IKRAN ALI ADAN

EVALUATİON OF BREASTFEEDİNG KNOWLEDGE AND ATTİTUDES AMONG NURSİNG STUDENTS AT A UNİVERSİTY İN NORTHERN CYPRUS

M.Sc. THESIS

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Ikran ALI ADAN

Supervisor
Assoc. Prof. Dr. Dilek SARPKAYA GÜDER

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February, 2025

Approval

We certify that we have read the thesis submitted by Ikran ALI ADAN titled **"Evaluation of Breastfeeding Knowledge and Attitudes among Nursing Students at a University in Northern Cyprus"** and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Nursing Sciences (Obstetric and Women Health Nursing).

Examining Committee	Name-Surname	Signature
Head of the Committee:	Asist. Prof. Dr. Sema ÜSTGÖRÜL	.....
Committee Member:	Asist. Prof. Dr. Özlem AKALPLER	.....
Supervisor:	Assoc. Prof. Dr. Dilek SARPKAYA GÜDER	.....

Approved by the Head of the Department

26.3.../2025

.....

Assoc. Prof. Dr. Dilek SARPKAYA GÜDER

Head of Obstetrics and Women Health Nursing Department

Approved by the Institute of Graduate Studies

.../2025

.....

Prof. Dr. Kemal Hüsnü Can Başer

Head of the Institute of Graduate Studies

Declaration of Ethical Principles

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

Ikran ALI ADAN

07/02/2025

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Prior to anything else, I wish to express my sincerely appreciation to Allah, the Creator of all things who embodies kindness and compassion, for all the blessings I received throughout my studies and the successful completion of my Thesis. May Allah provide blessings upon the final prophet, Mohamed (PBUH). After that, I would like to acknowledge and give my heartfelt gratitude to my Thesis supervisor, **Assoc. Prof. Dr. Dilek SARPKAYA GÜDER**, for her invaluable assistance and mentorship throughout the research and Studies as well. I deeply appreciate her extensive expertise, support, and active Assistance. The guidance she provided was exceedingly advantageous throughout the entire process of conducting the study and composing the thesis. I am extremely grateful to have had such an exceptional mentor and advisor for my academic pursuits.

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Ikran ALI ADAN

Abstract

Evaluation of Breastfeeding Knowledge and Attitudes Among Nursing Students at a University in Northern Cyprus

Ali Adan, Ikran

M.Sc., Nursing

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Supervisor

Assoc. Prof. Dr. Dilek Sarpkaya Güder

Purpose: The purpose of this study is to evaluate the knowledge, and attitudes about breastfeeding among nursing students at a University in Northern Cyprus.

Methods: A cross-sectional, relationship-seeking, descriptive and quantitative design was used in this study. The population of the study consisted of international nursing students (N=450) studying in the English Nursing Department (Undergraduate, Postgraduate and PhD) at Near East University in Northern Cyprus. The study period was nursing students studying in the 2024-2025 academic year. The sample size was calculated to be 212 students using Slovenes formula based on a 95% confidence interval and a 5% margin of error, however, reached 240 students. The data was collected by the researcher in face-to-face method using the information form of the students, the Gender Friendly Breastfeeding Knowledge scale (BKS) and the Iowa Infant Feeding Attitudes Scale (IIFAS) in the study. The Data were analyzed using descriptive statistics, spearman and correlation analysis, Mann-Whitney and Kruskal Wallis analysis tests.

Findings: The majority of the nursing student participants (72.1%) were female, (77.1%) were Christian, (33.8%) were from class 4, (89.6%) were single students. In the findings 90.0% of nursing students' participants did not have children, 85.4% did not have breastfeeding experience, 73.8% breastfed by their mothers. Students 64.2% had not received any formal breastfeeding training, and lastly the minority students whom had formal breastfeeding training received from BSc nursing education classes. The study found that the nursing students' score of Gender Friendly Breastfeeding Knowledge (BKS) was good (80 and above points) and the nursing students' score of the Iowa Infant Feeding Attitude Scales was neutral (IIFAS Score 49-69 points). The study the results showed a weak but statistically significant between knowledge and

attitudes of the nursing student respondents' relationship (r = 0.395; p = 0.000). In the study results, the age, religion, classes, marital status, having children, receiving breastfeeding training of the students was found to be associated with their breastfeeding knowledge and the association was statistically significant, however, they were not all significantly associated with students' attitudes. In addition, the findings showed that the sources of receiving breastfeeding training were not significantly associated with the respondents' knowledge of breastfeeding, however, it was significantly associated with Students' Attitudes (p>0.05).

Conclusion and recommendations: In conclusion, the study found that the nursing students' score of Gender Friendly Breastfeeding Knowledge was good and the nursing students' score of the Iowa Infant Feeding Attitude Scales was neutral and schools of nursing need to include greater quantities of formal, evidence-based breastfeeding education as part of the courses so that graduates are well prepared to provide care for breastfeeding mothers professionally. In addition, it might also be useful for the students to obtain optional seminars or add-on materials to facilitate acquisition of farther breastfeeding knowledge and attitudes.

Keywords: Breastfeeding, Exclusive Breastfeeding, Breast Milk, Breastfeeding Knowledge, Breastfeeding Attitudes.

Özet

Kuzey Kıbrıs'ta Bir Üniversitede Hemşirelik Öğrencilerinin Emzirme Bilgi ve Tutumlarının Değerlendirilmesi

Ali Adan, Ikran

Yüksek Lisans, Hemşirelik

Subat, 2025, 73 sayfa

Danışman

Doç. Dr. Dilek Sarpkaya Güder

Amaç: Bu çalışmanın amacı Kuzey Kıbrıs'ta bir üniversitede öğrenim gören hemşirelik öğrencilerinin emzirmeye ilişkin bilgi ve tutumlarını değerlendirmektir.

Yöntemler: Bu çalışmada kesitsel, ilişki arayan, tanımlayıcı ve niceliksel bir tasarım kullanılmıştır. Araştırmanın evrenini, Kuzey Kıbrıs Yakın Doğu Üniversitesi İngilizce Hemşirelik Programında (Lisans, Yüksek Lisans ve Doktora) öğrenim gören Uluslararası hemşirelik öğrencileri (N=450) oluşturmuştur. Araştırmanın çalışma dönemini, 2024-2025 eğitim-öğretim yılında öğrenim gören hemşirelik öğrencileri oluşturmaktadır. Örneklem büyüklüğü %95 güven aralığı ve %5 hata payı esas alınarak Sloven formülü kullanılarak 212 öğrenci olarak hesaplandı. ancak 240 öğrenciye ulaşıldı. Araştırmada veriler, öğrenci bilgilendirme formu, Cinsiyet Dostu Emzirme Bilgi Ölçeği ve Iowa Bebek Besleme Tutumları Ölçeği kullanılarak araştırmacı tarafından yüz yüze görüşme yöntemiyle toplanmıştır. Veriler tanımlayıcı istatistikler, spearman ve korelasyon analizi, Mann-Whitney ve Kruskal Wallis analiz testleri kullanılarak analiz edilmiştir.

Bulgular: Hemşirelik öğrencisi katılımcıların çoğunluğu (%72,1) kadın, (%77,1) Hristiyan, (%33,8) 4. sınıftan, (%89,6) bekar öğrencilerden oluşmuştur. Bulgulara göre hemşirelik öğrencilerinin %90.0'ının çocuğu yoktur, %85.4'ünün emzirme deneyimi yoktur, %73.8'i anneleri tarafından emzirilmiştir. Öğrencilerin %64,2'si herhangi bir resmi emzirme eğitimi almamıştır ve son olarak resmi emzirme eğitimi alan azınlıktaki öğrenciler lisans hemşirelik eğitimi derslerinden almışlardır. Çalışmada hemşirelik öğrencilerinin Cinsiyet Dostu Emzirme Bilgisi puanının iyi (80 ve üzeri puan) olduğu, hemşirelik öğrencilerinin Iowa Bebek besleme tutum ölçeği puanının ise nötr (49-69 puan) olduğu belirlendi. Çalışma sonuçları, hemşirelik

öğrencisi katılımcıların bilgi ve tutumları arasındaki ilişkinin zayıf fakat istatistiksel olarak anlamlı olduğunu göstermiştir (r = 0,395; p = 0,000). Araştırma sonuçlarında öğrencilerin yaşı, dinleri, sınıfları, medeni durumları, çocuk sahibi olmaları, emzirme eğitimi almaları ile emzirme bilgi düzeyleri arasında ilişki olduğu ve bu ilişkinin istatistiksel olarak anlamlı olduğu ancak bunların hepsinin Öğrenci Tutumları ile anlamlı düzeyde ilişkili olmadığı görülmüştür. Ayrıca bulgular, emzirme eğitimi alma kaynaklarının katılımcıların emzirmeye ilişkin bilgileri ile anlamlı düzeyde ilişkili olmadığını ancak Öğrenci Tutumları ile anlamlı düzeyde ilişkili olduğunu göstermiştir (p>0,05).

Sonuç ve öneriler: Sonuç olarak, çalışma, hemşirelik öğrencilerinin Cinsiyet Dostu Emzirme Bilgisi puanının iyi olduğunu ve hemşirelik öğrencilerinin Iowa Bebek besleme tutum ölçeği puanının nötr olduğunu ve hemşirelik okullarının, mezunların emziren annelere profesyonel olarak bakım sağlamaya iyi hazırlanmaları için derslerin bir parçası olarak daha fazla resmi, kanıta dayalı emzirme eğitimine yer vermesi gerektiğini bulmuştur. Ayrıca öğrencilerin emzirme konusunda daha fazla bilgi ve tutum kazanmalarını kolaylaştırmak için isteğe bağlı seminerler veya ek dersler almaları da yararlı olabilir.

Anahtar kelimeler: Emzirme, Sadece Emzirme, Anne Sütü, Emzirme Bilgisi, Emzirme Tutumları.

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List of Abbreviations

BKS	Breastfeeding Knowledge Scale
IIFAS	Iowa Infant Feeding Attitudes Scale
IQ	Intelligence Quotient
NANDA	North American Nursing Diagnoses
NEU	Near East University
NIC	Nursing Interventions Classification
SIDS	Sudden Infant Death Syndrome
SPSS	Statistical package of Social Sciences
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organization

CHAPTER I
Introduction

This chapter includes the problems, aims, importance, limitations and related descriptions of the study.

Statement of the Problem

Breastfeeding significantly improves the health and well-being of mother and child. Exclusive breastfeeding is essential for an infant's health and development, decreasing death rates and enhancing long-term results (Hassan & Abdi, 2023; Muro-Valdez, et al., 2023; UNICEF, 2023). Breast milk is a vital, free, and easily accessible source of nutrition for infants, offering numerous advantages. Exclusive breastfeeding and partial breastfeeding both diminish infant mortality and morbidity associated with infections. Furthermore, breastfed children exhibit a reduced likelihood of obesity, a lower risk of developing diabetes, and perform better on IQ assessments in maturity (Roghair, 2024). Likewise, exclusive breastfeeding and partial breastfeeding can diminish the likelihood of postpartum depression, breast cancer, ovarian cancer, type 2 diabetes, risk of metabolic or cardiovascular disorders in mothers (Takano, et al., 2024).

The American Academy of Pediatrics and World Health Organization (WHO) have similar recommendations on breastfeeding. They suggest that ‘Exclusive breastfeeding for about 6 months, followed by continued breastfeeding as complementary foods are introduced, with the continuation of breastfeeding for 2 year or longer’ (Meek et al., 2020; UNICEF, 2023). Despite this, data on breastfeeding aren’t satisfactory in the World. According the UNICEF 2022 data, rate of early initiation of breastfeeding is 46%, rate of exclusively breastfed for the first 2 days after birth is 67% in the World (UNICEF, 2023). The Global rate of exclusive breastfeeding for infants under 6 months was 44% over the period 2015–2020 in the World (WHO, 2023). According to the study conducted by Güder and İnce, in 2023, the rate of exclusive breastfeeding was 58.66%, which indicates over fifty percent of the study participants exclusively breastfed their infants for six

months and continued until the child reached 24 months of age in Northern Cyprus (Güder and İnce, 2023).

There are big differences in how widely accepted and followed exclusive breastfeeding methods in different groups, countries, and parts of the world. However, breastfeeding is public health issue. The WHO (2022) campaign for an increase in the rate of exclusive breastfeeding to 50% by 2025 (WHO, 2023). It is stated that increasing breastfeeding rates by promoting breastfeeding could significantly contribute to achieving the 2030 Sustainable Development Goals (UNICEF, 2016). According to Global breastfeeding Collective (GBC), UNICEF and WHO report in 2023, in the last decade, the proportion of women who exclusively breastfeed for the initial six months of a child's life has risen by 10 percentage points, attaining 48% in 2023, nearing the 50% goal established by the World Health Assembly for 2025 (GBC, UNICEF & WHO, 2023).

The positive attitude and wealth of information of mothers have a big impact on the growth of exclusively breastfeeding (Alnasser, et al., 2018; Čatipović et al., 2022). It stated that the influence of health care personnel on parent decision to breastfeeding (Čatipović et al., 2022). Especially, nurses and midwives are the most important health care personnel who can affect the positive attitude of mothers in the initiation and maintenance of breastfeeding. The one of the barriers to successful breastfeeding may be inadequate education and training of health care personnel's as nurse (Čatipović et al., 2022).

Therefore, it is important to determine the knowledge and attitudes of nursing students about breastfeeding and that is the reason behind this study to evaluate the knowledge and attitude and practice of breastfeeding among nursing students at University in Northern Cyprus. When the literature on the subject is analyzed; it found that; A systematic review study by Yang et al. (2018) found that health care personnel students had and low levels of knowledge and poor attitudes towards breastfeeding. An original study conducted by Khresheh, (2021) found that the university students in Syria and Lebanon had generally positive views of breastfeeding; there was also a significant relationship between the intention to breastfeed and the participants' knowledge and attitudes. A systematic review study by Hamdoune & Jounaidi (2024) found that nursing and midwifery students' knowledge of breastfeeding was insufficient as a result of the lack of training courses (Hamdouune & Jounaidi, 2024).

In the literature, it was found that breastfeeding knowledge and attitudes of nursing students were not sufficient (Elareed, & Senosy, 2020; Cervera-Gasch, et al., 2021; Goldbort, et al., 2022; Liu et al., 2022; Leshi & Makanjuola, 2022; Khasawneh, et al., 2023; Ogundare, et al., 2023; Hamdouune &Jounaidi, 2024). On the other hand, in some literature, it was found that breastfeeding knowledge and attitudes of nursing students were sufficient (Sandhi, et al., 2023; Yang, et al., 2024). It is seen that there is a need for studies to investigate the knowledge and attitudes of nurse students regarding breastfeeding.

Purpose of the Study

The purpose of this study is to evaluate the knowledge, and attitudes about breastfeeding among nursing students at a University in Northern Cyprus.

Research Questions

1) What is the level of breastfeeding knowledge among nursing students?
2) What is the level of breastfeeding attitudes among nursing students?
3) Is there a relationship between breastfeeding knowledge level and attitude level of nursing students?
4) Is there a relationship between breastfeeding knowledge and attitude against the nursing students' sociodemographic variables?

Variables

Dependent variables: Knowledge, and attitudes on breastfeeding
Independent variables: Student characteristics (Age, class, experience of breastfeeding etc.).

Significance of the Study

By assessing nursing students' current knowledge and attitudes towards breastfeeding, the study provides critical data that can inform curriculum development in nursing schools. If gaps in knowledge or misconceptions about breastfeeding are identified, the university's nursing program can adjust its content to ensure that future nurses are adequately prepared to provide evidence-based, culturally competent, and supportive breastfeeding counseling to mothers. Nursing students are often among the first healthcare providers to interact with new mothers and their infants, especially during prenatal, delivery, and postnatal care. The

findings of this study can highlight areas where nursing students may need additional training to enhance their ability to advocate for and support breastfeeding practices in clinical settings. A better-trained nursing workforce can ultimately lead to better maternal and infant health outcomes in the community. Encouraging breastfeeding is a key element of public health initiatives aimed at reducing infant mortality rates and promoting long-term health outcomes. This study can serve as a foundation for understanding how nursing students in Northern Cyprus perceive the importance of breastfeeding. It can also assess their willingness to promote breastfeeding, helping policymakers and healthcare organizations design more targeted public health campaigns and interventions aimed at increasing breastfeeding rates in the region. Furthermore, there is a scarcity of research that particularly examines the breastfeeding knowledge, and attitudes among nursing students at a university in Northern Cyprus. The purpose of this study is to fill this void and provide useful perspectives on this topic, maybe to guide future researchers. Another significance of the study is that it may contribute to the limited literature on breastfeeding in Northern Cyprus.

Limitations

A cross-sectional approach of research was used in this study to assess the variables affecting nursing students' attitudes and knowledge on breastfeeding practices. It is essential to understand that this approach struggles to establish causal relationships with relevant components. This study was limited only international nursing students at the departments of nursing in the faculty of nursing who speaks English language, which may mean that the study findings will not reflect the breastfeeding knowledge and attitude of the population of the area of this research. This study was limited by the respondent’s freeness to respond the questions. The willingness of more nursing students to participate in this study was challenging since, the schedule of the students was occupied and they were not much interested breastfeeding practices.

Definition of Terms

Breastfeeding: Breastfeeding, refers to the act of supplying a mother's breast milk to her newborn, either directly from the breast or by expressing the milk and administering it through a bottle (Cambridge dictionary, 1995).

Exclusive Breastfeeding: Exclusive breastfeeding is supplying breast milk alone to a neonate from birth to six months, without any supplementary food, beverages, or water, except for oral rehydration solutions and vitamin, mineral, or medicine drops or syrups (Couto, et al., 2020; Penugonda, et al., 2022; Sosseh, et al., 2023).

Breastfeeding knowledge: Breastfeeding knowledge refers to the understanding of the advantages, approaches, and practices of breastfeeding (Velzen, 2022).

Breastfeeding Attitude: The attitude towards breastfeeding embraces the cognitive, effective, and behavioral, reflected in one's beliefs, feelings, and perceptions towards breastfeeding (Cherry, 2024; Johnston et.al., 2023).

CHAPTER II

Literature Review

Research related conceptual definitions, descriptions and information related to the subject that already exists in the literature are given in this chapter.

Theoretical Framework

Definition of Breastfeeding.

The term Breastfeeding refers to the act of providing a newborn with breast milk, and it is essential for the health of women and their infants for numerous reasons, including nutritional, immunological, psychological, and others. Breastfeeding or nursing is the process by which a mother gives her infant breast milk, either straight from the breast or by pumping and then transferring to a container (Theodorides, 2021; Sumangala & Kudari, 2024).

Definition, Contents, Compasitions of Breast Milk.

Definition of Breast Milk

Breast milk is the biological fluid produced by mammalian mothers in their breasts. It is commonly termed "liquid gold" due to its exceptional nutritional makeup, which is specifically designed to meet an infant's growth and developmental requirements (Rio-Aige, et al., 2021; Dewey, et al., 2022; Brindha, 2023; WHO, 2024; Chen, et al., 2024).

Contents and Compasitions of Breast Milk

Breast milk has evolved throughout human history to satisfy the needs of the child. The composition fluctuates throughout feeding, throughout the day, and among different mothers. Interindividual variability is associated with various factors, including genetic variation, maternal adiposity, and diet. Breast milk undergoes three stages; colostrum, transitional and mature milk and its contents dynamically alters during breastfeeding. Colostrum, the initial milk produced by the mammary glands within the first two to four days of postpartum, is generated in small quantities (300 to 400 mL/day) and contains higher protein levels while being lower in fat and carbs compared to mature breast milk. Moreover, the principal

functions of colostrum are immunological rather than nutritive, as demonstrated by its elevated levels of immunological constituents like lactoferrin, leukocytes, immunoglobulins (Igs), and oligosaccharides. Following delivery, colostrum transitions to transitional milk on days four and five. This type of milk is produced in greater quantities (500–800 mL/day), contains lower amounts of protein and immunoglobulins, and has elevated concentrations of lactose, fat, and water-soluble vitamins to fulfil growth requirements. The composition of mature milk remains relatively unchanged six weeks of postpartum. Human breast Milk contains about 87%–88% water, and it has a specific gravity of 1.030, osmolarity of about 286 mOsm/L, and 124-g/L solid components as macronutrients, including about 7% of carbohydrates, 1% of protein, and 3.8% of fat. Typically, mature milk contains 65–70 kcal per 100 mL of energy, and about 50% of the total calorie supply is fat and 40% is carbohydrates (Kim & Yi, 2020; Rio-Aige, et al., 2021; Thomas, 2021; Shah, et al., 2022; GIFA & IBFAN, 2024; Sumangala & Kudari, 2024).

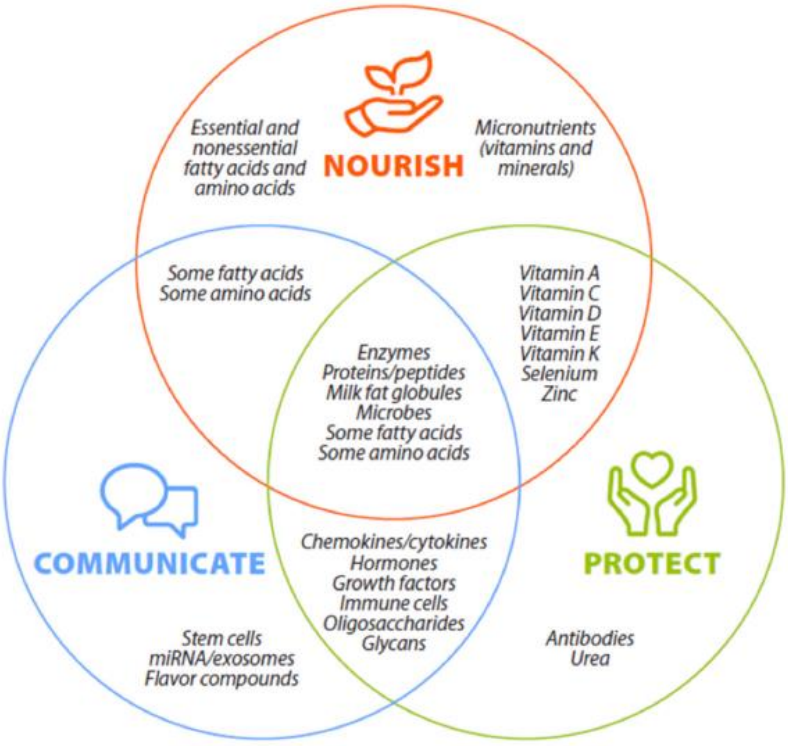

Figure 1. Compositions of Human Breast Milk (Smilowitz, et al., 2023**).**

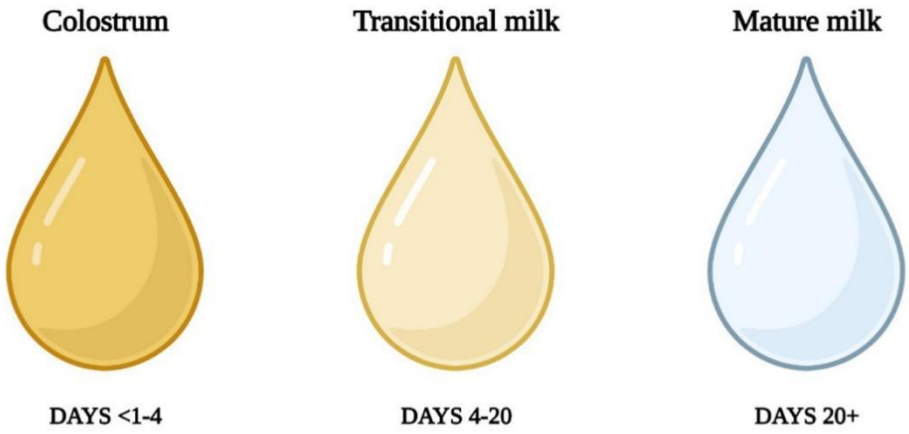

Figure 2. Stages of Human Breast Milk in the Function of Periods (Nunez-Delgado et al., 2024)

Benefits of Breastfeeding and Breast Milk.

Benefits of Breastfeeding for the Newborn/Child

For the neonate, baby, and child, Breast milk provides a wide range of physical, psychological, and developmental benefits such as Nutrition, Protection and Antibodies which promotes baby's healthy weight, and make children smarter. Breastfeeding provides neonates with a sense of familiarity with their prenatal environment. The mother transits effortlessly from the inner world to the external world if she can perceive the heartbeat and sense warm skin. The breastfed kids exhibit greater resilience to infectious diseases and possess stronger immune systems compared to their formula-fed peers. They exhibit reduced occurrences of childhood leukemias, gastrointestinal infections, respiratory infections, otitis media, allergic conditions, common colds, Sudden Infant Death Syndrome (SIDS), diseases of the large intestine, and Type I Diabetes. Breast milk facilitates healthy weight gain and contributes to the prevention of childhood obesity. breastfed infants exhibit a more advantageous gut flora, potentially affecting their fat storage capability and display higher levels of leptin in their physiological systems than formula-fed infants. Children who are breastfed may experience distinct neurological development compared to those who are formula-fed. breastfed infants exhibit elevated IQ scores and a reduced likelihood of experiencing learning or behavioral challenges in maturity. The primary constituents of breast milk are Arachidonic Acid and Docosahexaenoic Acid which Include Omega-3 and omega-6 fatty acids, and essential for cognitive growth and visual sharpness. Docosahexaenoic Acid supports

the structural integrity of the retina and brain and It significantly influences learning, memory, and overall cognitive function because to its essential role in the creation and maintenance of neuronal pathways, synapses, and cell membranes in the brain. On thr other hand, Arachidonic Acid enhances specific cellular processes and supports the development of the nervous system and brain of the infants (Danaie, et al., 2024; Dukuzumuremyi, et al., 2020; Hamer, et al., 2022; Hoyt-Austin, et al., 2021; Modak, et al., 2023; Zheng Liu, et al., 2019).

Benefits of Breastfeeding for the Mother

The breastfeeding mothers, in contrast to non-breastfeeding women, experiences fewer medical consultations, a lower prevalence of gastrointestinal, respiratory, and cardiocirculatory diseases, and diminished symptoms associated with physical and mental health issues. breastfeeding reduces the risk of developing osteoporosis, breast and ovarian cancer. Women who breastfeed are less prone to developing type 2 diabetes, hypertension, cardiovascular disease, hyperlipidemia, and arthritis. The breastfeeding may also inhibit ovulation and menstruation. The cessation of menstruation may be a natural gift, protecting the interval between pregnancies. This difference may be regarded as an additional advantage. Maternal figures are dedicating significant time to their infants post-delivery. The breastfeeding helps the uterus contraction by increasing oxytocin levels which aids in the uterus's restoration to its standard size. the early stimulation of the areal-mammillary gland is a critical factor in the production of oxytocin, this mitigates the risk of anemia and postpartum hemorrhage while expediting the organ's recovery to its former dimensions. The breastfeeding reduces Mood disorders that may arise during the postpartum period including postpartum depression, postpartum psychosis, and postpartum blues. Women who breastfeed exhibit a diminished probability of encountering postpartum Mood disorders in contrast to those who wean their infants prematurely or cease feeding (Hoyt-Austin, et al., 2021; Luiz Antonio Del Ciampo & Ieda Regina Lopes Del Ciampo, 2018; Roghair, 2024; Snyder, et al., 2021; Takano, et al., 2024; Tolossa, et al., 2020; UNICEF, 2023; Walters, et al., 2019).

Prevalence and Importance of Breastfeeding.

Prevalence of Breastfeeding

The breastfeeding prevalence in high, Middle and low income nations on breastfeeding rates and trends, was improved in 2023, the Global percentage of infants under six months of age exclusively breastfed has reached 48%, the percentage of newborn initiated breastfeeding within one hour of birth was 46%, While 71% of women continue to breastfeed their infant for at least one year, and by two years of age, breastfeeding rates decline to 45% (UNICEF & WHO, 2023; Neves, et al., 2021; Vieira, et al., 2024). At about 6 months of age, the nutritional requirements of the baby surpass the full supply of breast milk; therefore, complementary foods must be introduced. Inadequate or late introduction of complementary foods can lead to restriction of growth. Children should be breastfed on demand, carefully, and with eye contact for a duration of two years. Hygienic food preparation and storage are necessary. After six months of exclusive breastfeeding, little and incremental quantities of food should be introduced. It was suggested that from 6 to 8 months, administer 2 to 3 meals per day and from 9 to 23 months, provide 3 to 4 meals along with snacks, fortified foods, or supplements (European Society for Pediatric Gastroenterology, Hepatology & Nutrition (ESPGHAN), et al., 2024; WHO, 2023).

Factors affecting Breastfeeding.

The Socio-Demographic Factors

Maternal age, education, employment status, and family income are prominent sociodemographic characteristics frequently cited in studies as determinants of exclusive breastfeeding. The intricate interaction of social, familial, and individual variables influencing mothers' decisions regarding infant feeding is shown in these elements (Magnano San Lio, 2021).

Maternal Age.

The maternal age has been a significant sociodemographic variable in numerous researches concerning exclusive breastfeeding practices (Ibrahim et al., 2023; Hegazi et al., 2019; Sayed & Bugis, 2023). The Young women frequently encounter specific obstacles to exclusive breastfeeding due to their diminished

socioeconomic status, unstable family dynamics, and limited access to information. However, older women may possess superior decision-making capabilities, enhanced access to resources, and robust social support networks that facilitate exclusive breastfeeding (Hegazi et al., 2019; Ibrahim et al., 2023; Kimuli et al., 2023; Sayed & Bugis, 2023).

Maternal Education.

Maternal education is a supplementary sociodemographic factor that influences exclusive breastfeeding. Mothers with elevated educational levels are more inclined to exclusively breastfeed their infants, attributable to improved access to informational resources, heightened health literacy, and more awareness of the health advantages of feeding for the infants (Alshammari & Haridi, 2021; Baumgartner, et al., 2020; Kimuli et al., 2023; Machila CM et al., 2021; Magnano San Lio, et al., 2021; Uyamadu, et al., 2023).

Employment Status.

The employment status influences exclusive breastfeeding as well. Working women sometimes encounter difficulties in securing enough facilities and suitable nursing breaks at their workplaces, managing time limitations, and balancing professional and familial obligations. These issues may restrict their capacity to breastfeed exclusively. however, non-working moms generally possess greater flexibility in their schedules and enhanced control over their daily routines, facilitating the practice of exclusive breastfeeding (Baumgartner, et al., 2020; Kimuli et al., 2023; Machila et al., 2021; Sayed & Bugis, 2023; Uyamadu, et al., 2023).

Family Income.

Family income is a crucial socioeconomic determinant affecting exclusive breastfeeding practices. Mothers from affluent homes typically possess superior access to healthcare services, nutritional options, and social networks, which can promote exclusive breastfeeding. Nevertheless, Mothers with limited family finances may encounter financial obstacles that hinder their capacity to exclusively breastfeed their children. Although conclusive evidence is lacking, international studies have consistently shown that income inequality affects exclusive breastfeeding practices (Al-Katufi, et al., 2020; Baumgartner, et al., 2020; Gohal, et al., 2023; Habtewold et al., 2021).

Psychological and Social Factors

Psychological concepts and social conventions significantly influence breastfeeding behaviors across communities and cultures. These factors include those that may promote breastfeeding and those that serve as deterrents, influencing maternal choices and, consequently, the overall breastfeeding rates.

Formula Feeding.

Certain cultures may prefer formula over breastfeeding, and formula is often seen as more modern or acceptable. Urbanization, infant formula commercialization, and the image of formula feeding as a sign of wealth and sophistication influence it. Formula feeding is popular in several industrialized nations, especially among working women who must return to work quickly. Social change and commercialism have contributed to the decline in breastfeeding rates due to formula marketing. In non-Western cultures where extended family are involved in childrearing, their views on breastfeeding may influence a mother's decision. Elderly family members may urge for early solid food or formula introduction, believing it is better for the family or more convenient for them. The maternal-infant bond and extended family support may affect breastfeeding positively or negatively depending on their attitudes (Alemu, et al., 2023; Kera, et al., 2023; Taye, et al., 2021).

Religious Beliefs.

Religion might also affect nursing. Religions may emphasize natural parenting, including exclusive breastfeeding. Islam recommends breastfeeding for two years. In some religious circumstances, modesty or gender roles may impact nursing perception. In some cultures, social pressure to hide breastfeeding in public can discourage mothers from breastfeeding beyond the first months (Farhadi, 2020).

Social Stigma.

Furthermore, many cultures consider public breastfeeding improper, discouraging women from nursing in public. Public breastfeeding stigma may shame or discourage moms, leading to early termination. This is especially true in countries with stricter views on public affection and female bodies (Severinsen, et al., 2024).

Traditional Beliefs.

Nursing is deeply rooted in traditional knowledge and practices in some cultures. Thus, nursing is often associated with mother and child health in these cultures. Even within these typical limits, other cultures have different breastfeeding durations, food introduction times, and weaning times. Traditional beliefs influence

weaning and complementary food introduction in low-income rural areas, delaying exclusive breastfeeding and resulting in frequent mixed feeding, which reduces breastfeeding efficacy (Gutierrez, 2022).

Maternal Confidence.

The confidence in being able to provide breast milk may affect a mother's belief in success breastfeeding. Low belief, which is closely tied to an expressed fear of not producing enough milk, often has outcomes of early weaning from the breastfeeding practices (Viera, et al., 2024; Sanchez, 2024).

Mental Health.

Conditions such as postpartum depression or anxiety may lessen a mother's interest in or ability to be successful at breastfeeding (Yuen, et al., 2022).

Nursing and Breastfeeding

The Interdisciplinary collaboration is required to promote breastfeeding. the Nurses are essential in the lactation process. Nurses are strong advocates, instructors and coordinators who help educating families about the importance of lactation, offering both technical and emotional assistance to expecting and postpartum mothers (Yanga, et al., 2023).

The role of nursing staff acquires crucial relevance in the promotion and support of breastfeeding in hospitalized neonates. Numerous studies have highlighted the positive influence that nursing staff can have on the initiation and continuation of breastfeeding in this setting (Campbell et al., 2022, Kehinde et al., 2023; Garcés, et al., 2023). Nursing professionals, with their specialized knowledge, play a fundamental role in the education and guidance of mothers and fathers, as well as in the implementation of management strategies that favor breastfeeding success. The Education of mothers and fathers is an essential component in the promotion of breastfeeding in hospitalized neonates. Adequate and timely education provided by nursing staff can improve mothers' knowledge and confidence regarding breastfeeding. This includes information on the benefits of breastfeeding, proper latching, sucking techniques, and troubleshooting common problems that may arise during breastfeeding in the hospital setting (Garcés, et al., 2023).

The Nursing Process in Breastfeeding.

Breastfeeding is a complex process requiring much education and adaptation for both the mother and the infant. Nurses play a crucial role in assessing challenges and

formulating appropriate nursing diagnoses to guide interventions and improve outcomes (Wagner, 2023).

Assessment: Collecting data by observation, physical assessment of both mother and infant, and interviews to ascertain any issues. This includes assessing the mother's understanding of breastfeeding, her comfort, the newborn's feeding patterns, and any physiological aspects such as nipple condition, infant latch, and milk supply.

Diagnosis: Analyzing the assessment data to determine actual or potential nursing diagnoses associated with breastfeeding. These diagnoses are articulated using NANDA-I (North American Nursing Diagnosis Association International) standardized terminologies.

Planning: Formulating personalized objectives and strategies based on the recognized diagnoses.

Implementation: Implementing the planned interventions, which may encompass teaching, assisting, positioning strategies, and referral to lactation specialists.

Evaluation: Evaluating the efficacy of the interventions and modifying as necessary.

Nursing Diagnoses Related to Breastfeeding.

Ineffective Breastfeeding: the breastfeeding process is not meeting the needs of either the mother or the infant. This is a broad diagnosis and requires further specification. For instance, it might be due to the painful nipples caused by poor latch, improper positioning, or other factors leading to nipple trauma. Furthermore, Ineffective breastfeeding related to nipple soreness and cracking as evidenced by maternal reports of pain during and after feeding, and visual inspection of cracked and bleeding nipples (Wagner, 2023).

Insufficient milk supply: The mother is not producing enough milk to satisfy the infant's needs. Poor infant latch: The infant is not effectively attaching to the breast, leading to ineffective milk transfer and potential nipple damage (Wagner, 2023).

Infant refusal to breastfeed: The infant consistently refuses to breastfeed, possibly due to underlying medical conditions, pain, or other factors (Wagner, 2023).

Risk for Infection: Breastfeeding mothers are at a slightly increased risk of mastitis due to potential breaks in skin integrity from cracked nipples, and engorgement.

Deficient Knowledge: A variety of breastfeeding-related knowledge, such as posture, latching procedures, controlling the milk supply, and identifying symptoms of inefficient suckling, may be unknown to mothers (Wagner, 2023).

Imbalanced Nutrition: Less Than Body Requirements (Infant): This diagnosis applies when the infant is not receiving adequate nutrition from breastfeeding, leading to insufficient weight gain or other nutritional deficiencies (Wagner, 2023).
Anxiety related to breastfeeding: The emotional stress of breastfeeding difficulties can significantly impact the well-being of the mother (Wagner, 2023).

Nursing Interventions.

Education: Teaching proper latch techniques, infant positioning, and breastfeeding management strategies (Wagner, C. et al, (Eds.), 2024; Wagner, 2023).
Support: Providing emotional support and encouragement to the mother.
Referral: Referring the mother and infant to a lactation consultant or other specialists.
Pain management: Addressing nipple pain through the use of nipple shields, lanolin cream, and other pain-relieving methods (Wagner, C. et al, (Eds.), 2024; Wagner, 2023).
Medication: prescribing medications to enhance breastfeeding or address diseases.
Nutritional guidance: Offering the mother nutritional recommendations to guarantee the intake of sufficient caloric fluids (Wagner, C. et al, (Eds.), 2024; Wagner, 2023).

Table 1. Nursing Interventions for breastfeeding (Emidio, et al., 2020).

NIC Intervention	Number of activities
Emotional Support (5270)	12
Infant Care (6820)	6
Infant Care: Preterm (6826)	4
Infant Care: Newborn (6824)	7
Kangaroo Care (6840)	4
Teaching: Infant Nutrition 0–3 months (5640)	1
Lactation Counseling (5244)	26
Coping Enhancement (5230)	3
Attachment Promotion (6710)	9

Table 1 shows the number of activities related to international nursing interventions.

Related Research

An original study conducted by Leshi & Makanjuola (2022) in Nigeria found that the nursing students had adequate breastfeeding knowledge (81%), however, only four out of every 10 students (40%) had a positive attitude towards breastfeeding.

İn contrasting, an original study conducted by Yang et al (2024) in China found that Most of undergraduate nursing students' participants (96.96%) expressed supportive attitudes toward breastfeeding, while 54.80% of the students had average breastfeeding knowledge in the study.

An integrative literature review study conducted by Bowdler, et al (2022), found that the Preregistration nursing students have sufficient knowledge of the physiology of lactation but insufficient knowledge on supporting women to decide on the practical aspects of breastfeeding and its challenges for healthy or sick babies.

A multicentre study conducted by Cervera-Gasch, et al (2021), in Spain found that Most of university nursing students' participants (91.2%) had expressed insufficient Breastfeeding knowledge in the study.

A similar study conducted by Liu et al (2022) in China, found that, nursing undergraduates demonstrated inadequate understanding on breastfeeding and recommended to enhance the understanding of breastfeeding among nursing undergraduates.

A similar study conducted by Goldbort, et al (2023) in US, found that, the Medical and nursing students demonstrated a deficiency in understanding regarding extended breastfeeding and displayed more negative attitudes towards it as the child's age advanced. The behavioral purpose of medical and nursing students to promote weaning was linked to their pre-existing stigma against prolonged breastfeeding.

A similar cross-sectional study conducted by Elareed, & Senosy (2020) in Egypt, found that *the* majority of nursing student study participants (80.2%) had inadequate knowledge, while (54.4%) of the participants has negative attitude towards breastfeeding and a statistically significant association was found between the score of knowledge and attitudes.

CHAPTER III

Methodology

This chapter provides information about the research design, participants/sample, data collection and analysis procedures, research plan and the ethical considerations of the study.

Research Design

A cross-sectional, descriptive and quantitative design was used in this study.

Population, Area and Sample of the Study

The population of the study consisted of international nursing students (N=450) studying in the English Nursing Department (Undergraduate and Postgraduate) at Near East University in Northern Cyprus. The study period was nursing students, studying in the 2024-2025 academic year (November, 15 2024-January, 15, 2025).

Near East University was where the research conducted and it's the first University in Northern Cyprus to offer nursing programs at Undergraduate, Graduate and Doctoral levels. Established in 2008 under the Faculty of Health Sciences, the Department of Nursing became the first Faculty of Nursing in Northern Cyprus in 2018. It hosts students from a wide range of Nationalities, including Palestinians, Nigerians and others. The Faculty of Nursing offers bilingual education in Turkish and English. This population was chosen because this University has the highest number of international nursing students, both Undergraduate and Graduate students and it is the only nursing faculty in Northern Cyprus.

Determination of the Sample Size of the Study

The research population was consisting of 450 nursing students at University in Northern Cyprus who have volunteered to participate in the study. The sample size was calculated to be 212 but the study reached 240 students, based on a 95% confidence interval and a 5% margin of error.

Slovenes formula was used in order to determine sample size of the study.

$$n = \frac{N}{1+N\,(e)^{2}}$$

n = required sample size

N = Target population

e = sampling error.

$$n = \frac{450}{1+450(0.05)^{2}}$$

n = 211.765, 212, but reached 240 student participants.

Sample Selection Criteria

- The active Nursing student in the student registration system of Near East University.
- The international students at Near East University, Nursing Faculty in classes of 1, 2, 3, 4 and Masters/PhDs.
- The students who able to read and understand well the Data collection forms which was written in English language.
- The students who demonstrate willingness to participate and correctly completed the data collection form of the study.

Sample Exclusion Criteria

- The inactive Nursing student in the student registration system and the students from other faculties of Near East University.
- The National students.
- The Non-speakers of English language students.
- The students who did not demonstrate willingness to participate (3 Students) or incorrectly filled (7 Students) the data collection form of the study.

Data Collection Tools/Materials and Process

The data was collected by the researcher in face-to-face method using data collection tools. The data collection of the study was lasted between November 15, 2024 and December, 24 2024. The filling in of the Data collection Forms last for not more than 8 minutes. Data collection tools of this study; the information form of the students, the breastfeeding knowledge scale which was Gender Friendly Breastfeeding Knowledge (BKS) and the Iowa infant feeding attitudes scale was used in the study (See Appendix A).

Information Form of the Students.

The information form details of the study students which are included in the students consent form (include the participant: age, gender, religion, class, marital status, having children, breastfeeding experiences, breastfeeding training. (Appendix File A). This form was prepared by taking references from similar studies (Liu et al, 2022; Yang et al., 2019) and consisted of 9 questions.

Gender Friendly Breastfeeding Knowledge (BKS).

The BKS was designed to assess Gender Friendly Breastfeeding Knowledge scale among young adults (Gupta et al., 2021). The scale is composed of 18 items with a 5-point Likert scale to measure the degree of breastfeeding knowledge of young adults (1 = false, 2 = may be false, 3 = don't know, 4 = may be true, 5 = true). The statement was framed both positively and negatively to add variety and limit respondent reporting bias. May option was included to identify the Grey areas of knowledge. The positive items were scored 1, 2, 3, 4, 5. Then the negative items were rescored as 5, 4, 3, 2, 1. The total BKS score can range from 18 to 90 with higher scores reflecting positive attitude towards breastfeeding (80 and above = good, 65-80 = average, 50-65 = poor, and < 50 = no knowledge of breastfeeding of the participants of the study) (Gupta et al., 2021).

The content validity index (CVI) score of each the 18-items in the scale was greater than 0.80 indicating the instrument is a valid measure; in addition the Chronbach's alpha for the instrument was reported as ($\alpha = 0.787$) which showed the overall internal consistency of the Gender-Friendly Breastfeeding Awareness Scale (Gupta et al., 2021). In addition, the Cronbach's alpha value of Knowledge

score based on responses to the 18 items were found to be highly reliable (α = 0.76) in this study.

The Iowa Infant Feeding Attitudes Scale (IIFAS).

The IIFAS was designed by (Mora, A. D & Russell, D. W, 1999), to assess maternal attitude towards infant feeding methods and to predict breastfeeding intention and exclusivity. The scale is composed of 17 items with a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The total IIFAS score can range from 17 to 85 with higher scores reflecting positive attitude towards breastfeeding. Total IIFAS scores can be further categorized into groups: 1) positive to breastfeeding (IIFAS score 70–85), 2) neutral (IIFAS score 49–69), and 3) positive to formula feeding (IIFAS score 17–48) (Mora & Russell., 1999).

The Cronbach's alpha value of the complete attitude score based on responses to the 17 items were highly reliable (α = 0.85). Scores on the scale were found to be valid and highly associated with the composite score from the multi-attribute utility measure (r = 0.80) (Mora & Russell., 1999). In addition, the Cronbach's alpha value of attitude score based on responses to the 17 items were found t be highly reliable (α = 0.76) in our study.

Data Collection Procedure.

Prior of the data collection of the study, permission was obtained from the Faculty of Nursing. My supervisor the head of department advised to find out the total number of active Undergraduate, Postgraduate and PhD nursing students studying at the faculty of nursing to determine the population and sample size of the study. The number of active nursing students in the various classes was provided by the nursing faculty and it was used for the calculation of the sample size of the study. After this step, the application was made to the Near East University Ethical Committee and permission was granted on October 24, 2024.

The data was collected face-to-face by the researcher. The data was collected during regular class time of Classes 1, 2,3, 4 and Masters/ PhDs that was held on Monday, Thursday, and Friday between 9:00 Am to 4:00 Pm. After permission was granted from each Lecturer who was taking care of a specific class that the researcher when to collect data, the researcher introduced herself and stated the purpose of the study and also stated that to participate in the study, fluency in the

English language is required, and ask for the willing participation of the students in the study, students who were fluent in the English language put their hands up and the data collection forms was randomly distributed to the participants.

The data collection forms were retrieved after 25 minutes and sometimes after the class section ends. The researcher only counted the number of correctly filled forms and leaf incorrect forms and excluded it from the total Number analyzed. The total Number distributed was 250 forms of which 7 were incorrectly filled and 3 were not returned from the student during the data collection process and were excluded leaving a total of 240 for the final analysis. Lastly, all class instructors provided the needed support during the Data Collection process, however, the merely challenge the researcher experienced was that some students were not returned the distributed Data Collection forms.

Data Analysis Procedures

The data was analyzed using SPSS 27. After the data was input into SPSS, the data was checked to make decision on the appropriate statistical test. To check the Parametric assumptions of normality, the Histogram and Kolmogorov-Smirnov test was used. It was determined from those tests that the data was not normally distributed. Descriptive statistics were generated for the nursing student's respondent's information variables as well as the gender friendly breastfeeding knowledge scale and the Iowa infant feeding attitudes scale scores of the study. The study used Spearman and Scatter plot correlation analysis to show relationship between gender friendly breastfeeding knowledge scale and the Iowa infant feeding attitudes scale scores of the respondents. The Mann-Whitney U and Kruskal Wallis test were used to show the association between participants' information variables and the gender friendly breastfeeding knowledge scale and the Iowa infant feeding attitudes scale scores of the respondents.

The gender friendly breastfeeding knowledge scale was composed of 18 items with a 5-point Likert scale to measure the degree of breastfeeding knowledge of young adults (1 = false, 2 = may be false, 3 = don't know, 4 = may be true, 5 = true). The statement was framed both positively and negatively to add variety and limit respondent reporting bias. May option was included to identify the grey areas of knowledge. The positive items (1, 4, 5, 6, 8, 9, 10, 13, 14, and 18) were scored 1, 2,

3, 4, 5, but the negative items (3,7, 8, 11, 12, 15, 16, and 17) were rescored as 5, 4, 3, 2, 1. The all the items were summed up to represent the gender friendly breastfeeding knowledge which can range from 18 to 90 with higher scores of 80 and above = good, 65-80 = average, 50-65 = poor, and < 50 = no knowledge of breastfeeding of the participants of the study (Gupta et al., 2021).

The IIFAS scale was composed of 17 items with a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale had 9 negative items (1, 2, 4, 6, 8, 10, 11, 14 and 17) that were reverse scored 5, 4, 3, 2, 1, and 8 positive Items (3, 5, 7, 9, 12, 13, 15, and 16) that were scored 1, 2, 3, 4, 5, and then all the items were summed up to represent The total IIFAS score which can range from 17 to 85 with higher scores reflecting positive attitude towards breastfeeding was indicated by ranges 1) positive to breastfeeding (IIFAS score 70–85), 2) neutral (IIFAS score 49–69), and 3) positive to formula feeding (IIFAS score 17–48). (Moro et al., 1999).

The Ethical Aspect of the Study

A written permission was obtained from the Dean of Nursing Faculty and received approval from the Scientific Research Ethics Committee of the Near East University. (See Appendix B). Permission to use the scales was wrote from the owners of the scales (Appendix C). The study was conduct according to the guidelines of the World Medical Association Declaration of Helsinki Ethical Principles for Medical Research Involving Human Subjects.

CHAPTER IV

Findings

This chapter presents the characteristics of nursing students' participants of research and findings based on the collected data of the study.

Findings for Characteristics of Nursing Students

Table 2. Characteristics of Nursing Students

Variables	Categories	Frequency	Percentage
Gender	Male	67	27.9
	Female	173	72.1
Religion	Cristian	185	77.1
	Muslim	52	21.7
	Jewish	1	0.4
	Others*	2	0.8
Classes	Class 1	32	13.3
	Class 2	55	22.9
	Class 3	52	21.7
	Class 4	81	33.8
	Master/PhD	20	8.3
Marital status	Single	215	89.6
	Married	25	10.4
Having Children	Yes	24	10
	No	216	90
Having breastfeeding experience (If Yes)	Yes	35	14.6
	No	205	85.4
Have been breastfed by his/her Mother	Yes	177	73.8
	No	48	20.0
	I don't Know	15	6.2

Breastfeeding Education/training	Yes	86	73.8
	No	154	26.3
Sources of breastfeeding Education/training (n=86)	Bsc Nursing Education	82	34.2
	Mother	4	1.7

*The Two respondents indicated that they are Traditionalist and Atheist respectively.

In Table 2, the gender distribution of the nursing student respondents is shown as follows: 72.1% were female, while 27.9% were male; this shows that the majority of the respondents were female in this study. The age distribution of the 240 nursing student participants in the sample ranges from 17 to 41 years, with an average age of 24.21 years; the standard deviation was (4.89), indicating that the ages typically deviate from the mean by around 4.89 years. Based on the respondents' religious affiliation, 77.1% were Christian, 21.7% were Muslim, 2 were other religions, and only 1 were Jewish in this study. The nursing students' respondents' educational level (33.8%) were from Class 4, 22.9% were from Class 2, 21.7% were from Class 3, 13.3% were from Class 1, and only 8.3% were from master's and PhD Classes. Regarding the marital status of the nursing students, 89.6% were single, while only 10.4% were married. The parental status of the nursing students' respondents, 90.0%, indicated that they do not have children, while only 10.0% reported having children; this suggests that most participants did not have children in the study. Most nursing students' respondents (85.4%) did not have breastfeeding experience, while the remaining 14.6% had breastfeeding experience. In the breastfeeding history of the nursing students' respondents, 73.8% reported that their mothers breastfed them, while 20.0% indicated that their mothers did not breastfeed them, and 6.2% said they did not know. In the breastfeeding education of the nursing students' respondents, 64.2% stated that they had not received any formal training while only 35.8% reported that they had received formal training in the study. Regarding breastfeeding education, 35.8% of the total sample of the nursing students' respondents had received formal training and 34.2% had formal training from BSc nursing education classes while only 4 had training from their mothers.

Findings for research Question I & II

What is the level of breastfeeding knowledge and attitudes among nursing students?

Table 3. The descriptive Statistics of Nursing student' scores on the Gender Friendly Breastfeeding Knowledge (BKS) and The Iowa Infant Feeding Attitudes Scale (IIFAS) (n=240)

	X	S	Min	Max	Range
Gender Friendly Breastfeeding Knowledge (BKS) Scale	77.10	8.23	49.00	90.00	18-90
The Iowa Infant Feeding Attitudes Scale (IIFAS)	58.49	6.72	33.00	82.00	17-85

X=mean, S= Standard Deviation, Mix=Minimum, Max=Maximum

The above Table 3 shows the nursing students participant's scores on Gender friendly breastfeeding knowledge and Iowa Infant feeding attitude scales.

The minimum score of the nursing students' participants in the Gender friendly breastfeeding knowledge scale was 49, the maximum was 90, and the range for the scale is 18-90 while the mean and standard deviation were 77.10 and 8.23 respectively. The gender friendly breastfeeding knowledge scale score of the 240 respondents in this study was 77.10. Therefore, the nursing students' score of Gender Friendly Breastfeeding Knowledge (BKS) was good (80 and above points).

The minimum score of the nursing students' participants in the Iowa infant feeding attitudes scale was 33, the maximum was 82, and the range for the scale is 17-85 while the mean and standard deviation was 58.49 and 6.72 respectively. The Iowa infant feeding attitudes scale score of the 240 respondents in this study was 58.49, therefore, the nursing students' score of the Iowa Infant feeding attitude scales was neutral (IIFAS Score 49-69 points).

Findings for research Question III

What are the relationships between the level of knowledge and attitudes of breastfeeding among nursing students?

Table 4. The Spearman's Correlations between the Gender Friendly Breastfeeding Knowledge and Iowa Infant Feeding Attitudes Scales (240)

Gender Friendly Breastfeeding Knowledge Scale	r	*p*
Iowa Infant Feeding Attitudes Scale	0.395*	0.000

*Correlation is significant at the 0.05 level (2-tailed).

In Table 4 The correlation analysis of gender friendly breastfeeding knowledge and Iowa infant feeding attitudes of the respondents is shown; the results showed a weak but statistically significant relationship (r = 0.395; p = 0.000) between knowledge and attitudes of the nursing student respondents.

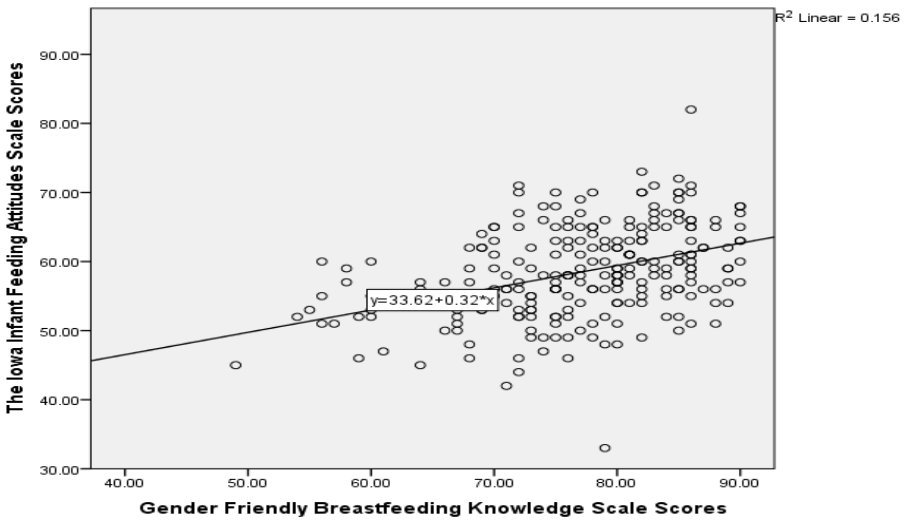

Figure 3. Scatter Plot of Gender Friendly Breastfeeding Knowledge Score and The Iowa Infant Feeding Attitudes Scale Scores of the Respondents (n=240)

The Figure 3**,** represents the relationship between gender friendly breastfeeding knowledge scale score (X-axis) and the Iowa infant feeding attitudes scale (Y-axis), each point on the chart represents an individual observation, the equation of the regression line (Y=33.62 + 0.32X) indicates for every 1 unit increase in gender friendly breastfeeding knowledge, Iowa infant feeding attitudes of the respondents is expected to increase by 0.32 units on average. The positive slope (0.32) suggest that as gender friendly breastfeeding knowledge increases the Iowa infant feeding attitudes also tend to increase, however because the R2 is 0.156 it means that 15.6% of the variance in the Iowa infant attitudes is explained by the gender friendly breastfeeding knowledge and this means a weak positive relationship between the two variables; in other words, the relationship is statistically present but not strong between the variables.

Findings for research Question IV

What are the relationships between the level of knowledge and attitudes of breastfeeding among nursing students and Socio-demographic variables?

Table 5. The Spearman's Correlations between the Gender Friendly Breastfeeding Knowledge and Iowa Infant Feeding Attitudes Scales and age (n= 240)

Gender Friendly Breastfeeding Knowledge Scale	**r**	**P**
Age	0.172*	0.007
Iowa Infant Feeding Attitudes Scale	r	P
Age	0.112*	0.084

* Correlation is significant at the 0.05 level (2-tailed).

In Table 5, The correlation analysis of gender friendly breastfeeding knowledge and age and the Iowa Infant Feeding Attitudes Scale and age of the respondents is shown; the results of gender friendly breastfeeding knowledge and age showed a weak but statistically significant relationship (r = 0.72; p = 0.007) between knowledge and the age of the respondents, but the results of the Iowa Infant Feeding

Attitude Scale and age do not show statistically significant relationship (r = 0.112; p = 0,084) between Attitude and the age of the nursing students' respondents.

Table 6. The comparison of Nursing Students' points taken from the Gender friendly breastfeeding Knowledge scale by Socio-demographic characteristics

Variables	**Categories**	**N**	**Mean Rank**	**Kruskal Wallis Test X^2**	**P-value**
Gender	Male	67	105.30	4.802	0.091
	Female	172	126.15		
	Others	1	166.50		
Religion	Cristian	185	133.22	28.401	0.000
	Muslim	52	78.23		
	Jewish	1	7.00		
	Others	2	99.50		
Classes	Class 1	32	79.17	29.789	0.000
	Class 2	55	94.22		
	Class 3	52	135.94		
	Class 4	81	140.14		
	Master/PhD	20	139.23		
Have been breastfed by his/her mother	Yes	177	128.18	8.363	0.15
	No	48	100.52		
	I don't know	15	93.87		
Variables	**Categories**	**N**	**Mean Rank**	**Mann-Whitney U test Z**	**P-value**
Marital status	Single	215	117.21	-2.207	0.027
	Married	25	150.15		
Having Children	Yes	24	160.67	-2.991	0.003

	No	216	116.04		
Having breastfeeding experience (If Yes)	Yes	35	126.07	-0.523	0.601
	No	205	119.52		
Breastfeeding Education/training	Yes	86	160.28	-6.640	0.000
	No	154	98.29		
Sources of breastfeeding Education/training	Mother	4	23.88	-1.614	0.106
	Bsc Nursing Education	82	44.46		

In Table 6, it was shown the Comparison of nursing students' scores taken from the gender friendly breastfeeding knowledge scales by, gender, religion, classes, marital status, having children, having breastfeeding experience, have been breastfeed by their mothers, having received formal training in breastfeeding and the source of breastfeeding education of the nursing student respondents. According to the findings gender does not have a significant association with breast feeding knowledge ($p>0.05$) even though female students tend to have higher mean ranks than the male students. Religion of the students was found to be associated with their breastfeeding knowledge and the association was statistically significant ($p<0.05$), Christian students have higher breastfeeding knowledge scores compared to the other religions in the study. Regarding to the classes of the students, a statistically significant association was found between the classes of the respondents and their breastfeeding knowledge score ($p< 0.05$), higher class levels (3,4, and Master/PhD) had higher scores compared to the lower classes (class 1 and 2). From the study findings, marital status influences students breastfeeding knowledge and the influence was statistically significant ($p<0.05$), married students had higher breastfeeding knowledge scores than those that were single. The findings also showed having children was significantly associated with knowledge of breastfeeding ($p<0.05$), as those that have children among the respondents were having higher breastfeeding knowledge score. Receiving breastfeeding training was

associated with higher breastfeeding knowledge and the association was statistically significant ($p<0.05$), those that received the breastfeeding training were having higher breastfeeding knowledge scores than those that did not received such training. Breastfeeding experience and sources of receiving breastfeeding training were all not significantly associated with the respondents' knowledge of breastfeeding ($p>0.05$).

Table 7. The comparison of Nursing Students' points taken from the Iowa Infant Feeding Attitude Scale (IIFAS) by Socio-demographic characteristics

Variables	**Categories**	**N**	**Mean Rank**	**Kruskal Wallis Test X^2**	**P-value**
Gender	Male	67	127.13	1.283	0.527
	Female	172	118.19		
	Others	1	72.50		
Religion	Cristian	185	126.13	6.422	0.093
	Muslim	52	102.94		
	Jewish	1	29.50		
	Others	2	101.75		
Classes	Class 1	32	94.56	7.247	0.123
	Class 2	55	118.35		
	Class 3	52	128.10		
	Class 4	81	121.83		
	Master/PhD	20	142.78		
Have been breastfed by his/her mother	Yes	177	125.89	4.140	0.126
	No	48	106.67		
	I don't know	15	101.20		
Variables	**Categories**	**N**	**Mean Rank**	**Mann-Whitney U test Z**	**P-value**
Marital status	Single	215	119.22	-.860	0.390
	Married	25	132.04		

Having Children	Yes	24	138.19	-1.317	0.188
	No	216	118.53		
Having breastfeeding experience (If Yes)	Yes	35	122.97	-.232	0.817
	No	205	120.06		
Breastfeeding Education/training	Yes	86	136.06	-2.598	0.009
	No	154	111.81		
Sources of breastfeeding Education/training	Mother	4	46.50	-.247	0.805
	Bsc Nursing Education	82	43.35		

In Table 7, it was shown the Comparison of nursing students' scores taken from the Iowa Infant Feeding Attitudes Scale scores by gender, religion, classes, marital status, having children, having breastfeeding experience, have been breastfeed by their mothers, having received formal training in breastfeeding and the source of breastfeeding education of the nursing student respondents.

The Gender, religion, classes, marital status, having children, having breastfeeding experience, have been breastfeed by their mothers, and the source of breastfeeding education were all not significantly associated with Students' Iowa Infant Feeding Attitude Scale scores ($p>0.05$). Receiving breastfeeding training was associated with higher attitude score and the association was statistically significant ($p<0.05$), those that received breastfeeding training were having higher IIFAS scores than those that did not received such training in this study.

CHAPTER V

Discussion

This chapter presents the Discussion of the findings based on comparing and contrasting the results with those from previous studies. In this study, the majority of Nursing students' respondents were female which reveals a standard profile of a young female nursing students in the nursing program (Table 2). The majority of Nursing students' respondents did not have children and breastfeeding experience, their mothers breastfed them, had not received any formal breastfeeding training and respondents received formal breastfeeding training obtained from BSc nursing education classes (Table 2). It is notable that most students lacked personal experience with childbearing in breastfeeding. This is possibly a limiting factor with respect to having breastfeeding permissiveness which challenges the nuances of breastfeeding. It does, however, allow for the possibility that education can fill that void and act as a basis of knowledge instead of personal experience. This addresses the necessity of quality teaching methods that are able to simulate or realistically portray the breastfeeding process. the formal education of the students that was via the BSc course highlights the enormous responsibility and the influence of nursing education in shaping future nurses' attitudes, knowledge, and skills in breastfeeding support and the quality and extent of this training become paramount. The sources of knowledge encompassed the education and training acquired by the students was during their nursing courses (Bowdler, et al 2022).

Discussion of Research Question I

The nursing students' score of Gender Friendly Breastfeeding Knowledge (BKS) was good (80 and above points) (Table 3). As seen from the research results, the nursing students have good knowledge and the degree of knowledge can be influenced by the nursing program enhances students' competence through intensive study in nursing, practical exposure together with first-hand acquaintance with concepts of breastfeeding, the instructor's competence, learning resource accessibility, students' exhibition of both high level of motivation and an enormous passion for mother care and conducive environment enhances the acquisition of

knowledge through active, collaborative, and stimulating contexts. Supporting the findings of this study there were several other studies with similar findings found that the nursing students had good breastfeeding knowledge. A descriptive cross-sectional study conducted by Leshi and Makanjuola, (2022) and included 142 Nursing Students at the Mater Misericordiae Nursing School in Ebonyi State, southeastern Nigeria, determined that the majority (81%) of the nursing students had good breastfeeding knowledge. The researcher argued that the respondents' good knowledge in the study might be ascribed to the students' exposure to breastfeeding subjects through their nursing curriculum or their placements in prenatal and postnatal clinics, which likely enhanced their breastfeeding knowledge. A descriptive cross-sectional questionnaire survey conducted by Yang et, al (2024) among 428 undergraduate nursing students from 22 Medical Colleges or Universities in various regions In China evaluated the breastfeeding knowledge, attitudes and perceptions of breastfeeding education determined that (54.80%) of the participants had good breastfeeding knowledge. In contrast to this study results there were several researches showed that nursing students had insufficient breastfeeding knowledge. A cross-sectional design study conducted by Elareed and Senosy (2020) and participated 800 Undergraduate Nursing students from faculty of Nursing, Beni-Suef University in Egypt to assess knowledge and attitude regarding the breastfeeding determined that the 80.2% of the students had poor breastfeeding knowledge. Moreover, the researcher suggested that the poor breastfeeding knowledge may stem from the limited coverage of breastfeeding and nutrition in the nursing curriculum, as well as a lack of practical experience that enhances their breastfeeding knowledge and skills. This underscores the significance of breastfeeding instruction and its impact on enhancing nursing students' understanding and subsequent behaviors. In an observational, descriptive, cross-sectional study conducted by Cervera-Gasch, et.al., (2021), which included 684 respondents of nursing students registered in three Spanish Universities, had determined poor breastfeeding knowledge. The study suggested that it is essential for nursing students to obtain adequate training in breastfeeding to identify the needs of women across all levels of healthcare and deliver the necessary support and argued that this may be due to increased focus on midwives' efforts to support women in breastfeeding during the prenatal and postpartum periods. In NEU, department of Nursing curriculum, breastfeeding is covered in women's health and child health nursing courses. The students

breastfeeding knowledge was good because the teaching of breastfeeding education was simulated the results.

Discussion of Research Question II

The nursing students' score of the Iowa Infant feeding attitude scales was neutral (IIFAS Score 49-69 points) (Table 3). In some cases, having enough knowledge does not reflects in positive attitudes and having positive attitudes does not always reflects having enough knowledge. The personal beliefs, past experiences and cultural influence were might be the factors contributing the nursing students' Neutral breastfeeding attitudes. The insufficient incorporation of breastfeeding education into nursing school curricula significantly contributes to the lack of positive attitudes towards breastfeeding (Mulcahy et al., 2022).

For Supporting the findings of this study there were no previous studies with neutral findings towards nursing students' breastfeeding attitudes. However, in contrast to the study results there were several researches showed that nursing students had insufficient or sufficient breastfeeding attitudes. A descriptive cross-sectional study conducted by Leshi and Makanjuola, (2022) and included 142 Nursing Students at the Mater Misericordiae Nursing School in Ebonyi State, southeastern Nigeria, determined that 56.3% of the students had poor breastfeeding attitudes. The researchers contested that the poor breastfeeding attitude may be associated with cultural beliefs and misconceptions around breastfeeding. A cross-sectional design study conducted by Elareed and Senosy (2020) and participated 800 Undergraduate Nursing students from faculty of Nursing, Beni-Suef University in Egypt to assess knowledge and attitude regarding the breastfeeding determined that the 54.4% of the students had poor breastfeeding attitudes. The researcher argued that the students' poor breastfeeding attitudes stem from the participants' poor breastfeeding knowledge in the study. A descriptive cross-sectional questionnaire survey conducted by Yang et, al (2024) among 428 undergraduate nursing students from 22 Medical Colleges or universities in various regions In China evaluated the breastfeeding knowledge, attitudes and perceptions of breastfeeding education determined that the most students' participants (96.96%) had good breastfeeding attitudes. This study suggests the small sample size, the personal beliefs, past

experiences and cultural influence were might be the factors contributing the nursing students' Neutral breastfeeding attitudes.

Discussion of Research Question III

The correlation analysis of gender friendly breastfeeding knowledge and Iowa infant feeding attitudes of the respondents' the results showed a weak but statistically significant relationship (r = 0.395; p = 0.000) between knowledge and attitudes of the nursing students (Table 4 and Figure 3). On the other hand, the equation of the regression line of breastfeeding knowledge and attitudes indicates for every 1 unit increase in breastfeeding knowledge is expected to increase breastfeeding attitudes by 0.32 units on average (Figure 4). The researcher argues that the relationship of attitude and knowledge requiring effort to simplify. In some cases, having enough knowledge does not reflects in positive attitudes and having positive attitudes does not always reflects having enough knowledge. The factors including personal beliefs, past experiences and cultural influence were contributing these issues. Near East University students are mostly international students from different countries and communities in Africa which is the reason of cultural overlapping, similar personal views and past experiences might course the significance relationship between knowledge and attitudes. For Supporting the findings of this study there some studies with similar results. Khresheh, (2020) found a significant relationship breastfeeding knowledge and attitude ($r = 0.896$, $p < 0.01$), and also Elareed and Senosy, (2020), found a statistically significant association between the score of knowledge and attitude (p=0.001). In contrast from this study, no statistically significant difference was observed between knowledge and attitude of the nursing students (Leshi and Makanjuola, 2022).

Discussion of Research Question IV

The results of Nursing Students' gender friendly breastfeeding knowledge and age showed a weak but statistically significant relationship between knowledge and age in the study (r = 0.72; p = 0.007) (Table 5). However, the results of the Iowa Infant Feeding Attitude Scale and age do not show statistically significant

relationship between Attitude and the age of the nursing students' respondents (r = 0.112; p = 0,084) (Table 5).

The Nursing Students' Gender does not have a significant association with breastfeeding knowledge (p>0.05) (Table 6). The female students tend to have higher mean ranks than the male students. This is consistent with Elareed and Senosy, findings as the obtained p-value was 0.827, and was found a statistically significant association between gender and the score of knowledge, (p=0.03) (Elareed and Senosy, 2020). However, the Nursing Students' Gender was not significantly associated with Students' Iowa Infant Feeding Attitude Scale scores (p>0.05) (Table 7). The Religion of the Nursing students was found to be associated with their breastfeeding knowledge and the association was statistically significant (p<0.05) (Table 6). The Christian students have higher breastfeeding knowledge scores compared to the other religions. However, the religion of the Nursing students was not significantly associated with Students' Iowa Infant Feeding Attitude Scale scores (p>0.05) (Table 7). Regarding to the classes of the students, a statistically significant association was found between the classes of the respondents and their breastfeeding knowledge score (p< 0.05) (Table 6). the higher-class levels (3,4, and Master/PhD) had higher scores compared to the lower classes (class 1 and 2). For Supporting the findings of this study, a previous study showed that a Significantly higher knowledge scores were observed among senior students (p = 0.004) (Khresheh, 2020). However, the classes of the students were not significantly associated with Students' Iowa Infant Feeding Attitude Scale scores (p>0.05) (Table 7). The marital status influences students' breastfeeding knowledge and the influence was statistically significant (p<0.05) (Table 6). The married students had higher breastfeeding knowledge scores than those who were Single. However, The Marital Status of the nursing students was not significantly associated with Students' Iowa Infant Feeding Attitude Scale scores (p>0.05) (Table 7). The findings showed having children was significantly associated with knowledge of breastfeeding (p<0.05) (Table 6). The students who have children among the respondents were having higher breastfeeding knowledge scores then those who have no children in the study. For Supporting the findings of this study, a previous study showed that having children was Significantly associated with breastfeeding knowledge (Khresheh, 2020). However, having children was not significantly associated with Students' Iowa Infant Feeding Attitude Scale scores (p>0.05) (Table 7). The receiving breastfeeding training was associated with higher

breastfeeding knowledge and the association was statistically significant ($p<0.05$) (Table 6). The students received the breastfeeding training were having higher breastfeeding knowledge scores than those did not received such training. Similarly, receiving breastfeeding training was associated with higher attitude score and the association was statistically significant ($p<0.05$), those students that received breastfeeding training were having higher IIFAS scores than those that did not received such training in this study. Breastfeeding experience have been breastfed by their mothers and sources of receiving breastfeeding training were all not significantly associated with the respondents' knowledge of breastfeeding ($p>0.05$) (Table 6). Similarly, having breastfeeding experience, have been breastfeed by their mothers, and the source of breastfeeding education were all not significantly associated with Students' Iowa Infant Feeding Attitude Scale scores ($p>0.05$) (Table 7). In contrast of the results of this study, a previous study showed that having children and being breastfed as infants and the class levels were Significantly associated with breastfeeding attitudes ($p = 0.05$) (Khresheh, 2020).

CHAPTER VI

Conclusion and Recommendations

This chapter presents conclusions based on the research findings according to the objective and sub objectives of the research and gives recommendations accordingly.

Conclusions

- In the study, the age distribution of the 240 nursing student participants in the sample ranges from 17 to 41 years, with an average age of 24.21 years; the standard deviation was (4.89), indicating that the ages typically deviate from the mean by around 4.89 years.
- The majority of the nursing student participants (72.1%) were female, (77.1%) were Christian, (33.8%) were from Class 4, (89.6%) were single Students.
- In the findings (90.0%) of nursing students' participants did not have children, (85.4%) did not have breastfeeding experience, (73.8%) breastfed by their mothers, (64.2%) had not received any formal breastfeeding training, and lastly the minority students whom had formal breastfeeding training received from BSc nursing education classes.
- The minimum score of the nursing students' participants in the Gender friendly breastfeeding knowledge scale was 49, the maximum was 90, and the range for the scale is 18-90 while the mean and standard deviation were 77.10 and 8.23. The gender friendly breastfeeding knowledge scale score of the 240 respondents in this study was 77.10. the nursing students' score of Gender Friendly Breastfeeding Knowledge (BKS) was good (80 and above points).
- The minimum score of the nursing students' participants in the Iowa infant feeding attitudes scale was 33, the maximum was 82, and the range for the scale is 17-85 while the mean and standard deviation was 58.49 and 6.72. The Iowa infant feeding attitudes scale score of the 240 respondents in this study was 58.49. the nursing students' score of the Iowa Infant feeding attitude scales was neutral (IIFAS Score 49-69 points).

- The study the results showed a weak but statistically significant relationship ($r = 0.395$; $p = 0.000$) between knowledge and attitudes of the nursing student respondents.
- The study results of gender friendly breastfeeding knowledge and age showed a weak but statistically significant relationship ($r = 0.72$; $p = 0.007$) between knowledge and the age of the respondents, but the results of the Iowa Infant Feeding Attitude Scale and age do not show statistically significant relationship ($r = 0.112$; $p = 0,084$) between Attitude and the age of the nursing students' respondents.
- In the study results, the Religion of the students was found to be associated with their breastfeeding knowledge and the association was statistically significant, but not significantly associated with Students' Attitudes ($p>0.05$).
- In the study results Regarding to the classes of the students, a statistically significant association was found between the classes of the respondents and their breastfeeding knowledge score, but not significantly associated with Students' Attitude score ($p>0.05$).
- From the study findings, marital status influences students breastfeeding knowledge and the influence was statistically significant ($p<0.05$), but not significantly associated with Students' Attitude score ($p>0.05$).
- The findings showed having children was significantly associated with knowledge of breastfeeding, but not significantly associated with Students' Attitudes ($p>0.05$).
- The findings showed receiving breastfeeding training was associated with higher breastfeeding knowledge and the association was statistically significant, but not significantly associated with Students' Attitudes ($p>0.05$).
- The findings showed the sources of receiving breastfeeding training were not significantly associated with the respondents' knowledge of breastfeeding, but there were significantly associated with Students' Attitudes ($p>0.05$).

Recommendations According to Findings

The following are recommendations based on findings from the study, aimed at maintaining the knowledge and strengthening attitude toward breastfeeding of nursing students:

- In this study, the results indicated good breastfeeding knowledge among nursing students. Therefore, its recommended to maintain and transform that knowledge into practical nursing techniques.
- As the results of this study, which revealed that the Nursing students had neutral breastfeeding attitudes, its recommended that organizing seminars and workshops focusing misconceptions, as well as cultural influences in the Nursing faculty cold encourage students grasp better breastfeeding permissiveness and develop positive attitudes.
- According to the research result which showed a weak but statistically significant relationship between knowledge and attitudes of the nursing student respondents, its recommended more educational interventions beyond knowledge acquisition, target attitudinal shifting, strengthen the link between knowledge and attitudes is needed in the nursing programs.
- In the study results, the factors that statistically influenced the Nursing students' breastfeeding knowledge were the age, Religion, classes, marital status, having children, receiving breastfeeding training, and factors that statistically influenced the Nursing students' breastfeeding attitudes was Receiving breastfeeding training and students that received breastfeeding training were having higher attitude scores than those that did not received such training, hence, its recommended early breastfeeding education, injecting religious education in the curriculum, marrying proper time, having children and receiving breastfeeding training can boost the breastfeeding knowledge and attitudes of nursing students. For instance, As found in this research the higher-class levels (3,4, and Master/PhD) had higher breastfeeding knowledge and attitude scores compared to the lower classes (class 1 and 2), therefore, its recommended that an early stage breastfeeding education should be provided to Nursing students.

Recommendations According for Future Studies

In this study, there were good breastfeeding knowledge and neutral breastfeeding attitude scores, thus its recommended:

- To conduct similar studies in other universities and colleges providing Nursing Programs to understand more about the breastfeeding knowledge and attitudes of Nursing Students in Northern Cyprus.
- To perform longitudinal, Experimental and qualitative studies with large sample sizes analyzing the breastfeeding knowledge and attitudes of Nursing students.

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Appendix A: Data Collection Tools/Forms

Dear Respondents,

We are Ikran Ali Adan, we are currently conducting a study on '*Evaluation of Breastfeeding Knowledge, and Attitudes among Nursing Students at a University in Northern Cyprus'*. It's a graduation Thesis for masters at Near East University, department of nursing. My supervisor name is Assoc. Prof. Dr. Dilek Sarpkaya Güder. Dear respondent, you have been selected to participate this study and answer the questionnaire. Information shared will be kept confidential and will only be used for the purpose of the study. I kindly request you to answer all questions as honesty as possible. We respectfully ask for your help in marking the boxes with the proper responses by following the provided instructions. Your input, viewpoints, and experiences will only be used for this academic study and will be kept private.

Respectfully yours;

We appreciate you taking the time to participate the study,

Master Student: Ikran Ali Adan
Contact: 20226653@std.neu.edu.tr

A. Information Form of the Students

Please answer the questions completely.

1. Age…….
2. Gender
   o Male o Female o Others
3. Religion
   o Christian o Muslim o Jewish o Other
4. Class
   o 1. o 2. o 3. o 4. o Master/Phd students
5. Marital Status o Single o Married
6. Having Children:
   o Yes
   o No
7. Having breastfeeding experience (If Yes):
   o Yes
   o No
8. Having been breastfed by her/his mother:
   o Yes o No o I don't know
9. Have you received any formal training in breastfeeding?
   o Yes……Please explain where you received it from……
   o No

B. Gender Friendly Breastfeeding Knowledge Scale (Gupta et al., 2021).

Item No.	Gender Friendly Breast-Feeding Knowledge scale	Tick any one				
		True	May be true	Don't know	May be false	False
1	Mother milk is best for the baby					
2	Mother milk is not easily digested by the child					
3	Breastfeeding cause breast and ovarian cancer to mother					
4	Child should be breastfed as early as possible soon after birth					
5	Colostrum (breast milk secreted immediately after delivery) should not be discarded					
6	Breastfeeding improves immunity of the child					
7	Breastfeeding has no role in lactational amenorrhea/ family planning/ avoiding immediate pregnancy for 6 months after delivery					
8	Mother milk improves the intelligence (IQ) of child					
9	Breastfeeding promotes bonding between mother and baby					
10	Breastfeeding reduces sickness in mother and baby					
11	Father should not support the mother in breastfeeding					
12	Breastfeeding decreases work productivity/ earnings/ working days of family					

Item No.	Gender Friendly Breast-Feeding Knowledge scale	Tick any one				
		True	May be true	Don't know	May be false	False
13	Exclusive breastfeeding is giving only breast milk for first 6 months of life/child/ baby/ age					
14	Child can be breastfed up to 2 years					
15	Mother cannot continue breastfeeding after starting the supportive/complementary feeding from 6 months of life					
16	Breastfeeding increases health related expenses of the family					
17	Breastfeeding should be given only when child cries					
18	As a future parent you are decision maker in facilitating breastfeeding					

C. The Iowa Infant Feeding Attitudes Scale (IIFAS) (Moro et al., 1999).

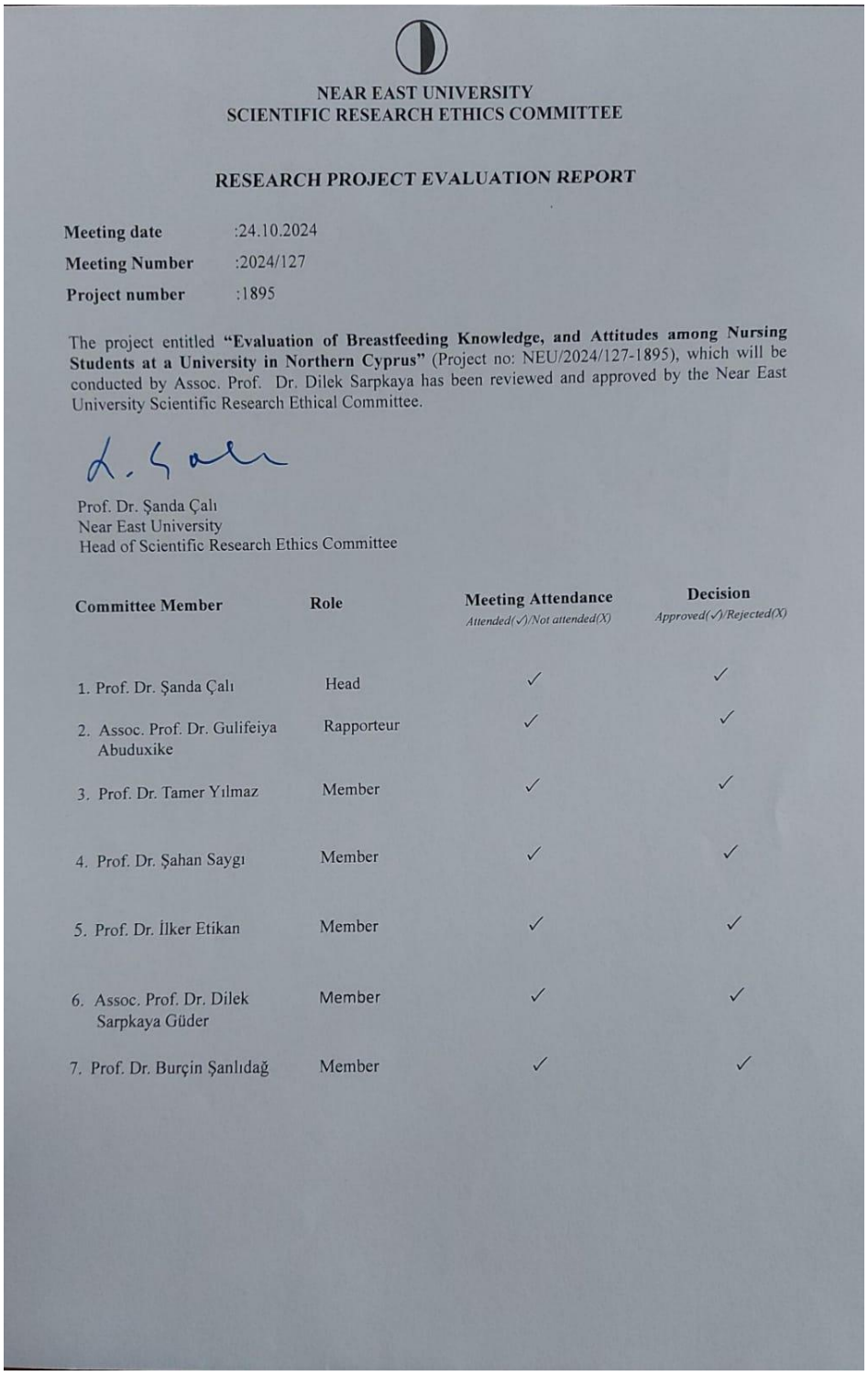
For each of the following statements, please indicate how much you agree or disagree by circling the number that most closely corresponds to your opinion. (1=strongly disagreement [SD], 2=disgreement [D], 3=Neutral [N], 4=agreement [A], 5=stongly agreement [SA]). You may choose any number from 1-5.

Item No.	The Iowa Infant Feeding Attitudes Scale (IIFAS)					
		SD	D	N	A	SA
1	Neutrational benefits of breast milk last only untill the baby is weaned from from breast milk.	1	2	3	4	5
2	Formula feeding is more convenient than breast-feeding.	1	2	3	4	5

Item No.	The Iowa Infant Feeding Attitudes Scale (IIFAS)					
		SD	D	N	A	SA
3	Breastfeeding increases mother-infant bonding.	1	2	3	4	5
4	Breat milk is lucking in Iron	1	2	3	4	5
5	Formula-fed babies are more likely to be overfed than breast-fed babies.	1	2	3	4	5
6	Formula-feeding is better choice if a mother plans to work outside the home.	1	2	3	4	5
7	Mothers who formula-feed miss one of the great choices of motherhood.	1	2	3	4	5
8	Women should not breast-feed in public places such as Restaurants.	1	2	3	4	5
9	Babies fed breast milk are healthier than babies who are fed formula.	1	2	3	4	5
10	Breast-fed babies are more likely to be overfed than formula-fed babies.	1	2	3	4	5
11	Mothers feel left out if a mother breast-feeds.	1	2	3	4	5
12	Breast milk is the ideal food for babies.	1	2	3	4	5
13	Breast milk is more easily digested than formula.	1	2	3	4	5
14	Formula is as healthy as for an infant as breast milk.	1	2	3	4	5
15	Breast-feeding is more convenient than formula feeding.	1	2	3	4	5
16	Breast milk is less experience than formula.	1	2	3	4	5
17	A mother who occasionally drinks alcohol should not breast-feed her baby.	1	2	3	4	5

Thank you for your responses.

Appendix B: Ethical approval later



NEAR EAST UNIVERSITY
SCIENTIFIC RESEARCH ETHICS COMMITTEE

RESEARCH PROJECT EVALUATION REPORT

Meeting date :24.10.2024
Meeting Number :2024/127
Project number :1895

The project entitled **"Evaluation of Breastfeeding Knowledge, and Attitudes among Nursing Students at a University in Northern Cyprus"** (Project no: NEU/2024/127-1895), which will be conducted by Assoc. Prof. Dr. Dilek Sarpkaya has been reviewed and approved by the Near East University Scientific Research Ethical Committee.

Prof. Dr. Şanda Çalı
Near East University
Head of Scientific Research Ethics Committee

Committee Member	Role	Meeting Attendance *Attended(✓)/Not attended(X)*	Decision *Approved(✓)/Rejected(X)*
1. Prof. Dr. Şanda Çalı	Head	✓	✓
2. Assoc. Prof. Dr. Gulifeiya Abuduxike	Rapporteur	✓	✓
3. Prof. Dr. Tamer Yılmaz	Member	✓	✓
4. Prof. Dr. Şahan Saygı	Member	✓	✓
5. Prof. Dr. İlker Etikan	Member	✓	✓
6. Assoc. Prof. Dr. Dilek Sarpkaya Güder	Member	✓	✓
7. Prof. Dr. Burçin Şanlıdağ	Member	✓	✓

Appendix C:

24 Mar 2025 Pzt 7:29 AM tarihinde Dr Arti Gupta Reddy <guptaarti2003@aiimsmangalagiri.edu.in> şunu yazdı:

> Hi Dr. DİLEK
>
> I permit you to use the Gender-Friendly Breastfeeding Knowledge Scale.
> Please ensure reference and acknowledgment are made to the Gender-Friendly Breastfeeding Knowledge Scale article's corresponding author.
>
> On Mon, Mar 24, 2025 at 12:52 AM DİLEK SARPKAYA GÜDER <dilek.sarpkaya@neu.edu.tr> wrote:
>
> ---------- Forwarded message ---------
> Gönderen: **DİLEK SARPKAYA GÜDER** <dilek.sarpkaya@neu.edu.tr>
> Date: 3 Eki 2024 Per, 21:48
> Subject: Scale Permission
> To: guptaarti2003@aiimsmangalagiri.edu.in <guptaarti2003@aiimsmangalagiri.edu.in>
>
> Dear Dr. Gupta,
> We are planning to conduct a study on the knowledge levels of students among nursing students studying in English at a private university in N
> Gender Friendly Breastfeeding Knowledge scale. We kindly request that the necessary permissions be given and the original scale be sent.
> We will be looking forward to your message.
>
> Best Regards
> Assoc. Prof. Dr. Dilek SARPKAYA GÜDER

DİLEK SARPKAYA GÜDER <dilek.sarpkaya@neu.edu.tr> 23 Mar Paz 21:50 (18 saat önce)
Alıcı: drussell

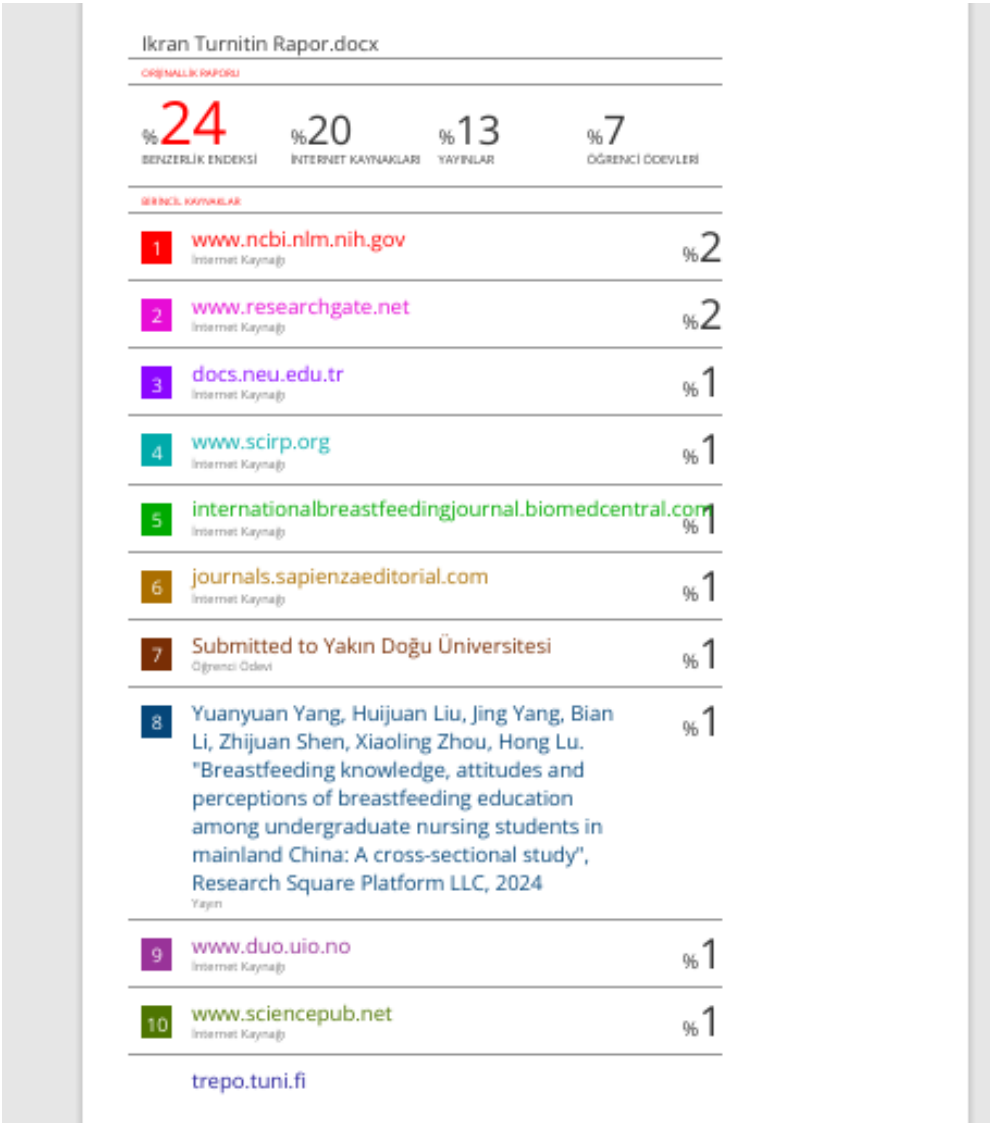
Dear Dr. Russel,
We are planning to conduct a study on the knowledge levels of students among nursing students studying in English at a private university in Northern Cyprus. We planed to use the **Iowa Infant Feeding Attitude Scale** . We kindly request that the necessary permissions be given and the original scale be sent.
We will be looking forward to your message.

Best Regards
Assoc. Prof. Dr. Dilek SARPKAYA GÜDER

--
Sevgi ve Saygılarımla

Doç. Dr. (Assoc. Prof. Dr.) Dilek SARPKAYA GÜDER
Hemşirelik Fakültesi, Dekan Yardımcısı/Nursing Faculty-Vice Dean
Doğum ve Kadın Sağlığı ABD Başkanı/Head of Department of Obstetrics and Gynecology
Cinsel Sağlık Hizmet Birimi Başkanı/Head of Sexual Health Service Unit
Yakın Doğu Üniversitesi/Near East University

Appendix D: Similarity Report



Ikran Turnitin Rapor.docx

ORİJİNALLİK RAPORU

%24	%20	%13	%7
BENZERLİK ENDEKSİ	İNTERNET KAYNAKLARI	YAYINLAR	ÖĞRENCİ ÖDEVLERİ

BİRİNCİL KAYNAKLAR

1	www.ncbi.nlm.nih.gov İnternet Kaynağı	%2
2	www.researchgate.net İnternet Kaynağı	%2
3	docs.neu.edu.tr İnternet Kaynağı	%1
4	www.scirp.org İnternet Kaynağı	%1
5	internationalbreastfeedingjournal.biomedcentral.com İnternet Kaynağı	%1
6	journals.sapienzaeditorial.com İnternet Kaynağı	%1
7	Submitted to Yakın Doğu Üniversitesi Öğrenci Ödevi	%1
8	Yuanyuan Yang, Huijuan Liu, Jing Yang, Bian Li, Zhijuan Shen, Xiaoling Zhou, Hong Lu. "Breastfeeding knowledge, attitudes and perceptions of breastfeeding education among undergraduate nursing students in mainland China: A cross-sectional study", Research Square Platform LLC, 2024 Yayın	%1
9	www.duo.uio.no İnternet Kaynağı	%1
10	www.sciencepub.net İnternet Kaynağı	%1
	trepo.tuni.fi	