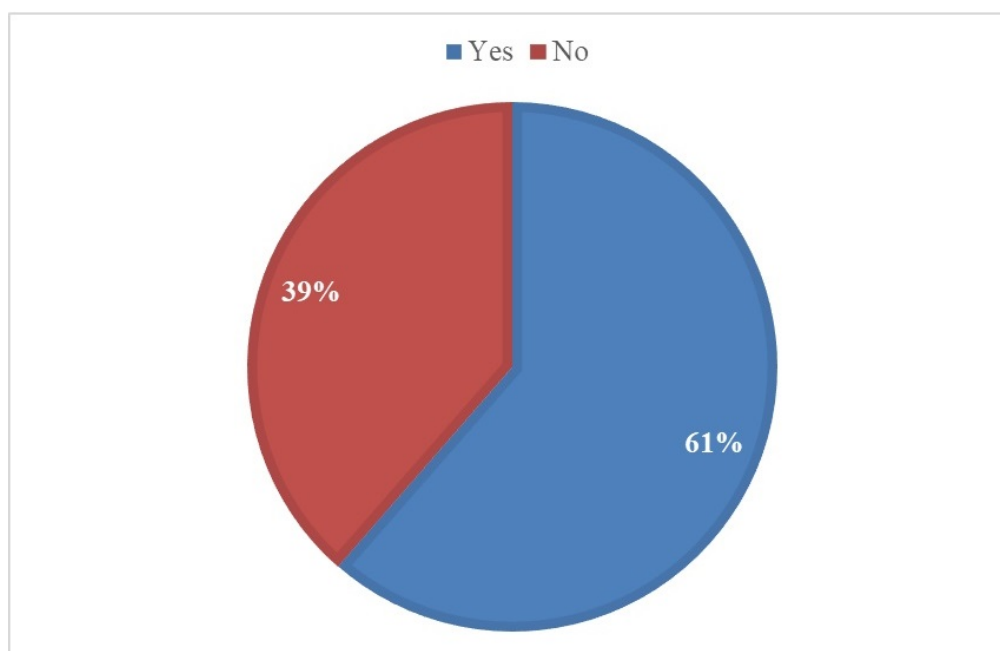


Figure 4.6. Pie- chart illustrating answer of (Do you have any children?)

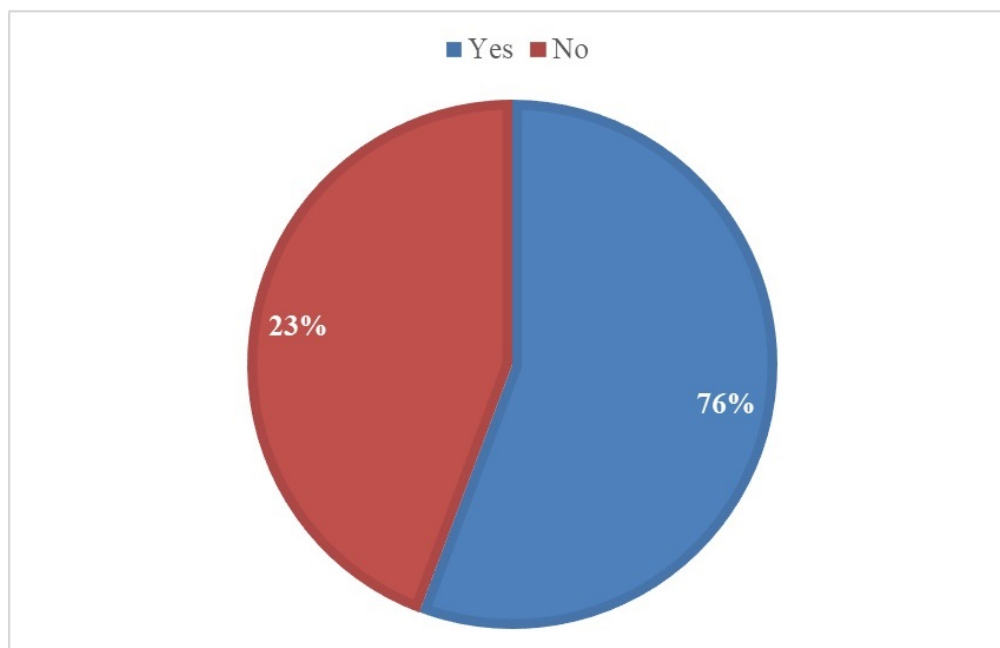


Figure 4.7. Pie- chart illustrating answer of (Have you breastfed your own child (if you have a child)?)

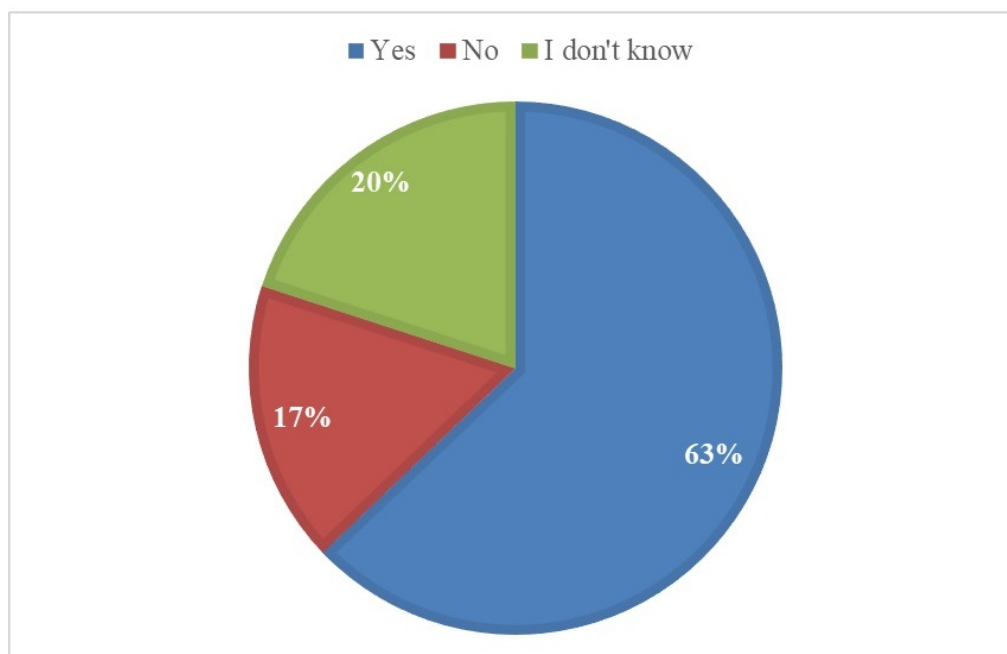


Figure 4.8. Pie- chart illustrating answer of (Were you breastfed as a child?)

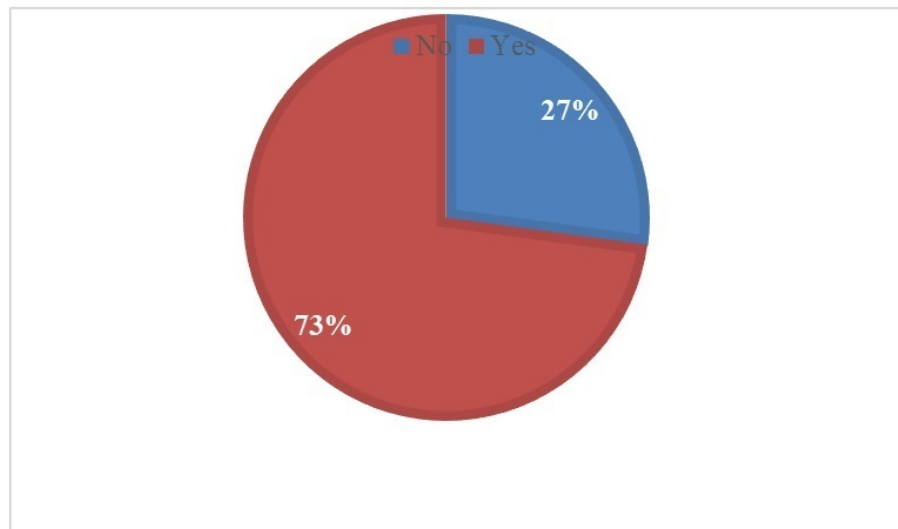


Figure 4.9. Pie- chart illustrating answer of (Do you think that information about breastfeeding was sufficiently included in the syllabus during your education before graduation?)

The results depict the demographic and professional profile of nurses working in a pediatric clinic in Iraq. The majority of respondents fell within the age groups of 22-31 and 32-41, comprising 42.9% and 41.4% respectively. Female nurses represented the majority at 57.1%, while males constituted 42.9%. Regarding years of nursing experience, a significant portion (65.7%) had over five years of experience. The majority of respondents graduated from a university (51.4%), followed by an institute (45.7%), and a smaller proportion from high school (2.9%). In terms of tenure at the pediatric clinic, over half of the nurses (54.3%) had worked for over five years. Additionally, a considerable portion of respondents were parents (61.4%), with the majority having breastfed their own children (76.7%). Most nurses (72.9%) believed that breastfeeding information was adequately included in their pre-graduation education syllabus. A significant proportion (54.3%) had practiced in newborn intensive care units or newborn clinics during their education, and nearly half (48.6%) had received training on breastfeeding after graduation. When asked about breastfeeding practices in Iraq, opinions were divided, with 44.3% believing it was sufficient and 55.7% indicating it was not enough.

Table 4.2. Breastfeeding Knowledge and Practices

Knowledge	Yes		No	
	Freq	%	Freq	%
1. The infant should be first breastfed after birth	61	87	9	13
2. Breastfeeding should be started within the first half hour after birth	58	83	12	17
3. During exclusive breastfeeding, the infant should be breastfed whenever the infant asks for it	26	37	44	63
4. Breastfed infants should not be given a pacifier	40	57	30	43
5. When exclusively breastfeeding, infant does not need to be given water	46	66	24	34
6. The infants should be only breastfed for the first six months, and additional foods should be started after the 6th month	58	83	12	17
7. If the infant urinates at least 6 diapers a day, it shows that the breast milk is sufficient	43	61	27	39
8. A breastfed infant gaining at least 500 grams per month indicates that the infant is sufficiently nourished	27	39	43	61
9. It is not correct to use a baby bottle with breastfeeding for infants	25	36	45	64
10. Breastfeeding should be continued for at least two years and beyond	61	87	9	13
11. Infant formula is not equivalent to breast milk	45	64	25	36
12. HAMLET protein in breast milk is protective against cancers	38	54	32	46
13. Breastfeeding protects the infant from diseases both in the short and long term	59	84	11	16
14. The first priority in infant feeding is exclusive breastfeeding, followed by artificial breastfeeding (spoon, cup, baby bottle), donor breastfeeding and finally the use of formulas	47	67	23	33
15. The mother must be taught how to express breast milk during breastfeeding	63	90	7	10
16. Breast milk protects the infant against mental illness	50	71	20	29
17. Breast milk can be stored at room temperature for 3 hours, in the refrigerator for 3 days and in the freezer for 3 months	35	50	35	50
18. Breast milk is both prebiotic and probiotic	50	71	20	29
19. Colostrum is the milk excreted from the breast in the first 5 days after birth	51	73	19	27
20. Infants should get both foremilk and hindmilk when sucking on the breast. The infant emptying the breast and letting go of the breast spontaneously indicates that the infant has received the hindmilk	25	36	45	64
21. High levels of long-chain fatty acids in breast milk are essential for brain and eye development	38	54	32	46
22. Preterm breast milk has higher protein, fat and sodium content than breast milk in the first weeks	42	60	28	40
23. The taste of breast milk varies according to the mother's food	39	56	31	44
24. Iron deficiency anemia is rare in breastfed infants in the first 6-8 months	30	43	40	57
25. Breastfed infants should not be given water in very hot weather	37	53	33	47

The following table summarizes responses from participants regarding various aspects of breastfeeding knowledge and practices.

Initial Breastfeeding: Majority (87.1%) of participants believe that infants should be first breastfed after birth.

Timeliness of Breastfeeding: 82.9% agree that breastfeeding should commence within the first half hour after birth.

Feeding Frequency: While 62.9% agree that infants should be breastfed whenever they ask for it during exclusive breastfeeding, a significant proportion (44%) disagrees.

Pacifier Use: A majority (57.1%) believes that breastfed infants should not be given pacifiers.

Water Supplementation: 65.7% agree that infants do not need water during exclusive breastfeeding, while 34.3% believe otherwise.

Introduction of Additional Foods: 82.9% agree that infants should be exclusively breastfed for the first six months before introducing additional foods.

Diaper Output as Indicator of Milk Sufficiency: Opinions are divided on whether six or more diapers a day indicate sufficient breast milk, with 61.4% agreeing.

Weight Gain as Indicator of Nourishment: 61.4% believe that a breastfed infant gaining at least 500 grams per month is sufficiently nourished.

Bottle Use: A majority (64.3%) believes it's incorrect to use a baby bottle with breastfeeding.

Duration of Breastfeeding: Majority (87.1%) agree that breastfeeding should continue for at least two years and beyond.

Formula Substitution: 64.3% agree that infant formula is not equivalent to breast milk.

HAMLET Protein: Opinions are divided on the protective effect of HAMLET protein in breast milk against cancers, with 54.3% agreeing.

Long-term Protection: Majority (84.3%) agree that breastfeeding protects infants from diseases both in the short and long term.

Feeding Priorities: 67.1% prioritize exclusive breastfeeding, followed by other methods including donor breastfeeding and formula.

Expressing Breast Milk: Majority (90.0%) agree that mothers should be taught how to express breast milk during breastfeeding.

Mental Health Protection: 71.4% agree that breast milk protects infants against mental illness.

Storage Guidelines: Opinions are split on the storage duration of breast milk at different temperatures.

Prebiotic and Probiotic Properties: 71.4% agree that breast milk is both prebiotic and probiotic.

Colostrum: Opinions are divided on the definition of colostrum, with 72.9% disagreeing with the provided statement.

Foremilk and Hindmilk: 64.3% agree that infants should receive both foremilk and hindmilk during breastfeeding.

Nutrient Importance: Opinions are split on the importance of long-chain fatty acids in breast milk for brain and eye development.

Preterm Breast Milk: Opinions are split on the composition of preterm breast milk compared to breast milk in the first weeks.

Taste Variation: 55.7% agree that the taste of breast milk varies according to the mother's diet.

Anemia Risk: Opinions are divided on the rarity of iron deficiency anemia in breastfed infants in the first 6-8 months.

Water in Hot Weather: Opinions are divided on whether breastfed infants should be given water in very hot weather.

Table 4.3. Descriptive Statistics of Knowledge

Descriptive		Mean Knowledge	
		Statistic	Std. Error
Mean Score		0.625	0.017
95% Confidence Interval for Mean	Lower Bound	0.592	
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5% Trimmed Mean		0.624	
Median		0.62	
Variance		0.02	
Std. Deviation		0.141	
Minimum		0.36	
Maximum		0.92	
Range		0.56	
Interquartile Range		0.24	
Skewness		0.148	0.287
Kurtosis		-0.916	0.566

N=70, Knowledge =25 Questions, True=1=1094, false=0=656, Mean Score=0.625

Table 4.4. Normality Test for Mean Knowledge

Tests of Normality	Kolmogorov-Smirnov			Types of tests to Use
	Statistic	d.f.	P-Value	
Mean Knowledge	0.101	70	0.075 (Normal distribution)	Parametric tests

The results indicate that the distribution of the variable "Mean Knowledge" follows a normal distribution based on the Kolmogorov-Smirnov test, with a p-value of 0.075. Therefore, parametric tests would be appropriate for analyzing this variable.

Table 4.5. Comparison of knowledge mean with theoretical mean by one-sample t-test

Parameter	N	Mean	Theoretical Mean	Std. Deviation	t-test one sample	df	P-Value
Mean Knowledge	70	0.625	0.5	0.141	7.43	69	0.000 (HS)

Result Description (Comparison of Knowledge: One-Sample t-Test Results): for knowledge, the mean score of 0.625 significantly exceeds the theoretical mean of 0.500, with a mean difference of 0.12514 (SD = 0.141), resulting in a t-test value of 7.430 (df = 69, $p < 0.000$), indicating a highly significant difference.

Table 4.6. Comparison of Mean Knowledge by social demographic data

Knowledge		N	Mean	Std. Deviation	Test Value	P-Value
X1:- Age (Groups) Mean $\pm$ SD 34.23 $\pm$ 8.477	22 - 31	30	0.612	0.109	0.443	0.644 (NS)
	32 - 41	29	0.644	0.159		
	42 +	11	0.611	0.173		
	Total	70	0.625	0.141		
X2: Gender	Male	30	0.596	0.155	-1.512 [†]	0.135 (NS)
	Female	40	0.647	0.127		
X3: How many years have you been working as a nurse?	<1	4	0.66	0.106	1.013 [‡]	0.392 (NS)
	3-Jan	11	0.68	0.12		
	5-Mar	9	0.578	0.142		
	>5	46	0.618	0.147		
	Total	70	0.625	0.141		
X4: Which nursing school did you graduate from?	High School	2	0.48	0.057	1.426 [‡]	0.248 (NS)
	Institute	32	0.615	0.128		
	University	36	0.642	0.151		
	Total	70	0.625	0.141		
X5: How many years have you been working in the pediatric clinic?	<1	8	0.645	0.066	0.672 [‡]	0.572 (NS)
	3-Jan	15	0.624	0.141		
	5-Mar	9	0.564	0.143		
	>5	38	0.636	0.152		
	Total	70	0.625	0.141		
X6: Do you have any children?	Yes	43	0.625	0.159	-0.002 [†]	0.998 (NS)
	No	27	0.625	0.11		
X7: Have you breastfed your own child (if you have a child)?	Yes	33	0.63	0.169	0.386 [†]	0.702 (NS)
	No	10	0.608	0.123		
X8: Were you breastfed as a child?	Yes	44	0.636	0.153	0.397 [‡]	0.674 (NS)
	No	12	0.613	0.132		
	I don't know	14	0.6	0.11		
	Total	70	0.625	0.141		
X9: Do you think that information about breastfeeding was sufficiently included in the syllabus during your education before graduation?	Yes	51	0.637	0.149	1.143 [†]	0.257 (NS)
	No	19	0.594	0.113		
X10: Did you practice in a newborn intensive care unit (NICU)/newborn clinic during your education before graduation?	Yes	38	0.66	0.124	2.326 [†]	0.023 (S)
	No	32	0.584	0.15		
X11: Did you receive training on breastfeeding after graduation?	Yes	34	0.651	0.158	1.481 [†]	0.143 (NS)
	No	36	0.601	0.12		
X12: Do you think that mothers in Iraq are sufficiently breastfeeding their infants?	No, not enough	39	0.597	0.124	-1.915 [†]	0.060 (NS)
	Yes, enough	31	0.661	0.155		

[‡] One-way ANOVA (F-test), [†] : t-test

The comparison of mean knowledge scores across various sociodemographic factors reveals that most variables, including age, gender, years of nursing

experience, type of nursing school, years working in a pediatric clinic, having children, breastfeeding own child, and being breastfed as a child, show no statistically significant differences, as indicated by P-Values above 0.05. However, the only significant difference is observed in those who practiced in a Newborn Intensive Care Unit (NICU) during their education, who had higher knowledge scores (P-Value=0.023), highlighting the positive impact of NICU experience on knowledge.

5. DISCUSSION

According to Infant and Young Child Feeding Guidelines 2023 by WHO, Exclusive breastfeeding for 6 months has many benefits for the infant and mother. Chief among these is protection against gastrointestinal infections which is observed not only in developing but also industrialized countries. Early initiation of breastfeeding, within 1 hour of birth, protects the newborn from acquiring infections and reduces newborn mortality. The risk of mortality due to diarrhoea and other infections can increase in infants who are either partially breastfed or not breastfed at all. Breast-milk is also an important source of energy and nutrients in children aged 6–23 months. It can provide half or more of a child's energy needs between the ages of 6 and 12 months, and one third of energy needs between 12 and 24 months. Breast milk is also a critical source of energy and nutrients during illness, and reduces mortality among children who are malnourished. Children and adolescents who were breastfed as babies are less likely to be overweight or obese. Additionally, they perform better on intelligence tests and have higher school attendance. Breastfeeding is associated with higher income in adult life. Improving child development and reducing health costs results in economic gains for individual families as well as at the national level. In a study done among pediatric nurses in Rapareen Pediatric Hospital in Erbil city to assess the knowledge and practices regarding breastfeeding, early and exclusive breast-feeding including colostrum was advised by all, which was similar to our study. In a study from Iraq (n = 70), as observed The ages of Pediatric Nurses between 22 and 60 years from both gender. Regarding their marital status, all nurses are married. When their educational status is evaluated, two nurses are high school graduates, thirteen two nurses are institute graduates (two years), are university graduated, and regarding knowledge of pediatric nurses that is thirty six nurses, The majority of respondents fell within the age groups of 22-31 and 32-41, comprising 42.9% and 41.4% respectively. Female nurses represented the majority at 57.1%, while males constituted 42.9%. Regarding years of nursing experience, a significant portion (65.7%) had over five years of experience. The majority of respondents graduated from a university (51.4%), followed by an institute (45.7%), and a smaller proportion from high school (2.9%). In terms of tenure at the pediatric clinic, over half of the nurses (54.3%) had worked for over five years. Additionally, a considerable portion of respondents were parents (61.4%), with the majority having breastfed their own children (55.7%). Most nurses (72.9%) believed that breastfeeding information was adequately included in their pre-graduation education syllabus. A significant proportion (54.3%) had practiced in newborn intensive care units or newborn clinics during their education, and nearly half (48.6%) had received

training on breastfeeding after graduation. When asked about breastfeeding practices in Iraq, opinions were divided, with 44.3% believing it was sufficient and 55.7% indicating it was not enough. In another study in the United States in 2014 do not provide ideal nurse education on breastfeeding, (87.1%) of participants believe that infants should be first breastfed after birth, (82.9%) agree that breastfeeding should commence within the first half hour after birth, Feeding Frequency: While 62.9% agree that infants should be breastfed whenever they ask for it during exclusive breastfeeding, a significant proportion (44%) disagrees, (57.1%) believes that breastfed infants should not be given pacifiers, 65.7% agree that infants do not need water during exclusive breastfeeding, while 34.3% believe otherwise, 82.9% agree that infants should be exclusively breastfed for the first six months before introducing additional foods and (87.1%) agree that breastfeeding should continue for at least two years and beyond. in a study from Brazil, which studied responses from 89 nurses should be done every 3 h. 92% of all respondents felt that exclusive breastfeeding should be implemented in the first 6 months. 83% of the study population were of the opinion that breastfeeding should be continued for 24 months and more, and this was contrary to our results of almost half not agreeing.⁶ At 1 and in other study done by Aliyu and Shehue, in 2016 showed that 68.4% knew the correct definition and duration of exclusive breastfeeding, 47.2% exclusively breastfeeds for the first six (6) months of life, 92% gives colostrum to their babies because they believed it provides nutrition and protection to their babies.

In this study the only significant difference is observed in those who practiced in a Newborn Intensive Care Unit (NICU) during their education, who had higher knowledge scores ($P\text{-Value}=0.023$), highlighting the positive impact of NICU experience on knowledge, in other study by Spear in 2004, some of the NICU nurses had limited understanding of the differences between breast milk and formula. In Spear's study, NICU nurses had lower mean breastfeeding knowledge and attitude scores than other maternal child health nurses. Spear asked one open ended question about breastfeeding beliefs and found that the nurses generally supported breastfeeding.

6. CONCLUSION

In the study, which was conducted to knowledge and practice of pediatric nurses in Erbil city regarding breastfeeding; it was observed that pediatric nurses have various experiences regarding breast feeding, that being a knowledge and practice of pediatric nurses have a wide advantages, that they experience related to a breast feeding, that they develop and motivate mothers to feeding them baby, that they receive support from the nurses. It was also determined that the nurses taken a training or courses to increase acknowledgments to support a mothers also determined the health care expirments in the hospitals to motivate the mothers for undrastanding the important and advantage of feeding for her baby, and that mothers do not receive sufficient information about breast feeding its a global issue need to support them through many ways one of them increase knowledge and practice of pediatric nurses.

7. RECOMMENDATIONS

Providing training to pediatric nurses to developing his knowledges.

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RESUME

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EDUCATION INFORMATION

School	Department	Year of Start	Year of End
Hawker Medical University	College of Nursing	2008	2012

APPENDICES

APPENDIX 1

1. Age:

2. Gender:

- Female
- Male

3. How many years have you been working as a nurse?

1. Less than (1) year
2. (1-3) years
3. (3-5) years
4. More than (5) years

4. Which nursing school did you graduate from?

1. High School
2. Institute (two years study)
3. University (four years)

5. How many years have you been working in the pediatric clinic?

- Less than (1) year
- (1-3) years
- (3-5) years
- More than (5) years

6. Do you have any children?

- Yes
- No

7. Have you breastfed your own child (if you have a child)?

- Yes
- No

8. Were you breastfed as a child?

- Yes
- No
- I don't know

9. Do you think that information about breastfeeding was sufficiently included in the syllabus during your education before graduation?

- Yes
- No

10. Did you practice in a newborn intensive care unit (NICU)/newborn clinic during your education before graduation?

- Yes
- No

11. Did you receive training on breastfeeding after graduation?

- Yes
- No

12. Do you think that mothers in Iraq are sufficiently breastfeeding their infants?

- Yes, enough
- No, not enough

Descriptive Form

APPENDIX 2

#.	Questions	Yes	No
1	The infant should be first breastfed after birth		
2	Breastfeeding should be started within the first half hour after birth		
3	During exclusive breastfeeding, the infant should be breastfed whenever the infant asks for it		
4	Breastfed infants should not be given a pacifier		
5	When exclusively breastfeeding, the infant does not need to be given water		
6	The infants should be only breastfed for the first six months, and additional foods should be started after the 6th month		
7	If the infant urinates at least 6 diapers a day, it shows that the breast milk is sufficient		
8	A breastfed infant gaining at least 500 grams per month indicates that the infant is sufficiently nourished		
9	It is not correct to use a baby bottle with breastfeeding for infants		
10	Breastfeeding should be continued for at least two years and beyond		
11	Infant formula is not equivalent to breast milk		
12	HAMLET protein in breast milk is protective against cancers		
13	Breastfeeding protects the infant from diseases both in the short and long term		
14	The first priority in infant feeding is exclusive breastfeeding, followed by artificial breastfeeding (spoon, cup, baby bottle), donor breastfeeding and finally the use of formulas		
15	The mother must be taught how to express breast milk during breastfeeding		
16	Breast milk protects the infant against mental illness		
17	Breast milk can be stored at room temperature for 3 hours, in the refrigerator for 3 days and in the freezer for 3 months		
18	Breast milk is both prebiotic and probiotic		
19	Colostrum is the milk excreted from the breast in the first 5 days after birth		
20	Infants should get both foremilk and hindmilk when sucking on the breast. The infant emptying the breast and letting go of the breast spontaneously indicates that the infant has received the hindmilk		
21	High levels of long-chain fatty acids in breast milk are essential for brain and eye development		
22	Preterm breast milk has higher protein, fat and sodium content than breast milk in the first weeks		
23	The taste of breast milk varies according to the mother's food		
24	Iron deficiency anemia is rare in breastfed infants in the first 6-8 months		
25	Breastfed infants should not be given water in very hot weather		

Knowledge of Nurse regarding Breastfeeding

APPENDIX 3

إقليم كوردستان - العراق مجلس الوزراء وزارة الصحة المديرية العامة لصحة اربيل قسم الادارة	 Kurdistan Region – Iraq Council of Ministers Ministry of Health General directorate of Health-Erbil	هه‌ڕێمی کوردستان - عێراق ئەنجومه‌نی وه‌زیران وه‌زاره‌تی ته‌ندروستی به‌ڕێوه‌به‌رایه‌تی گشتی ته‌ندروستی هه‌ولێر به‌شی کارگێڕی
No.: Date: / 8 / 2023	پۆشپه‌ڕ / ٢٧٢٣ / کوردی	ژماره: ٤٤٧٩ رێکھوت: ٢٠٢٣/٨/ ١٧

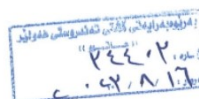
Rapareen Pediatric Teaching Hospital

RESEARCH ETHICS COMMITTEE APPROVAL

Title of the project: Knowledge and practice about breastfeeding of pediatric nurses in Iraq.

Researcher: Kawthar Ibrahim OTHMAN

Investigator: Prof. Dr. Hülya KARATAŞ



Abstract:

The study will be carried out to determine the knowledge and practices nurses working in Iraq about breastfeeding. The sample of the study consists of nurses working in a children's hospital in Erbil, Iraq. The number of people to be recruited will be determined by performing a power analysis in the G power program. the data will be obtained by using the Descriptive Information Form and the scales regarding breast milk and breastfeeding, Descriptive statistics, chi-square and regression analysis will be used in the evaluation of the data.

General Directorate

Dr Dlovan Muhammed Fatih

16 .Aug. 2023



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Ethic Committee Form