THE EFFECT OF GUIDED BREASTFEEDING EDUCATION ON SKILL AND ATTITUDE TOWARDS BREASTFEEDING PRACTICE AMONG FIRST-TIME MOTHERS IN JORDAN

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UNIVERSITI SAINS MALAYSIA

2021

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by

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Thesis submitted in fulfilment of the requirement

for the degree of

Master of Science

October 2021

ACKNOWLEDGEMENT

In the name of Allah, Most Gracious and Most Merciful.

I am deeply indebted to all the people who have helped in the completion of this thesis. I am deeply grateful to my supervisor, Mrs. Salwismawati Bt. Badrin, for her endless guidance, motivation, and support in my study. I am very proud to have had this opportunity to learn from her. May Allah bless her, in her time, knowledge, and family.

My deepest gratitude goes also to Co Supervisors Dr. Salziyan Bt. Badrin and Dr. Tengku Alina Bt. Tengku Ismail for all their time and guidance. I would like to extend my deepest appreciation to Princess Badea'a Hospital (PBH) for the facilities and approval to conduct this study. Appreciation is also given the mothers who participated in my study, without them this study would not have been possible, may Allah bless them and their children.

I am dedicating this work to my parents, to my brothers and sisters. To my one and only true love, the one who shared my journey with his love and encouragement, to my husband (Malek), thank you. To my children, the scent of heaven, my son (Hashem) and my little daughter (Bana). You were my rock in my hard time.

To them all, asking Allah to make it beneficial for all the people and to be purely seeking His generosity.

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KEBERKESANAN PROGRAM PENDIDIKAN BIMBINGAN PENYUSUAN TERHADAP KEMAHIRAN DAN SIKAP KE ARAH PENYUSUAN DALAM KALANGAN IBU KALI PERTAMA DI JORDAN

ABSTRAK

Penyusuan susu ibu adalah kaedah paling dikenali untuk kaedah pemakanan bayi. Pendidikan penyusuan susu ibu adalah penting untuk mempromosikan penyusuan susu ibu terutamanya dalam kalangan ibu pertama kali. Tujuan utama dalam pendidikan penyusuan susu ibu ini bukan sahaja dapat meningkatkan ilmu pengetahuan dan kemahiran dalam penyusuan susu ibu malah ianya juga dapat mempengaruhi praktis untuk penyusuan susu ibu. Kajian ini adalah bertujuan untuk menentukan keberkesanan program bimbingan pendidikan penyusuan pos natal terhadap kemahiran penyusuan dansikap terhadap penyusuan susu ibu serta mengenalpasti praktis penyusuan susu ibu dalam kalangan ibu pertama kali. Kajian berbentuk eksperimen kuasi ini digunakan untuk menentukan keberkesanan program bimbingan pendidikan penyusuan pos natal terhadap kemahiran penyusuan dan sikap terhadap penyusuan susu ibu. Sebanyak 87 orang ibu pertama kali (kumpulan intervensi=44, kumpulan kawalan=43) dari Hospital Princess Badea'a di Irbid, Jordan telah menyertai kajian ini. Data kajian ini diperolehi dengan menggunakan Iowa Infant Feeding Attitude Scale (IIFAS) dan LATCH Assessment Tool pada peringkat pra-intervensi (dalam masa 4 jam selepas bersalin) dan post-intervensi (pada minggu ke-8 selepas kelahiran). Analisis ujian t-berpasangan digunakan untuk menentukan perbezaan min skor di antara kumpulan dan ujian t tidak berpasangan digunakan untuk menentukan perbezaan antara kumpulan intervensi dan kumpulan kawalan. Keputusan

kajian menunjukkan bahawa terdapat perbezaan yang signifikan iaitu peningkatan kemahiran penyusuan dan sikap dalam kalangan kumpulan intervensi berbanding dengan kumpulan kawalan. Seramai 43.2% dalam kalangan kumpulan intervensi dan 20.9% dalam kumpulan kawalan telah meneruskan penyusuan secara ekslusif pada 6 bulan selepas kelahiran. Program bimbingan pendidikan penyusuan pos natal adalah bermanfaat untuk meningkatkan kemahiran penyusuan dan sikap terhadap penyusuan.

THE EFFECT OF GUIDED BREASTFEEDING EDUCATION ON SKILL AND ATTITUDE TOWARDS BREASTFEEDING PRACTICE AMONG FIRST-TIME MOTHERS IN JORDAN

ABSTRACT

Breastfeeding is a well-known feeding method for infants. Education on breastfeeding is important in promoting the breastfeeding practice especially among first time mothers. The goal of educating mothers is not only to increase their breastfeeding knowledge and skills but also to influence their breastfeeding practice. This study aimed to determine the effectiveness of postnatal guided breastfeeding education program on breastfeeding skills and attitude among first-time mothers and to determine their breastfeeding practice. -This is a quasi-experimental design study to investigate the effect of guided postnatal breastfeeding educational intervention on breastfeeding skills and attitude. A sample of 87 first time mothers (intervention = 44, control = 43) from Princess Badea'a Hospital (PBH) in Irbid, Jordan had completed the study. Data was collected using the Iowa Infant Feeding Attitude Scale (IIFAS) and LATCH Assessment Tool at pre-intervention phase (within 4 hours postpartum) and post intervention (at 8 weeks postpartum). Paired t-test analysis was used to determine the mean score different within groups and independent t-test analysis was used to compare mean score different between both groups. Results showed that there was significant increase in breastfeeding skills and attitude among the intervention group as compared to the control group. A 43.2% of first-time mothers in the intervention group and 20.9% in the control group continued exclusive breastfeeding at 6 months post-delivery. Postnatal guided breastfeeding education program is

beneficial to improve the breastfeeding skill and the attitude towards breastfeeding especially among first time mothers.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Breastfeeding (BF) is a well-known feeding method for infants. Although the benefits of BF have been well documented, according to the Centers for Disease Control (CDC) BF report card, BF rates at three months, six months and 12 months post-partum have fallen below the objectives set by Healthy People (Harwood, 2011). The World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) recommend for early initiation of BF within an hour after birth, exclusive Breastfeeding (EBF) for the first 6 months, followed by continued BF for two years or beyond, together with adequate and safe complementary foods (El-Houfey et al., 2017).

In Jordan, the rates of BF are decreasing during the last few years, according to the last two Jordanian population and family health surveys (Jordanian Department of Statistics, 2018). This decrease indicates a potential risk to the health of mother's infant as babies may be more vulnerable to gastritis, otitis media or respiratory problems and increases in the cost of healthcare for babies with more risk of infections (Hatamleh & Abuhammad, 2018a, 2018b). Most Jordanian mothers start to breastfeed their babies soon after delivery. A survey done showed that 68% of newborn babies receive breast milk within 24 hours of birth (DHS, 2012). However, EBF rates are very low (IBFAN-Asia, 2015).

1.2 Background

BF is important for infant health especially in developing countries (such as Jordan). However, the awareness of the potential long-term health benefits for mothers and babies, particularly concerning on obesity, blood pressure, cholesterol, and cancer are still lacking (Mohammed & Soliman, 2018; Mostafa et al., 2019). The developing countries may face low immunization rates, contaminated drinking water, and reduced in immunity which can lead to the malnutrition and thus, BF is crucial to reduce the food and water-borne infections. A review of interventions in 42 developing countries estimated that EBF for six months, with partial BF up to 12 months, could prevent about 1.3 million (13%) deaths in children under five years of age each year (Hoddinott et al., 2008).

According to WHO (2017), EBF means giving a baby no other food or drink, including water; in addition to breast milk (medicines and vitamin and minerals drops are permitted). On the other hand, partial BF includes other feeding methods in addition to BF (i.e., bottle, cup) regardless of the content. Breast milk consists of essential nutrients containing proteins, vitamins, and carbohydrates. Breast milk is a complex living nutritional fluid that contains antibodies, enzymes, and hormones, all of which have benefits in the baby's health. Formula milk is just a food and some methods in giving formula milk may expose the baby to severe risks of infection. Early intake of colostrum, which rich in antibodies, is important and the small volume of colostrum helps to prevent renal overload when the newborn baby is adjusting its fluid balance (Hoddinott et al., 2008). EBF is regarded as imperative for infants' survival. Indeed, of the 6.9 million under-five children who were reported dead globally in 2011, an estimated 1 million lives could have been saved by simple and accessible practices such as EBF (Seidu, 2013).

1.2.1 Breastfeeding Benefits

The myriad of benefits of BF are widely documented in the literature, and new benefits continue to be identified. Emerging research also indicates stronger associations between longer duration of EBF and enhanced maternal and infant benefits (Pitonyak et al., 2016; Schanler et al., 2013). For infants, BF has short-term and long-term health benefits. In the short-term, BF reduces the risk of infection diseases and reducing infant for hospital readmission. The benefits of BF for the infant include a decrease in the severity of diarrhea with reducing the risk of gastroenteritis, necrotizing enterocolitis, respiratory infections, ear infection, sudden infant death syndrome (SIDS), and urinary tract infections.

In the long-term, BF reduces the risk of asthma, atopic dermatitis, cardiovascular disease, celiac disease, diabetes, childhood inflammatory bowel disease, obesity, and sleep-disordered breathing. Further, BF is associated with increased cognition and neurodevelopment (Awhonn, 2017). Breastfed infants also have an enhanced immune response that may continue after BF ends (Riley, 2007). Longer durations of BF may provide a stronger protective effect against these infections and significantly increase the infant health outcomes.

Poor health outcomes that can affect a child within the first year of life if not breastfed include increased infant mortality, gastrointestinal illness, and respiratory illnesses. The long term effects of a failure to breastfeed can include increased risks of childhood obesity, the incidence of Type I and II diabetes mellitus, and gastrointestinal disorders (Newburg et al., 1998; Pediatrics, 2012; Stuebe, 2009). Breastfed infants also have more control over how much food they eat and when they eat (Hung & Berg, 2011; Widstr¨om et al., 2011), which may be part of the association between reduced

rates of obesity among breastfed infants (AAP, 2012). In addition, it reduced the risks of childhood cancers (Obi, 2017).

Longer BF duration can significantly increase the infant health outcomes. The presence of minerals in the breast milk fulfills the micronutrient needs of the baby, and maternal antibodies helps to improve the immune system inhibiting infantile infections like gastrointestinal, respiratory and skin infections and increases physical and neurological growth of the baby (Fairbrother and Stanger-Ross 2009).

BF has benefits not only for the infant but has been shown to improve maternal health, including a reduction in postpartum bleeding, earlier return to pregnancy weight, reduced risk of premenopausal breast cancer, and reduced risk of osteoporosis, which continues long after the postpartum period (Riley, 2007). Postpartum benefits include decreased blood loss, lower risk of postpartum infection and anemia, and more significant weight loss. BF reduced the risk of breast cancer, diabetes (type II), hypertension, cardiovascular disease, metabolic syndrome, ovarian cancer, osteoporosis, and rheumatoid arthritis (Bernaix et al., 2010). BF enhances the relationship between a mother and her infant by improving bonding. For example, skin-to-skin contact during BF has been shown to improve the infants' vital signs, especially immediately after birth (Moore & Anderson, 2007). It is theorized that many of the identified health benefits of BF may be related to not only the composition of human milk but also to the close contact between the mother and her infant during feeding (Moore, Anderson, Bergman & Doswell, 2012).

Lactational amenorrhea acts as a natural contraceptive benefactor following exclusivity in breastfeeding. Breast cancer and ovarian cancer risk reduced among mothers who give exclusive breast milk correlates with weight loss that preventing early cardiac morbidity and mortality (Fairbrother and Stanger-Ross 2009).

The benefits of BF extend beyond the mother and baby and cause positive health and economic changes locally and globally (Bowman, 2013). In addition to the numerous health benefits associated with breastfeeding, there are several financial benefits for families, society, public and private insurers, employers, and government programs. In a cost analysis of the financial benefits of breastfeeding, the authors concluded that if 90% of new mothers breastfeed exclusively for six months, 13 billion health care dollars would be saved (Bartick & Reinhold, 2010).

BF is also beneficial to the environment and does not require manufacturing plants, packaging, storage, transportation, or refrigeration; it generates no waste and is a renewable resource (Save the Children, 2012). Researchers estimated that for every one million formula-fed infants, 150 million containers used in formula packaging were disposed of, many in landfills (USDHHS, 2011).

1.2.2 Breastfeeding Attitude and Skills

Predictors of BF vary widely between countries. Developed or developing countries, age, employment status, education, knowledge, attitudes towards BF, intention to breastfeed, mode of delivery, health system practices and community beliefs influence the prevalence of BF (Ihudiebube-Splendor et al., 2019).

There is an increasing focus on health education approaches to predict and support behavior change. Successful interventions work through addressing the many structural, societal, economic, and individual influences on the decision to breastfeed (Rollins 2016). These include increasing women's motivation to breastfeed, whether that be via providing information about the health outcomes of BF, providing women with the skills and confidence to commence BF, or using more structured approaches such as motivational interviewing that seek to 'increase an individual's belief that they can achieve a desired outcome' (Copeland 2015). These types of interventions are

particularly important in communities where BF rates are low, and there is an entrenched infant formula-feeding culture.

The goal of educating mothers is not only to increase their BF knowledge and skills but also to influence their attitudes toward BF. BF education occurs most often during the prenatal and intrapartum periods and should be taught by someone with expertise or training in lactation management. This instruction typically occurs within an informally structured small group setting but may be given one-to-one. This education primarily includes information and resources. Although the target audience is usually pregnant or BF women, it may include fathers and others who support the BF mother (Shealy et al., 2005)

There are different factors that a mother encounters during pregnancy and post-partum that are valuable to the success of BF. However, some factors can be more influential than others. Interventions to improve the knowledge about BF increase the successful of BF and also positively affects the BF attitude, which make it one of the most significant factors that influence Bf (Al Ketbi et al., 2018). Healthcare providers could help mothers, and their babies establish and maintain and continued BF for two years or beyond, particularly, EBF (Johnson et al., 2016). Healthcare professionals, including physicians, nurses, and dietitians, play an important role in BF promotion and education (Harwood, 2011). Nurses spend a considerable amount of time with new mothers when compared to other health care providers and in a pivotal position to promote BF skills also teach for every mother to do a longer duration of BF. Research has supported the premise that a nurse's attitude can influence the duration of BF (Riley, 2007).

Nowadays, majority of births occur in hospitals where nurses are the primary health care providers supporting women from labor and birth through discharge. Nurses play vital roles in preparing, educating, encouraging, improving BF attitude, and supporting women to breastfeed while the mother came at primary health care for antenatal care and follow-up (AWHONN, 2015). Nurses should encourage women to discuss their medications and herbal and other nutritional supplements with a health care provider who has expertise in BF in aim to increase their attitude toward BF (Nies and Mcewen, 2015). Studies conducted on BF barriers showed that they had inadequate attitude, and skills necessary to promote BF and complementary feeding practices (Mostafa et al., 2019).

Piper and Parks (2012) reported that negative attitudes of women and poor skills could be a barrier of BF and in addition the persistently sore and red nipples led to early termination. The professional advice given to mothers in health facilities impacts all steps of infant feeding. However, studies conducted to assess the attitude, and practice of BF among healthcare providers showed that they had inadequate attitude, and skills necessary to promote BF and complementary feeding practices. The main reasons for such an existing gap in attitude and skills are inadequate coverage of BF and weaning in medical curricula as well as defective in-service updates (Mostafa et al., 2019).

1.2.3 Breastfeeding Education

BF education is defined as BF information being imparted during prenatal, pregnancy and after delivery in a variety of forms. This could be on an individual or group basis, could include home visiting programs, peer education programs, or clinic appointments specifically aimed at imparting BF knowledge and could involve prospective fathers or not. BF education is usually a formalized, defined, descriptive,

and goal-orientated program with a specific purpose and target audience (P et al., 2012). Predictors of EBF vary widely between and within countries. Urban or rural difference, age, employment status, higher education, knowledge about good BF practices, positive attitudes towards EBF, intent to EBF before delivery, partner living with the woman, mode of delivery, birth weight of the infant, health system practices and community beliefs have all been shown to influence the prevalence of EBF in different areas (Nkala & Msuya, 2011).

Feeling of empowered to successful breastfeed motivates the mother to continue EBF. Self-efficacy, which has been defined as the woman's perceived ability to successfully master a task such as breastfeeding, is associated with an increased duration of BF at six months (Kingston, Dennis, & Sword, 2007; McCarter-Spaulding & Gore, 2009; Wilhelm, Rodehorst, Stepans, Hertzog, & Berens, 2008). Previous study showed that women who participated in support workshops focused on BF self-efficacy were more likely to EBF at eight weeks postpartum than women who did not attend such workshops (Noel-Weiss, Rupp, Cragg, Bassett, & Woodend, 2006).

If the mother chooses to or is required to formula feed instead of breastfeeding, nurses should be warning her about disadvantages and health problems asso ciated with formula feed; if she did not persuade the community health nurse must support her to understand how to safely prepare, feed, and store formula and bottles. Education and resources should also include information about the risks of contamination of formula, feeding systems, and/or water supply. The education that is given to the mother can be very influential in helping the mother with positioning, support and BF attitude. Women should be advised to monitor whether a particular feeding system and/or formula is recalled for safety or other reasons (Nies and Mcewen, 2015). Mothers

ability to BF influenced by their attitudes and skills (Ho & McGrath, 2011; Khassawneh et al., 2006).

The decision to breastfeed is influenced by multiple complex factors at the individual, family, health system, and societal levels (Dyson 2010). Consequently, there are many approaches to promoting the initiation of BF, which may target pregnant women, their families, wider communities and society, or the health service. Interventions to promote the initiation of BF are delivered before the first feed, i.e., before or during pregnancy, or immediately after birth. Interventions targeted at individual women include health education, peer support, practical skills training, and early mother- and-baby contact. Health education interventions to promote the initiation of BF delivered during pregnancy may entail one or more sessions, be delivered to groups or one-to-one, in formal or informal settings, and be delivered by health professionals, maternity support workers. BF health education may be targeted to women alone, or it may include family members such as partners and parents (Grassley 2007; Ingram 2004). The content of health education to promote the initiation of BF may include the health outcomes of BF compared to formula feeding, what to expect when breastfeeding, and how to prevent and solve breastfeeding-related problems. It may also include practical skills such as positioning and attachment of the baby at the breast, and the opportunity to talk to a BF woman and observe a breastfeed (Oo et al., 2016).

According a study by Hernández Pérez et al. (2018) that evaluate the effectiveness of a program to improve the attitudes toward BF, the finding of study shown a higher percentage of positive attitudes towards BF, the educational program carried out is effective as a method to improve knowledge and attitudes toward BF among teenagers. Another study done by Dyson, McCormick, and Renfrew (2014)

showed that health education and support interventions could result in some improvements in the number of women beginning to breastfeed. Educational and support interventions can effectively increase BF duration and exclusivity outcomes (Fauzi et al., 2018; Meedya et al., 2017).

1.2.4 Breastfeeding among First-Time Mothers

There is an increasing awareness of the importance of BF education among new mothers (Alzaheb, 2017). New mothers need BF education, especially in the immediate postpartum period, to initiate and sustain BF (Obi, 2017). In Jordan, most new mothers do not have direct, personal knowledge of BF, and many find it hard to rely on family members for consistent, accurate information and guidance about infant feeding (Al dasoqi et al., 2018). Furthermore, although many women have a general understanding of the benefits of BF, they lack exposure to sources of information regarding how BF is carried out (Hamlan et al., 2015; Hatamleh & Abuhammad, 2018b, 2018a).

Current evidence indicates that performing correct latching, the knowledge on dealing with BF problems, and contact between mother and infant shortly after birth helps to initiate early BF and increases the likelihood of EBF for one to four months of life as well as the overall duration of BF. Most of the first-time, mothers do not have this basic knowledge and do not know the correct technique of BF mainly due to their lack of previous experience. According to Cathy Garbin - child health nurse, midwife and lactation consultant - 92% reported BF challenges by day three. The most common problems mothers experienced in the first week are breast engorgement, BF pain, the baby is not latching correctly, and not enough breast milk. Giving knowledge on how to handle these problems along with the benefits of BF to first-time mothers can overcome these challenges and continue BF (Garbin, 2019).

According to Talbert et al. (2020) being a first-time mother is identified as a risk factors for early BF interruption. First-time Mothers, Breastfeeding, and Becoming a Mother provides a lens to view the underlying processes influencing the decisions the mothers made related to breastfeeding and early motherhood. The mothers worked through the processes of learning breastfeeding, redefining self, and defining motherhood. The mothers' belief that breastfeeding defines motherhood, coupled with lack of knowledge and control, had a negative effect on both early breastfeeding and their transition to motherhood (James et al., 2020; A. Talbert et al., 2020).

Health workers should aim to enable first-time mothers with skills and knowledge antenatally and support optimal feeding as perinatal challenges arise. Ensuring capacity for detection and support of mothers with breastfeeding problems at child welfare clinic attendances and other contacts with health service providers should be prioritized in order to help improve health and growth from early in life (Talbert et al., 2020). First time mothers felt uncertain and sometimes overwhelmed by the intensity of the unfamiliar challenges of becoming a mother (McLeish et al., 2020). In the context of early discharge for first-time mothers, more could be done to promote self-efficacy through midwifery interventions and social support to address the breastfeeding self-efficacy predictors. One approach which has been shown to be successful is a breastfeeding education and support program (James et al., 2020).

1.3 Problem Statement

BF is more than just feeding and ingestion of milk. BF affords many unique health advantages for both mother and baby (IBFAN-Asia, 2015). The benefits of BF are documented extensively in the literature, and new benefits continue to be identified on both mother and infant. Furthermore, emerging research also indicates stronger

associations between longer duration of EBF and enhanced maternal and infant benefits (American Academy of Pediatrics, 2012; Ip et al., 2009).

To achieve good BF rates in Jordan, the government has a good strategy in all its aspects (national policy, program, and coordination), started the Baby-Friendly Hospital Initiative, and the implementation of the international code. However, according to WBTi report (2015), the rate of BF among children less than six months is low, because of early introduction of complementary food due to the misconception that breast milk is not adequate. There were 37% of children consume other milk, 9% consume water in addition to breast milk, and 14% consume supplementary food. The reasons for such low rate that there are short in-service training programs providing education and skills related to infant and young child feeding for relevant health/nutrition care providers, the individual counseling and group education services related to infant and young child feeding are not so efficient (IBFAN-Asia, 2015).

The BF rate decreased in the last few years. The potential health risk for both the infant and the mother in Jordan has been highlighted by (Al dasoqi et al., 2018; Hamlan et al., 2015; Hatamleh & Abuhammad, 2018b). According to the latest Jordanian Department of Statistics annual report, 90% of infants breastfed, but only 67% were breastfed in the first hour, more than half had baby food. The rate of BF initiation for the first-time mother in Jordan within the first four hours after birth was only 13%. The rate of EBF at six weeks was 25.5%, and this rate dropped to 2.1% at six months (Al dasoqi et al., 2018).

There is a high level of BF barriers in Jordan the includes breast physical problems, negative attitude, mothers' lack of knowledge, and infant refusal of breast milk were the most perceived barriers (Hamlan et al., 2015). It is essential to provide

postnatal BF education to improve the attitudes for BF among first-time mothers (Alzaheb, 2017; A. W. Talbert et al., 2018).

There is decreasing rate of BF in Jordan and according to Hamlan et al. (2015), mothers' lack of knowledge, lack of BF skill and negative attitudes for BF are the main barriers for practicing EBF. In addition, new mothers in Jordan do not have direct, personal knowledge of breastfeeding, although many have a general understanding of the benefits of breastfeeding, they lack exposure to sources of information regarding how BF is actually carried out.

Health education for the mothers' antenatal and postnatal regarding BF is a crucial element of maternal health care. Interventions is a successful approach to promote the initiation of breastfeeding. A study by Oo et al. (2016) investigate the interventions are successful in helping first-time post-partum mothers sustain EBF for one month or more, shown that the factors of contribution doctors, lactation nurses, peer counselors, and skin-to-skin care encouragement by nurses.

Current evidence indicates that skin-to-skin contact between mother and infant shortly after birth helps to initiate early BF and increases the likelihood of EBF up to four months of life as well as the overall duration of breastfeeding. Therefore, a new mother need to learn this basic knowledge and the correct technique of BF. There is still a need to improve BF attitude for first-time mothers in Jordan and the study on determine the BF skills and attitude among women in Jordan is still limited. Thus, this study aimed to fill the gap in determining the effectiveness of BF education techniques and support to improve the BF outcomes among first-time mothers in Jordan.

1.5 Objective of the study

1.5.1 General Objective:

To determine the effectiveness of postnatal guided BF education program on BF skills and attitude among first-time mothers.

1.5.2 Specific Objectives:

1. To determine the effectiveness of a postnatal-guided BF education program on BF skills among first-time mothers by comparing between intervention and control group.
2. To determine the effectiveness of a postnatal-guided BF education program on BF attitude among first-time mothers by comparing between intervention and control group.
3. To determine the percentage of mothers continuing EBF at 6 months in both intervention and control group.

1.6 Research Questions

The research questions of the study include the following:

1. Is there any significant difference in BF skills among first-time mothers between intervention and control group before and after BF education program and support?
2. Is there any significant difference in BF attitude among first-time mothers between intervention and control group before and after BF education program and support?
3. What is the percentage of the mothers continue to EBF at 6 months in both intervention group and control group?

1.7 Hypotheses

The null hypotheses for this study are:

Ho1: There is no significant difference in BF skills between the intervention group and the control group.

Ho2: There is no significant difference in BF attitude between the intervention group and the control group.

1.8 Conceptional and Operational Definitions

In this section, several key terms were defined as conceptually and operationally. Those key terms are breastfeeding, BF education, BF attitude, BF knowledge, BF support, BF duration, BF exclusivity, and LATCH.

Breastfeeding (BF): infants receiving breast milk either directly from the breast or expressed, either without supplement or allowing the infant to receive one or more bottles of the feeding of formula per day or any food or liquid (WHO, 2010).

Breastfeeding Education: One or more actions are taken in order to modify an effect from the intervention (Vanes, 2013). In this study, the intervention was given by giving BF education to the first-time mother. BF education was given by the researcher in small groups in addition to the current usual care.

Breastfeeding Attitude: the maternal mental and emotional entity toward infant feeding methods (e.g., breastfeeding, formula-feeding). It covers various dimensions of infant feeding; the costs of infant, nutrition, convenience, and infant bonding. In this study, attitude will be measured using the Iowa Infant Feeding Attitude Scale.

Breastfeeding knowledge: The extent of understanding conveyed about lactation and nourishment of an infant through BF (Knowledge: Breastfeeding, 2009). In this study, knowledge is defined as the understanding of the benefits of BF for both the mother and infant, latching, positioning.

Breastfeeding Support: In this study, BF support was given by giving one time support to the postnatal mothers within one week of postpartum to the intervention group. Postnatal BF support was given by the researcher face-to-face and by a phone call to the mothers. The support included information about breastfeeding, encouraging EBF, answering questions, and discussing the doubts of practicing breastfeeding, giving assistants in the establishment of BF and management for any problem regarding breastfeeding.

Breastfeeding Duration: BF duration is defined in the number of days the infant was fed at the breast, either without supplement or allowing a maximum of one bottle feeding of formula per day (Schlickau, 2005). In this study, BF duration is defined as the number of days the infant receive of any breast milk via bottle or breast, either without supplement or allowing to receive one or more bottle feeding of formula per day or any food or liquid. Six months was set as the criterion for the BF duration of this study. If a mother discontinued breastfeeding, either at one or six weeks or four months in postpartum, the BF duration would be recorded from the date of the infant's birth until the date of BF cessation. Note; if mothers stop BF for a few days and resume, it was considered as a continue breastfeeding.

Exclusive breastfeeding (EBF): an infant that has received only breast milk (including milk express or from a wet nurse) and no other food or drink, not even water for six months of life, with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines (WHO, 2008). In this study, EBF is the practice of

feeding only breast milk, including expressed breast milk and allows the baby to receive vitamins, water or medicine from birth to the time of the data collection.

Predominant breastfeeding: means that the infant's predominant source of nourishment has been breast milk (including milk expressed or from a wet nurse as the predominant source of nourishment). However, the infant may also have received liquids (water and water-based drinks, fruit juice) ritual fluids and ORS, drops or syrups (vitamins, minerals and medicines) (WHO).

Partial breastfeeding: The infant is given some breast feeds and some artificial feeds, either milk or cereal, or other food or water.

Weaned breastfeeding: The infant is not given any breastfeeding and only artificial feeds.

LATCH: refers to how the baby attaches onto the mother's breast while breastfeeding. A good latch promotes high milk flow and minimizes nipple discomfort for the mother, whereas poor latch results in poor milk transfer to the baby and can quickly lead to sore and cracked nipples. In a good latch, both the nipple and a large portion of the areola are in the baby's mouth.

Vaginal Delivery (VD): A vaginal delivery is the birth of infant through the vagina (also called the "birth canal"). This consider the natural method of birth. In this study it occurs when a pregnant female goes into labor without the use of drugs or techniques to induce labor, and delivers her baby in the normal manner known as spontaneous vaginal delivery (SVD) or the use of special instruments such as forceps or a vacuum extractor to deliver her baby vaginally known as the assisted vaginal delivery (AVD), without a cesarean section.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This study aimed to find out the effectiveness of guided BF education program on BF skill and attitude among first-time mothers in Jordan, in order to see the extent to which BF education techniques and support could have an impact on the first-time mother's attitude, exclusivity, and duration of breastfeeding. The literature reviews begin with a discussion of the benefits of BF for the mother and infant. It is essential in helping the mother in understanding and promoting awareness about the benefits of BF to the infant and mother. Secondly, the literature review elaborates on general BF barriers faced by mothers and then discussed BF intervention. In addition, the literature reviews discuss rates of BF situation in Jordan and how education and support promote breastfeeding. Finally, chapter explains the theoretical and conceptual framework for this study.

2.2 Breastfeeding Benefits

BF and human milk are the normative standards for infant feeding and nutrition. Given the documented short- and long-term medical and neurodevelopmental advantages of breastfeeding, infant nutrition should be considered a public health issue and not only a lifestyle choice (Fauzi et al., 2018). Children must get the best possible start in life. Their survival, protection, development, and growth in good health and with proper nutrition is an essential foundation of human development; BF is well recognized as a mean to protect, promote and support the health of infants and young children. The act of BF releases growth hormones that promotes healthy oral development and

establishes a trusting relationship between baby and mother (IBFAN-Asia, 2015; Nodo, 2014).

Among the infant feeding outcomes examined, Hauck, Thompson, Tanabe, Moon, and Vennemann (2011) found that BF can protect against sudden infant death syndrome (SIDS), and when infants received BF exclusively, this effect becomes much stronger. In SIDS risk-reduction messages, the recommendation to breastfeed infants should be included to reduce the risk of SIDS and at the same time, to promote the benefits of BF to the infant and maternal health.

In addition, according to Barone et al. (2006), children who were breastfed for less than three months were more likely to had problems in bed wetting, compared to children who were breastfed for more than three months, they had enhanced and stronger immune system (Jackson & Nazar, 2006). Furthermore, adolescents who were breastfed for longer than six months during infancy had a modest protective effect against obesity (Yamakawa et al., 2013), and children who were breastfed also had less risk in facing infections and in the first year of life, had less admission to the hospital due to infections (Ladomenou et al., 2010).

In a separate study, based on the data from Danish National Birth Cohort, Denmark, it was conclusively shown that BF might decrease epilepsy in childhood, thus adding a new reason for mothers to breastfeed their infants. The results of the study reported that children who were breastfed for less than one month had higher risk to develop epilepsy after the first year of life, compared to children who were breastfed for 3 to 5 months, 6 to 8 months, 9 to 12 months, and more than 13 months had 26%, 39%, 50%, and 59% less risk to develop epilepsy, respectively (Sun, Vestergaard, Christensen, & Olsen, 2011). Generally, longer durations and EBF are positively associated with improved maternal and infant health outcomes.

The benefits of BF have been documented broadly in the literature for infants, mothers, and society. Breast milk is not just the best food for an infant, but the highest standard for infant feeding as the natural first food for the newborn. The myriad of benefits of BF are documented extensively in the literature for infants, mothers, and society; the reduction of infant mortality and SIDS, cognitive skills development, Type 1 Diabetes Mellitus, obesity reduction, leukemia and cancers. Infants who are breastfed have a lower risk of developing upper respiratory infections (Bowman, 2013).

BF also has definite benefits for mothers because it boosts a mother's immune system, and in the long term, it can help protect a mother from breast and ovarian cancers and osteoporosis. BF is among the most cost-effective interventions to improve infant and mother's nutrition, health development, and survival (IBFAN-Asia, 2015).

BF is also beneficial to the mother's health. The benefits of BF for the mother begin after birth when hormones begin to change. One of the vital hormones that help the mother is oxytocin. The stimulation of suckling increases the oxytocin to aid in the ejection of milk and the letdown. The oxytocin release also stimulates the contraction of the uterus, which will facilitate the uterus back to its standard size (Nodo, 2014). Benefits also include maternal psychological benefits, weight loss, breast, and ovarian cancer, decreased risks of metabolic disorders, and reduction of cardiovascular disease. In addition, to the numerous health benefits associated with breastfeeding, there are several financial benefits for families, society, public and private insurers, employers, and government programs (AWHONN, 2017).

The other important maternal health benefits of BF include reducing the risk of postpartum depression. Postpartum depression or postpartum blues is a common postnatal complication and can lead to adverse consequences in the long term. The research study by Ip et al. (2007) found that the mother who was not practicing BF or early discontinuation of BF was associated with an increased risk of developing postpartum depression. BF is associated with an attenuated stress response, involving cortisol and the lactogenic hormones, oxytocin, and prolactin, which function as an antidepressant and have anxiolytic effects by reducing distress, and reduce the risk of depression. BF is associated with an attenuated stress response, involving cortisol and the lactogenic hormones, oxytocin, and prolactin, which function as an antidepressant and have anxiolytic effects by reducing distress, and reduce the risk of depression (Mezzacappa & Endicott, 2007).

A study showed that mothers had less risk of developing diabetes, hypertension, cardiovascular disease, or hyperlipidemia in the postmenopausal period if they breastfed their infants. In particular, the study found that mothers who are BF for longer than 12 months have a minimized risk to develop hypertension ($p<0.001$), diabetes ($p<0.001$), hyperlipidemia ($p<0.001$) and cardiovascular disease ($p=0.008$) than the mother who never breastfed. Overall, these findings provided additional support for the benefits of BF when BF is exclusive and prolonged (Schwarz et al., 2009).

BF is more than just feeding and ingestion of milk. BF affords many unique health advantages for both mother and baby. Lactation reduces the risk of postpartum bleeding, BF also improves bonding with the baby, and it gives the baby love, security, and pleasure (IBFAN-Asia, 2015). Mothers who succeeded with BF have an improvement in the relationship quality between mothers and children (Papp, 2014),

and BF also promotes more significant weight loss for the mother (Hatsu, McDougald, & Anderson, 2008).

The risk of vascular changes associated with future cardiovascular disease seemed to be increased for mothers who did not breastfeed their infants (Natland, Nilsen, Midthjell, Andersen, & Forsmo, 2012; Schwarz et al., 2010); similarly noted for obesity (Moss & Yeaton, 2014) ovarian cancer (Jordan, Cushing-Haugen, Wicklund, Doherty, & Rossing, 2012), breast cancer (Babita, Kumar, Singh, Malik, & Kalhan, 2014), and rheumatoid (Adab et al., 2014).

2.3 Breastfeeding Barriers

There had been several studies in the literature that identified why mothers discontinued BF and studies discovered that returning to work factor and no breast milk or insufficient milk were the common reasons given by mothers. Although the value of BF is well understood, there are many barriers that can make it difficult for women to start and continue breastfeeding. These barriers include lack of knowledge about breastfeeding, negative attitude, and the misconception that formula is equivalent, and lactation problems (Breastfeeding Coalition Tasmania, 2019).

Internationally there are many factors associated with poor BF and must consider when investigating the reasons for lower than recommended rates and duration of BF identified many of the most common barriers to successful breastfeeding. The seven barriers addressed in the call to action were found to be: lack of knowledge, BF attitude, lactation problems, low-income family and social support, social norms, embarrassment, employment, and childcare, and health services (USDHHS, 2011).

A cross-sectional survey study by Madanat, Farrell, Merrill, & Cox (2007) aiming to identifies Iraqi refugee women's barriers to BF, as well as the amount of BF education and support they received. The results indicated that the majority of these women did not receive education or assistance about BF from health professionals, family, or friends before or after giving childbirth. Furthermore, relatives and friends, not healthcare professionals were identified as having the most significant influence on the decision to breastfeed. Given these women's unique situation, the development of a peer counseling program to meet the educational, health, and social needs is recommended.

Qualitative descriptive study design by Jia Choo & Ryan (2016) to explore the BF experiences of first-time mothers and the difficulties they faced during their BF period. The four key themes identified were: challenges and support for BF in the initial period after birth, low degree of support for BF in the workplace, unease at BF in front of others, and emotional and psychological aspects of breastfeeding. The results indicate that BF is still a challenge for first-time mothers.

A literature review was conducted by El-Houfey et al. (2017) on factors that influence EBF practices. According to the researchers, there is a need for implementation of an educational program through primary health care settings as well as mass media to improve, promote and support the EBF practices, both national and international among working and nonworking mothers should be done. This is consistent with the study by Greene and Olson (2008), who found that one of the main barriers to successful EBF among employed mothers is inadequate BF support.

A qualitative study approach using focus group discussions by Intiful, Osei, Steele-Dadzie, Nyarko, & Asante (2017) to evaluate the views of expectant first-time mothers. The results indicated that the intention to breastfeed is effected by knowledge

on BF and familiar sources of information on BF. In addition, the need to support and provide adequate education on BF issues is critical among this category of women. Maternal beliefs regarding BF affect its initiation and continuation. According to Chuang et al. (2007), the negative experience of mothers during previous infant BF contributes to a decision not to breastfeed a subsequent infant.

Mothers who felt their infant was not satisfied with breast milk would initiate additional supplementation earlier, thus lead to stopping BF (Alutu, 2008). Maternal post-delivery physical status affected intention to initiate BF Tahotoa et al. (2009) reported that barriers to effective BF included maternal physical problems such as cracked or bleeding nipples and inadequate knowledge of how to manage potential BF problems. Some infant characteristics can be perceived as barriers to breastfeeding. According to Avery, Zimmermann, Underwood, and Magnus, (2009), the inability of the infant to latch on properly is considered one reason for early BF discontinuation.

Maternal perception of breast milk being entirely adequate for infant nutrition is viewed as a barrier to initiate or even continue breastfeeding. This perception was supported by Owais, Tayem, and Froelicher (2009) study of Jordanian mothers who discontinued BF related to their belief that milk insufficiency resulted in their infant continuing to be hungry after breastfeeding. In addition, maternal perception of infant poor weight gain, reflecting inadequacy was a determinant in early BF discontinuation (Gerd et al., 2011). Furthermore, maternal perception and experience of social support influence BF decision-making. Mothers put greater emphasis on formal support from health care providers, especially practical support, through providing skills in BF techniques (Barno-Vilar, Escriba-Aguir, & Ferrero- Ganda, 2009). BF education by nurses and midwives, whether provided formally or informally, increased the rate of BF in Turkish women (Yanikkerem, et al., 2009).