The Influence of Breastfeeding Attitude and Subjective Norm on Intention to Exclusive Breastfeeding of Mothers in Dhaka, Bangladesh

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ABSTRACT

The exclusive breastfeeding (EBF) rate in Bangladesh is still very low. Based on Ajzen's Theory of Reasoned Action, breastfeeding attitude and subjective norm are important factors that may impact on the intention to EBF of mothers. This descriptive study aimed to examine the extent to which breastfeeding attitude and subjective norm influence their intention to EBF of mothers in Bangladesh. The complete set of data from 65 mothers was used in the data analysis. Data were collected using: 1) a Demographic Data Questionnaire-; 2) a Breastfeeding Attitude Questionnaire; 3) a Subjective Norm Questionnaire; and 4) the Intention to EBF Scale. Content validity was checked by three experts and back translation was done. The Cronbach's alpha coefficients of the second and third questionnaire were .94 and .96, respectively. The test-retest reliability coefficient of the forth questionnaire was .85. Descriptive and inferential statistics were used for analyzing the demographic data and a hierarchical multiple regression was used to analyze the study variables. The findings indicated that there was a statistically significant positive and moderate

relationship between breastfeeding attitude and the intention to EBF (r=.50, p=.000). However, no relationship between subjective norm and the intention to EBF was found (r=-.08, p=.26). A hierarchical multiple regression revealed that breastfeeding attitude and subjective norm together explained 27% of the variance in the intention to EBF of the mothers. The regression coefficient of the breastfeeding attitudes was .52 (t=4.78, p=.000) whereas that of subjective norm was -.15 (t=-1.38, p=.173). The findings provided information that could be used in a further intervention study to increase the rate of EBF in Bangladesh.

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Shanzida

CONTENTS

CONTENTS (Continued)

CONTENTS (Continued)

CONTENTS (Continued)

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Background and Significance of the Problem

In Bangladesh, the rate of infant mortality is about 52 per 1000 live births (Government of the People's Republic of Bangladesh, Ministry of Health and Family Welfare, 2007). The major causes of infant mortality are diarrhea (Afroza & Begum, 2003; Talukder, 2002), acute respiratory tract infection (Afroza & Begum), malnutrition (Marques et al., 2001), and meningitis (Victora et al., 1999). This mortality rate may also be related to low rates of exclusive breastfeeding (EBF) as breastfeeding provides first immunization (Martindale, 2005; Wells, Thompson, & Kloeblen-Tarver, 2002) and anti-infective compounds for the infants (Davies-Adetugbo, 1997). Breastmilk also provides protection against allergies (Gatti, 2008; Roy, Ireen, & Rahman, n.d), maximizes a child's intelligenec quotient (Afroza & Begum), renders interaction between mother and infant (Marques et al.; Talukder), and also contributes to the optimal growth and development of infants (Memon, Sheikh, Memon, & Memon, 2006).

Breastfeeding positively affects the health of mothers. Physically it helps the uterus to return to its normal size (Khoury, Moazzem, Jarjoura, Carothers, & Hinton, 2005; Talukder, 2002) which, in turn, reduces the risk of postpartum hemorrhage. It has also been observed that breastfeeding practice prevents breast, ovarian, and endometrial cancers (Khoury et al., 2005; Memon et al., 2006). Psychologically, it increases self-confidence (Khoury et al.) and contributes to the feelings of attachment

between mother and child (Janke, 1994; Khoury et al.; Memon et al.). In addition, this practice is economical and helps to save money, particularly for mothers from the poor families in Bangladesh (Rehena, 1998).

To optimize the benefits of breastfeeding, the concept of EBF has been introduced and recommended to all mothers. Based on the recommendation of the World Health Organization (2009) and American Association of Pediatrics (2005), infants should receive only breastmilk during EBF, except medication, up to six months of postpartum. In Bangladesh, different rates of EBF were found up to six months from several sources. For example, Giashuddin and Kabir (2004) found that only 14% of Bangladeshi infants were exclusively breastfed up to three months and 11.7% up to six months (Mihrshahi et al., 2009). The latest rate of EBF of infants for six months was 43 percent (Independent Review Team [IRT], 2009) which was very low when compared with the rates of EBF (75%) in the South Asian Region (Agampodi, Agampodi, & de Silva, 2009). UNICEF (2008) reported that in Bangladesh, the rate of EBF of infants was 43% for six months. However, the most recent expected rates of EBF of infants for six months in Bangladesh have not yet been established.

Several factors contribute to the low rate of EBF in Bangladesh. Traditionally, most of the breastfeeding mothers tend to discard the colostrum. However, the substituting of prelacteal feeds, such as honey, water, misripani (palm sugar water), ghutti (herbal paste), and mustard oil, are used for feeding of infants due to these being common practices among Bangladeshi mothers (Darrmstadt, Syed, Patel, & Kabir, 2006; Khatun, Banu, & Khatoon, 2008; Memon et al., 2006). Psychologically, mothers often have the intention to EBF. However, it depends on many factors,

including maternal knowledge (Forster & McLachlan, 2007); previous breastfeeding experience (Kloeblen-Tarver, Thompson, & Miner, 2002; Manstead, Proffitt, & Smart, 1983); family income and maternal employment (Kools, Thijs, Kester, & Vries, 2006); parity (Humphreys, Thomson, & Miner, 1998; Kloeblen-Tarver et al., 2002); and unplanned pregnancy (Perez-Escamilla, Cobas, Balcazar, & Benin, 1999). In addition, the place of residence also influences the duration of EBF (Hoyer & Pokorn, 1998).

Besides these factors, two significant determinants of EBF intention are attitude to breastfeeding and subjective norm have been identified as based on the Theory of Reasoned Action (Ajzen & Fishbein, 1980). The intention to EBF is the mother's psychological tendency in the decision-making process about EBF. Breastfeeding attitude is the beliefs about EBF and the outcome evaluation of these beliefs. Subjective norm regarding EBF reflects the mother's perceptions towards the specific expectations of significant others and her motivation to comply with these others' expectations.

The study of Kloeblen-Tarver et al. (2002) showed that maternal breastfeeding attitudes were more predictive of breastfeeding intention than were subjective norms, regardless of parity or prior behavior. Among multiparous women, the amount of prior breastfeeding experience contributed independently to predicting the intention to breastfeeding and caused insignificant subjective norm. Another study found that prenatal behavioral belief about the consequences of breastfeeding was the strongest predictor of a mother's initiation into breastfeeding (Gielen, Faden, Campo, & Paige, 1992). In addition, Wambach (1997) found that prenatal breastfeeding attitude predicted the intention to breastfeeding whereas subjective norm failed to predict the

intention to breastfeeding. In contrast, Hill, Arnett, and Mauk (2008) found that subjective norm was related positively and predicted the intention to breastfeeding *(R^2=.40, β=.57, p<.05)* whereas attitude did not predict the intention to breastfeeding. Kessler, Gielen, Diener-West, and Paige (1995) studied the effect of women's significant others on her breastfeeding decisions. This was based on the Theory of Reasoned Action (TRA) and it was found that the preference of an infant's father was the predictor of woman's intention to breastfeed. Persad and Mensinger (2008) found that subjective norms (such as partner support) were strongly associated (OR=217.235, p=.001*)* with the intention to breastfeeding rather than breastfeeding attitudes (OR=1.431, p=.005).

In Bangladesh, one organization reported that there were few mothers who were serious about feeding colostrum to their infants as they did not receive adequate support from their families (Eminence Associates, 2006). Another study reported that Bangladeshi mothers also received advice from Dai (traditional birth attenders), mothers-in-law, and neighbors about breastfeeding, which mothers should start after the first three days (Al-Sabir et al., 2003). Some studies stated that mothers gave EBF to their infants after receiving information about the benefits of breastfeeding from the infant's father (Susin, Giugliani, & Kummer, 2005), infant's grandmother (Susin et al., 2005), family members, peer counselors, lactation specialists, hospital nurses (Khoury et al., 2005), and friends and strangers (Swanson, Power, Kaur, Carter, & Shepherd, 2006). Khoury et al. found that family preferences were associated with breastfeeding behavior. In addition, friends and relatives were significantly associated with a mother's intentions (Paien & Dorea, 2001).

Intention is an outcome variable of this study. Two factors, breastfeeding attitude and subjective norm derived from the TRA, are relevant to help explain the intention to EBF in the context of Bangladesh.

However, inconsistent and inconclusive findings have been reported in the literature about the magnitude of the predictability of these factors. For example, Kloeblen-Tarver et al. (2002) found that the attitudinal factor was more influential in a mother's intention to breastfeeding than normative factors. Wambach (1997) found that attitude was the dominant predictor of the intention to breastfeed whereas subjective norm was not a predictor of mothers' intention to breastfeed. In contrast, Hill et al. (2008) found that subjective norm was a predictor of intention to breastfeed whereas attitude could not predict intention. All these studies were conducted in the United States.

Therefore, it was decided it was worth investigating this phenomenon in Bangladesh where no such study has been conducted to date. The findings of this study may be used to provide nursing care to help increase the mothers' intention to EBF. This could also lead to an increase in the rate and duration of EBF in Bangladeshi mothers and decrease the mortality and morbidity rates of the infants.

Objective of the Study

To examine the extent to which breastfeeding attitude and subjective norm influence on the intention to EBF of mothers

Research Question

Do breastfeeding attitude and subjective norm influence mothers' intention to EBF?

Theoretical Framework

The conceptual framework of this study was guided by the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980). This theory provides a framework that can be used to understand human behavior. The TRA was developed by Martin Fishbein and Icek Ajzen in 1975 (Ajzen & Fishbein). The goal of the TRA is to predict and understand an individual's behavior (Ajzen & Fishbein). According to the TRA, a central factor is the individual's intention to perform a given behavior (Ajzen & Fishbein). Intention is assumed to describe the motivational factors that influence the behavior. Intention is the person's motivation to hold to a particular action (Ajzen, 1988). In this study, the intention to EBF is the degree of a mother's psychological willingness to perform or neglect the EBF of their infants up to six months.

A person's intention is a function of two basic determinants: personal factors and social influence. The personal factor is the individual's positive or negative evaluation of performing the specific behavior (Ajzen & Fishbein, 1980). This factor is the attitude toward behavior. In this study, breastfeeding attitude refers to the level of the positive or negative EBF beliefs of mothers based on the intention to EBF and outcome evaluation of these breastfeeding beliefs. The second determinant of intention is social influence which is the perceived expectations from significant others or referents, and the motivation to comply with these others' expectations (Ajzen & Fishbein). This factor is subjective norm. In this study, a subjective norm is

defined as the mother's perception about significant others' preferences or expectations of her to perform EBF and her motivation to comply with each of these other's expectations.

According to the TRA, the researcher assumed that the mother's intention to EBF can be predicted by breastfeeding attitude and subjective norm (Figure 1).

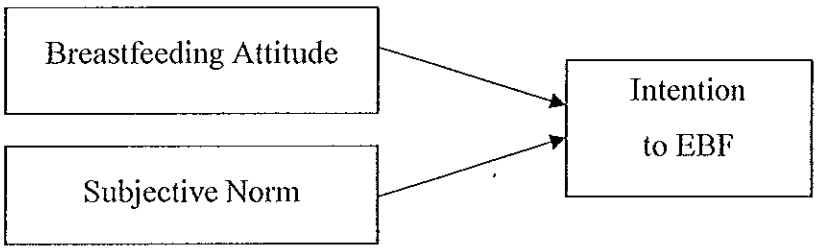

Figure 1
Conceptual Framework of the Study

Hypothesis

Breastfeeding attitude and subjective norm can influence the intention to EBF of mothers

Definition of Terms

The study variables are operationally defined as follows:

Breastfeeding attitude refers to the level of mother's positive or negative beliefs regarding EBF and the outcome evaluation of these beliefs. It was measured by the Breastfeeding Attitude Questionnaire developed by the researcher based on the TRA (Ajzen, 1988) and a literature review.

Subjective norm refers to the mother's perception about significant others' preferences or expectations about her performing EBF and her motivation to comply

with each of these others' expectations. It was measured by the Subjective Norm Questionnaire developed by the researcher based on the TRA (Ajzen, 1988) and a literature review.

Intention to EBF is the degree to which the mothers agree whether they want to perform or not perform EBF for at least six months postpartum. It was measured by the Intention to EBF Scale developed by the researcher based on the TRA (Ajzen, 1988) and a literature review.

Significance of the Study

The findings of this study will provide an understanding of the implication of EBF behaviors of mothers in another population. The study offers an additional contribution to the TRA to determine the empirical adequacy of this theory in Bangladesh where the culture is different from Western cultures. The theory was originated in the latter identify specific nursing interventions to increase mother's intention to EBF. This could increase the rate and duration of EBF lead to a decrease in the incidence of infants' and mothers' mortality and morbidity.

CHAPTER 2

LITERATURE REVIEW

The literature review is an important part of the research process. It guides the researcher from the research question to the data analysis process. This review of the literature includes three sections as follows:

1. Breastfeeding
    - 1.1 Incidences
    - 1.2 Definitions
    - 1.3 Types of Breastfeeding
    - 1.4 Stages of Breast Milk Production
    - 1.5 Benefits of Breastfeeding
2. The Theory of Reasoned Action (TRA)
    - 2.1 Overview of the Theory of Reasoned Action
    - 2.2 Compositions of the Theory of Reasoned Action
    - 2.3 Utilization of the Theory of Reasoned Action
3. Intention to EBF
    - 3.1 Definitions
    - 3.2 Factors Related to Intention to EBF
        - 3.2.1 Breastfeeding Attitude
        - 3.2.2 Subjective Norm
        - 3.2.3 Other Related Factors
4. Relationships between Breastfeeding Attitude, Subjective Norm, and Intention to Breastfeeding

5. Measurement of Breastfeeding Attitude, Subjective Norm, and Intention to Breastfeeding
6. Conclusion

Breastfeeding

Incidences

In the urban areas of Bangladesh, the rates of EBF within 1 hour after birth, within one day, 0-3months, 0-5 months, and up to 6 months were 36, 81, 47.2, 35.2, and 46.9%. However, the rates of EBF in rural areas within 1 hour after birth, within one day, 0-3months, 0-5 months, and up to 6 months were 35.5, 81.7, 50.2, 37.7, and 53.2% (Bangladesh Bureau of Statistics & United Nations Children's Fund, 2007). The rate of non-exclusive breastfeeding (breastfeeding with water) during 4-5 months was 19.0% and breastmilk with other milk or formula was 35.3% (Bangladesh Bureau of Statistics & United Nations Children's Fund, 2007). From another source, based on Bangladesh Demographic Health Survey, the latest rate of EBF for six months was 43 percent (IRT, 2009; UNICEF, 2008).

Definitions

Breastfeeding may be defined as the child receiving the breastmilk directly from the breast (Labbok, 2000). Breastfeeding is the best way of providing ideal food for the healthy growth and development of infants (World Health Organization, 2003). The American Academy of Pediatrics (2005) defined breastfeeding as the ideal method of feeding and nurturing infants and recognized breastfeeding as a critical component in achieving optimal infant and child health, growth and development.

Swanson et al. (2006) defined breastfeeding as infant getting milk from the mother's breast. Breastfeeding is the oldest and most natural way of feeding the newborn.

Types of Breastfeeding

According to the literature review, there are two types of breastfeeding: 1) Exclusive breastfeeding (EBF) and 2) non-exclusive breastfeeding (non-EBF) (American Academy of Pediatrics, 2005). EBF is defined as an infant receiving only breastmilk from his or her mother or a wet nurse, or expressed breastmilk with no supplementation of any types of foods (no water, no juice, no nonhuman milk) except for vitamins, minerals supplements or medicine, and oral rehydration up to six months after birth (American Academy of Pediatrics; Ergenekon-Ozelci, Elmaci, Ertem, & Saka, 2006; World Health Organization, 2009). However, EBF is considered as the preferred method of infant feeding during the initial months of life up to six months (World Health Organization, 2003). It has been recommended that infants should be breastfed exclusively up to six months after birth (World Health Organization). Complementary feeding should begin with the introduction of solid foods with breastfeeding after six months and beyond two years of age (Forster & McLachlan, 2007; World Health Organization).

In contrast, non-EBF is defined as an infant who has received breastmilk in combination with other solid food including water, syrup, sugar, honey, mustard oil, and medicines since before 6 months after birth (Davies-Adetugbo, 1997; Ergenekon-Ozelci et al., 2006; Khatun et al., 2008).

Stages of Breastmilk Production

Generally, breastmilk is formed in the acinar or alveolar cells of the mammary glands (Pillitteri, 2003). Immediately after delivery of the placenta, the level of

progesterone in the mother's body falls dramatically resulting in stimulating the anterior pituitary gland to produce prolactin. Prolactin, acting on the acinar cells of the mammary glands, stimulates the milk production (Pillitteri). There are three stages of breastmilk production. The first stage is lactogenesis. It is the result of placental lactogen stimulating breast alveolar cells (Humenic, Wreschner, Walton, & Hill, 1994). The second stage of lactogen begins after birth when milk is released into the alveoli of the breast (Pillitteri). The third stage of milk production is galactopoisis. Lactogen is maintained by prolactin and oxytocin in this stage (Humenic et al., 1994).

In each stage of breastmilk production the product has different appearances. First, colostrum is a thin, watery, yellowish fluid composed of protein, sugar, fat, water, mineral, vitamins and maternal antibodies. It is secreted by the acinar cell starting during the fourth month of pregnancy (Pillitteri, 2003). World Health Organization (2009) defined colostrum as the special milk that is secreted in the first 2-3 days after delivery. It is produced in small amounts of about 40-50 ml in the first day. It contains low levels of fat and high levels of protein and immunoglobulin. Second, transitional milk is intermediate in appearance and is available from Day 2 to Day 5. Last, the mature milk is thin and bluish-white in color (Frier & Eidelmen as cited in Humenic et al., 1994; Garza, Schoonler, Butle, & Motil as cited in Humenic et al., 1994; Jonas as cited in Humenic et al., 1994). It is available on Day 9 of postpartum period.

Benefits of Breastfeeding

Breastfeeding is an important process that provides maximum benefits for infants' and mothers' health. 'Breast is the best' is common theme in breastfeeding literature (Cooke, Schmied, & Sheehan, 2007). Infants gain the benefits of

breastfeeding in terms of health, nutrition, immunological, growth and developmental and psychological effects. Breastfeeding also helps to develop a close relationship between mother and child (Punthmatharith, 2001). There are lots of benefits of breastfeeding for infants and mothers as follows.

Benefits for Infants. Human milk is an ideal source of nutrition during the first stages of life (Bai, Middlestadt, Peng, & Fly, 2009). Breastmilk provides the infant with a plethora of nutrients in bio-available forms that are essential for the infant's growth and development (Bai et al., 2009). It is generally considered to be the superior source of nutrition for infants during the first year of life (Gatti, 2008; Marshall, Godfrey, & Renfrew, 2007; Memon et al., 2006). Breastfeeding helps infants' normal growth and development by providing all essential nutrients and vitamins. Breastmilk contains ideal electrolyte and mineral composition for human infant growth (Pillitteri, 2003), provides readily available glucose for rapid brain growth, provides easily digested protein (Pillitteri), and contains more linoleic acid and essential amino acid for skin integrity (Pillitteri). Breastfeeding infants have higher scores intelligence tests than formula-fed infants (Memon et al.; Roy et al., n.d; Wang, Wang, & Kang, 2005). The scores of cognitive function on average were 3.2 points higher among children who were breastfed compared with those who were formula-fed (World Health Organization, 2009). Breastmilk establishes children's personality (Memon et al.) and also provides better mouth formation and straighter teeth (Martindale, 2005).

Breastfeeding also reduces infant morbidity and mortality rates from infectious diseases such as diarrhea and acute respiratory tract infection which are the most common causes of infants' death especially in Bangladesh (Talukder, 2002).

Breastmilk reduces the risk of diarrhea (American Academy of Pediatrics, 2005; Pillitteri, 2003) and protects the infant from diarrhea (Pillitteri; Victora et al., 1987). Mulder-Sibanda and Sibanda-Mulder (1999) stated that in Bangladesh, prolonged breastfeeding has been related to lower mortality risks and reduces the risk of severe cholera. The World Health Organization (2009) reported that the risk of death from diarrhea of partially breastfed infants of 0-6 months of age was 8.6 times and for those who received no breastmilk the risk was 25 times to that of those who were exclusively breastfed'. It also protected the infants' from pneumonia (Victora et al., 1999). This is probably due to: 1) breastmilk contains secretary immunoglobulin A (IgA) which binds large molecules of foreign proteins, including viruses and bacteria (Pillitteri); 2) lactoferrin is an iron binding protein in breastmilk which can interfere with the growth of bacteria (Pillitteri); 3) lysozyme in breastmilk destroys the bacteria by lysing (dissolving) the cell membranes and increases the effectiveness of antibodies (Pillitteri); 4) lactobacillus bifidus in breastmilk interferes with the colonization of bacteria in the gastrointestinal tract (Pillitteri) and reduces necrotizing enterocolitis (Memon et al., 2006); and 5) leukocytes in breastmilk provide protection against common respiratory tract infection (Lopez-Alarcon, Villalpando, & Fajaro, 1997; Pillitteri).

Breastfeeding infants also have a lower risk of illness and other diseases, including allergies, childhood cancer, diabetes, and Sudden Infant Death Syndrome (SIDS) (Mojab & Oregon, 2000). Breastmilk also reduces urinary tract infection (Bai et al., 2009; Memon et al., 2006) and otitis media (Memon et al.). In addition, breastmilk contains the ideal mixture of nutrients and factors that promote the

development of the infant's gut and immune system, and prevents pathogen invasion (Filteau, 2000).

Benefits for Mothers. The mothers gain several physiological and psychological benefits from breastfeeding. The physiological benefits of breastfeeding are: 1) it reduces the maternal postpartum hemorrhage (Devis-Adetugbo, 1997); 2) it helps to return the uterus to its normal position (normal involution) by stimulating the posterior pituitary (Martindale, 2005; Pillitteri, 2003; Talukder, 2002); 3) it prevents anemia (Mojab & Oregon, 2000); 4) it helps in birth spacing (Memon et al., 2006); 5) it enables mother to recover her immune and nutritional status between pregnancies (Memon et al.) because the frequent sucking since birth can increase prolactin and prolactin will inhibit ovulation (Bella & Dabal, 1998; Mojab & Oregon); 6) it protects mother's from breast cancer (Martindale; Memon et al.; Pillitteri), ovarian cancer (Martindale; Mojab & Oregon), and endometrial cancer (Mojab & Oregon); 7) it decreases insulin requirements in diabetic mothers (Roy et al., n.d); and 8) it lowers the risk of osteoporosis in later life (Martindale; Memon et al.; Mojab & Oregon).

The psychological benefits of breastfeeding are to: 1) increase the attachment between mother and infant (Arora, McJunkin, Wehrer, & Kuhn, 2000; Janke, 1994; Victora et al., 1987); 2) increase closeness which provides mothers opportunity to learn infant's behavioral needs (Punthmatharith, 2001); and 3) reduce the cost and time of preparation of formula feeding (Martindale, 2005; Pillitteri, 2003). Successful breastfeeding can have an empowering effect because it is a skill which women can master (Pillitteri).

The Theory of Reasoned Action (TRA)

Overview of the Theory of Reasoned Action

The TRA was first introduced by Martin Fishbein in 1967, was refined and tested byFishbein and Ajzen in 1975 (Ajzen & Fishbein, 1980). The objective of the TRA is to predict and understand an individual's behavior (Ajzen & Fishbein). The first step of this objective is to identify and measure the behavior of interest and the second step objective is to identify the determinants of intention (Ajzen & Fishbein). According to the TRA, a person's intention is a function of two determinants which are attitude toward behavior and subjective norm (Ajzen & Fishbein). Based on the theory, intention is the psychological or cognitive representation of an individual's readiness to perform a given behavior. Intention is an immediate antecedent of human behavior (Ajzen, 1988). As a general rule, the more favorable the attitude and subjective norm with respect to a behavior the stronger should be the individual's intention to perform the behavior under consideration (Ajzen).

Composition of the Theory of Reasoned Action

According to the TRA, there are two antecedents of intention, made up of attitudes and subjective norms, which are used in the final analysis to determine the individual's behavioral intention and action (Ajzen, 1988). Based on the TRA, behavior understands or thinking which seems to be a function of the salient beliefs related to the behavior (Ajzen). There are two kinds of beliefs, and another is a person's intention which guides in human behavior (Ajzen). In terms of beliefs, behavioral beliefs are the immediate determinants of a person's attitude toward the behavior. Normative beliefs are the person's beliefs whereby a specific individual or group thinks he/she should or should not perform the behavior. These are the beliefs

underlying a person's subjective norm that may facilitate or impede the performance of the behavior (Ajzen).

According to Fishbein and Ajzen's review (as cited in Armitage & Conner, 2001), the attitude towards behavior is the subjective value of a given outcome which affects the attitude in direct proportion to the strength of the beliefs. Subjective norm is a global perception of social pressure either to comply with or refuse the wishes of others (Ajzen, 1991). In their respective aggregates; behavioral beliefs produce a favorable or unfavorable attitude towards the behavior, and normative beliefs constitute underlying determinants that facilitate or impede the performing a specific behavior (Ajzen, 1988). In addition, attitudes towards the behavior and subjective norms lead to a function of behavioral intention (Ajzen). Intention is an immediate antecedent of the behavior (Ajzen & Fieshbein, 1980). Intention is a tendency to do the particular action under consideration (Ajzen). Generally, a person forms an intention to engage in a certain behavior. Intention is assumed to be related to some motivational factors which have an impact on behavior. Intention is the person's decision making process whether he/she should or should not perform a specific behavior (Ajzen). It means that degree of effort a person is willing to make to perform such a behavior (McEwen & Wills, 2007).

Utilization of the Theory of Reasoned Action

Several researchers have used the TRA to support the studies. For example, Manstead et al. (1983) tested the Theory of Reasoned Action and found that attitudinal factors contributed significantly to the prediction of the intention to breastfeeding. The multiple correlation of the attitudinal and normative components with the intention to breastfeeding was .77 accounting for 59.6% of the variance in

breastfeeding intention. Kloeblen-Tarver et al. (2002) studied the impact of attitudes, norms, parity, and experience on the intention to breastfeed. They found that mothers' breastfeeding attitudes were more predictive than perceived social norms. Wambach's (1997) study also supported the theory that attitude significantly predicted the breastfeeding intention.

Based on the TRA, another two studies also found that subjective norm was associated with intention to breastfeeding. Hill et al. (2008) found that respondents' intentions to breastfeed were influenced positively by subjective norm (β=.57). Persad and Mensinger (2008) found that partner and family support maintained a unique contribution to the intention to breastfeeding rather than breastfeeding attitude.

Furthermore, other studies also used the TRA in different areas, such as Jaccard and Davidson's study (as cited in Ajzen & Fishbein, 1980). They studied a woman's intention to use or to avoid the use of birth control pills by unmarried college women. They found that attitude towards using birth control pills (r=.81) and subjective norm with respect to the use of birth control pills (r=.68) correlated with the intention to use birth control pills. Sweet and John (1991) applied the TRA with 103 black women and found that women's own attitudes were a stronger determinant of intention to use condoms than their perceptions of normative influences, particularly among women with average knowledge of AIDS.

Intention to EBF

Definitions

Intention is an individual's choice to engage in a certain behavior in the future. The intention to EBF is the mother's willingness to perform or avoid EBF to her

infant for up to six months. Hill et al. (2008) defined the intention to EBF as the decision making process used by the women whether to breastfeed or avoid this practice. Wambach (1997) defined intention to EBF as the degree of certainty about carrying out breastfeeding plans. In Wambach's study, the intention to EBF was defined as a mother's plan to feed their infants and how they actually fed these infants during the six months following postpartum. In addition, the intention to breastfeed is established by the mother's positive or negative appraisal of breastfeeding and the way the mother perceived the social referents such as family members so as to perform EBF (Paine & Dorea, 2001).

Factors Related to Intention to EBF

There were many factors that influenced mothers' intention to breastfeeding. For example, based on the previous studies using the TRA as a framework, two factors influenced the intention to breastfeeding of mothers. These were breastfeeding attitude and subjective norm. In addition, other factors that related to the intention to breastfeeding were also found in the literature review. The details of these factors are as follows:

Breastfeeding Attitude. Attitude towards the intention to breastfeeding plays an important role in determining the decision of mothers to EBF. Based on the TRA, Kloeblen-Tarver et al. (2002) showed that primiparous women without direct breastfeeding experience, and multiparous mothers with limited breastfeeding experience, had the strongest negative attitudes to breastfeeding. The researchers also reported that mothers who had negative attitude toward breastfeeding felt more embarrassed and this did not make them closer to their infants and they had less intention to breastfeed. Manstead et al. (1983) found that breastfeeding attitudes

contributed significantly to the prediction of intention to breastfeeding. Wambach (1997) revealed that prenatal breastfeeding attitudes predicted intentions. Ratananugool (2001) found that attitudes towards breastfeeding were a significant predictor of the intention to breastfeeding in Thai adolescent mothers.

Some other studies that were not based on the TRA found that intention to breastfeeding was associated with attitude towards the breastfeeding and formula feeding (Hizel, Cohen, Tanzer, & Sanil, 2006). Paine and Dorea (2001) found that attitude towards the breastfeeding was significantly associated with a mother's initiation into the length of breastfeeding.

Breastfeeding attitude is a function of breastfeeding beliefs. There are some traditional and cultural beliefs that are related to feeding practices (Hizel et al., 2006). Some researchers reported that most of the mothers gave their infants prelacteal foods or 'heating foods' such as honey, sugar water, mustard oil (Al-Sabir et al., 2003; Darrmstadt et al., 2006; Khatun et al., 2008), geggery, ghee (butter from cows mink), ghatti (herbal paste), misri pani (Darrmstadt et al.), and tea (McKenna & Shankar, 2009; Memmon et al., 2006). This was because mothers believed that: 1) honey and sugar water would ensure infant's pleasant personality (Ahmed, Parveen, & Islam, 1998; Ergekon-Ozelci et al., 2004), or a"sweet voice" (Rehana, 1998), keep the mouth and throat moist and the body warm, and help the infant to urinate (Darrmstadt et al.; McKenna & Shankar); 2) ghatti cleans the stomach and helps to pass stools (Darrmstadt et al.; McKenna & Shankar); and 3) ghee evacuates meconeum (McKenna & Shankar). Mothers discarded the colostrum because they believed that it was harmful for infants and might cause liver trouble or diarrhea (Darrmstadt et al.;

Ergekon-Ozelci et al.; Talukder, 2002), and it purified of the tubules of mammary glands (McKenna & Shankar; Memmon et al.).

Based on literature review, there were several traditional and cultural beliefs relating to breastfeeding. These include: 1) colostrum is harmful for infants; 2) evil eye; 3) heating foods; 4) sweet voice/good personality; 5) delay in producing breastmilk; 6) figure consciousness; 7) spoiled milk and weak milk; 8) incomplete food; 9) infants always hungry; 10) embarrassment; and 11) fasting/Ramadan. Each belief will be described as follows in the context of Bangladesh:

1. Colostrum is harmful for infants

Only ten percent of newborn received the colostrum (Ahmed et al., 1998). According to traditional beliefs, most of the Bangladeshi mothers introduced prelacteal food such as honey, sweetened water, and mustard oil. This was due to common beliefs and trends to discard colostrum and start weaning their infants early and ending breastfeding before six months (Ahmed et al.; Darrmstadt et al., 2006). EBF is considered to be dangerous for infants and some mothers who discarded the colostrum and gave water or honey instead of breasfeeding as they believed that water prevents thirst, constipation and indigestion (Darrmstadt, et al.; Davies-Adetugbo, 1997). One 2008 study from Africa found that 79.5% adolescent girls agreed with the statement "It is healthy for one month old infants to drink water" (Hadley, Lindstrom, Belachew, & Tessema, 2008). Davies-Adetugbo also reported that mothers believed that colostrum is bad milk because it had stayed in the breast for nine months of pregnancy. They thought "It is pus." And it contained germs which could harm infants. It was also dirty which may cause disease (Darrmstadt et al.). In according with religious leaders' opinions, mothers also believed that for the first 3 days the

yellowish blue milk is dirty so that mothers should not breastfeed their infants during the first 3 days after birth (Ergenekon-Ozelci et al., 2006). McKenna and Shankar (2009) reported that mothers also believed that the first breastmilk is 'old' because it was stored in the breast from the start of pregnancy. Therefore, the breasts must be washed and colostrum should be discarded for the first day until 'true milk' comes in. Discarding colostrum is thought to purify the tubules of the mother's mammary glands. Talukder (2002) reported that, in Bangladesh, many mothers used prelacteal feeding and water, and rejected colostrum because they believed that breastfeeding caused the recurring of diarrhea.

The initiatial use of breastmilk includes that providing colostrum is influenced by cultural beliefs (Kakute et al., 2005). In Turkey, thirty percent of mothers believed that colostrum could harm their infants (Hizel et al., 2006). Fifty two percent of mothers reported that colostrum is 'bad' for infants and also stated that it is incomplete and inadequate food for infants (Ergenekon-Ozelic et al., 2006; Memon et al., 2006). Mothers believed that the color of colostrum is bad and this is a barrier to the initiation of breatfeeding (Kakute et al.). Mothers reported that colostrum has little nutritional value and is considered to be dirty and can be harmful to infants (McKenna & Shankar, 2009).

2. Evil eye

Some mothers believed that evil spirits are a common source of illness especially in nursing mothers and they may affect the continuation of breastmilk. Some mothers also believed that 'batash laga' (evil air) and 'najar laga' (evil eye) can affect mother's breastmilk which may cause diarrhea in infants (Nahar, 2004).

3. Heating foods

Newborns are traditionally fed 'heating foods' such as honey and sugar water (Greiner as cited in Rehana, 1998), mustard oil (Khatun et al., 2008), cow's milk, goat's milk, and misripani (Darrmstadt et al., 2006). Mothers believed that these foods gave strength and prevented cold during the first few days for a newborn (Darrmstadt et al.; Rehana, 1998). Mothers also believed that honey cleans the tongue and stomach, prevents dryness of throat (Al-Sabir et al., 2003; Darrmstadt et al.), and satisfies the infant's hunger (Haider, Ashworth, Kabir, & Huttly, 2000). In other countries, mothers also introduce some prelacteals such as geggary and ghee (McKenna & Shankar, 2009), and ghatti and tea (Memon et al., 2006). It was believed that ghee and ghatti clean infants' bowels and stomachs.

4. Sweet voice/good personality

Some mothers believed that supplementing honey or sugar water would lead to the development of a "sweet voice" in an infant's (Al-Sabir et al., 2003; Rehana, 1998) and being soft/sweet spoken (Darrmstadt et al., 2006). Ahmed et al. (1998) also stated that giving prelacteals like honey is associated with the belief that this type of food will ensure an infant having a pleasant personality in future.

5. Delay in producing breastmilk

Withholding breastfeeding up to 3 days after birth was practiced (Darrmstadt et al., 2006) because mothers believed that breastmilk production needs at least three days (Ahmed et al., 1998; Al-Sabir et al., 2003; Darrmstadt et al.; Talukder, 2002).

6. Figure consciousness

Women from high classes in societies believed that breastfeeding can decrease their shape due to the disfigurement of their beauty (Darrmstadt et al., 2006;

Giashuddin & Kabir, 2004). However, 48.4% of students believed that breastfeeding would improve the mother's breast and figure (Bella & Dabal, 1998). On the other hand, 33% of students believed that breastfeeding would spoil the mother's breast and figure. In an urbanized modern society, women believed that breastfeeding adversely affects the mother's figure which may decrease the mothers' intention to breastfeeding (Bella & Dabal; Giashuddin & Kabir; Swanson et al., 2006).

7. Spoiled milk and weak milk

Ergenekon-Ozelic et al. (2006) reported that women believed that a pregnant woman's milk is 'spoiled milk.' It is forbidden by religion to feed an infant with it. Some mothers also believed that if she was pregnant, her milk belongs to her fetus. If she breastfed, her infant would get sick. Working mothers also believed that breastfeeding is harmful after working in the sun.

8. Incomplete food

Some mothers believed that breastmilk is an 'incomplete' food because it only satisfied the infant's thirst and did not increase the infant's weight. When the infant cries, he or she demands more than just breastmilk, and the infant's intestines needed something solid (Kakute et al., 2005). These beliefs reflect Bangladeshi mothers' beliefs that breastmilk is not enough to satisfy and increase their infant's weight. Consequently, they introduce other foods to their infant.

9. Infant always hungry

About 53% infants received water and tea in the first few days after birth because most of the mothers thought that infants always seem to be hungry. Water and tea could make infants less hungry (Marques et al., 2001). This belief also reflects

the beliefs of Bangladeshi mothers that breastmilk cannot satisfy infants' hungry. Consequently, they introduce other prelacteal foods to their infant.

10. Embarrassment

Khoury et al. (2005) revealed that women who breastfed were more aware about the benefits of breastfeeding and felt less embarrassed than women who gave formula to their infants.The rate of breastfeeding was significantly low in women who felt embarrassed about it. Swanson et al. (2006) stated that perceived social barriers reflect the public context of breastfeeding and such emotions influenced the beliefs about embarrassment which is a major barrier to breastfeeding. Kloeblen-Tarver et al. (2002) found that multiparous women with limited breastfeeding experience had the strongest negative breastfeeding attitudes and felt more embarrassed than women who had bottle-fed their infants.

11. Fasting/Ramadan

Of fifty two percent of fasting mothers, twenty two percent of them perceived a decrease in their own breast milk during fasting (Hizel et al., 2006). According to the Islamic religion, Muslims are required to fast from sunrise to sunset during the month of Ramadan. Those who are ill, pregnant, nursing mothers or menstruating need not fast during Ramadan. However, mothers perceived that their breastmilk decreased during fasting (Hizel et al., 2006). In Bangladesh, most of the mothers are illiterate and normally they hold strict religious beliefs. This holds not only for Muslim mothers, but also for other religious mothers. Maintaining their religious beliefs may decrease their intention to EBF. Therefore, they may easily introduce other substitute foods to their infants.

Subjective Norm. Subjective norm is another important factor that influences mother's intention to EBF. Based on the TRA, Hill et al. (2008) found that women were significantly influenced by the perceived opinion regarding breastfeeding of significant others including husband, siblings, friends, and parents. Women also stated that husbands were most influential of the significant others. Another study found that women's intentions to breastfeeding is strongly and positively affected by significant others (an infant's father and grandmothers) towards breastfeeding (Kessler et al., 1995). Swanson et al. (2006) found that close family members were significant predictor of intention to breastfeeding. Hill et al. also found that subjective norms predicted intentions to breastfeed. However, Wambach (1997) found that subjective norm failed to predict intention to breastfeeding.

There are some other studies which are not based on the TRA. They showed that significant others play an important role on the mothers' intention to breastfeeding such as: partner/infant's father (Humphreys et al., 1998; Kakute et al., 2005); infant's grandmothers/mother-in-law (Hizel et al., 2006; Saunders-Goldson & Edwards, 2004; Susin et al., 2005); sister-in-law (Arora et al., 2000; Kools et al., 2006); own mothers (Kools et al.; Saunders-Goldson & Edwards); other family members (Humphreys et al.; Khoury et al., 2005); and lactation consultants (Humphreys et al.).

In Bangladesh, the father's attitude is also responsible for the continuation of EBF (Haider, Kabir, Hamadani, & Habte, 1997). Darmstadt et al. (2006) stated that traditional birth attendants can play an important role in increasing the intention of mothers about EBF. Eminence Associates (2006) also reported that there were few mothers who were serious about feeding colostrum to their infants because they did

not receive adequate support from their families. One mothers said that "I know that the newborn should be given colostrum, but my family put honey in the infant's mouth." Another mother said that "I have heard on the TV that infants should not be nourished through anything except EBF. However, my grandmother gave barley cooked with milk to my infant." Haider et al. (1997) studied the reasons for the failure of breastfeeding counseling with 125 mothers in Bangladesh. Ii was found that mothers complained about the dominant role of grandmothers and that the lack of financial support from husband contributed to their failure to breastfeed exclusively.

Other Related Factors

Many contributing factors that have affected a woman's intention to breastfeeding have been identified. These related factors include: 1) maternal knowledge (Ahmed., 2008; Ergenekon-Ozelic et al., 2006; Giashuddin & Kabir, 2004; Hizel et al., 2006; Khatun et al., 2008; Khoury et al., 2005; Kong & Lee, 2004); 2) previous breastfeeding experience (Kloeblen-Tarver et al., 2002; Manstead et al., 1983); 3) parity (Humphreys et al., 1998; Kloeblen-Tarver et al.); 4) family income and maternal employment (Khoury et al.; Kools et al., 2006; Paine & Dorea, 2001); 5) unplanned pregnancies (Perez-Escamilla et al., 1999); and 6) residence and environment (Hoyer & Pokorn, 1998; Kong & Lee).

1. Maternal knowledge

Breastfeeding choice and success are associated with higher levels of breastfeeding knowledge. Findings suggested that more breastfeeding knowledge influenced mothers' intention to breastfeeding (Hizel et al., 2006; Kong & Lee, 2004). In Bangladesh, knowledge about EBF is essential for all lactating mothers. Khatun et al. (2008) found that only 9.1% mothers knew correctly about the benefits of

colostrum. Ergenekon-Ozelic et al. (2006) revealed that the mothers' education was an important factor influencing the introduction of colostrum to newborns (9.9%) within four hours of birth. In contrast, some other studies stated that mothers' high education was associated with a shorter duration of breastfeeding (Haider et al., 1997; Giashuddin & Kabir, 2004). Therefore, breastfeeding knowledge was significantly related to its duration when the intention was (Khoury et al., 2005; Wells et al., 2002).

2. Previouse breastfeeding experience

Kloeblen-Tarver et al. (2002) found that women with breastfeeding experience were the most influential factors in the infant feeding decision. Manstead et al. (1983) found that previous breastfeeding behavior of women significantly contributed to the prediction of intention to breastfeeding (β=.27, p<.001). Humphreys et al. (1998) showed that the amount of previous breastfeeding experience was strongly correlated with the intention to breastfeeding. In contrast, another study revealed that previous breastfeeding experience was a significant risk factor for the early termination of breastfeeding (Digirolamo, Thompson, Martorell, Fein, & Grummer-Strawn, 2005).

3. Parity

Humphreys et al. (1998) revealed that parity was significant correlated with the intention to breastfeeding among women with no breastfeeding experience. Kloeblen-Tarver et al. (2002) stated that prior infant-feeding methods on the part of multiparous women with breastfeeding experience were the most influential factor in the infant feeding decision. In contrast, Manstaed et al. (1983) found that multiparous mothers have less intention to breastfeed than primipara mothers.

4. Family income and maternal employment

Hill et al. (2008) showed that the intention to breastfeeding was low among

mothers with low-incomes. In Bangladesh, most mothers are housewives and they are dependent on their husbands' income. Haider et al. (1997) found that about 25% of mothers failed to breastfeed because they depended on financial support from the husband. Another study stated that low family-incomes also influence the mothers' intention to breastfeeding because most mothers need to spend more time outside the home to earn money (Ergeneko-Ozelci et al., 2006). Wells et al. (2002) showed that for low-income women, the rate of breastfeeding was considerably less during the early postpartum period. Persad and Mensinger (2008) revealed that the intention to breastfeeding was significantly associated with a higher annual household income. Kools et al. (2005) found that the strongest predictor of the continuation of breastfeeding was the intention of returning to work at the time of birth. A study of Lindbberg (1996) found that women who are employed part-time are likely to breastfeed and for longer durations than women employed full-time. Paine and Dorea (2001) found that mothers who were not employed outside the home intended to breastfeed for significantly longer than those who were thus employed. Therefore, low family-incomes may influence mothers' intention to breastfeeding their infants up to six months after postpartum.

5. Unplanned pregnancies

An unplanned pregnancy had a negative influence on the duration of breastfeeding. The study of Perez-Escamilla et al. (1999) indicated that a planned pregnancy may be used as an alternate for the encouragement of breastfeeding by mothers. Therefore, as a developing country, unplanned pregnancies in Bangladesh are a risk factor causing shorter durations of breastfeeding.

6. Residence and environment

It was found that living in urban areas in developing countries has a negative impact on breastfeeding (Perez-Escamilla et al., 1999). Bangladeshi mothers who lived in rural areas were less likely to terminate their breastfeeding than those who lived in urban area (Giashuddin & Kabir, 2004). However, mothers who lived in cities breastfed longer than those who lived in villages (Haider et al., 1997; Hoyer & Pokorn, 1998; Perez-Escamilla et al.). Hoyer and Pokorn also showed that place of residence significantly correlated with the duration of breastfeeding.

Relationships between Breastfeeding Attitude, Subjective Norm, and Intention to Breastfeeding

According to the TRA, most studies showed that mother's attitude to breastfeeding and subjective norm regarding breastfeeding were associated with a mother's intention to breastfeeding. Manstead et al. (1983) tested the TRA with 123 primiparous and multiparous mothers' aged between 16-40 years in England. They found that for primiparous mothers, the multiple correlation of the attitudinal and normative factors with the intention to infant feeding was .77, accounting for 59.8% of the variation in the intentions. Breastfeeding attitudes {F (1, 104)=45.26, β=.46, p<.001} and subjective norms {F (1, 104)=43.30, β=.45, p<.001} contributed to the prediction of intention to breastfeeding. For multiparous mothers, the multiple correlation of the attitudinal and normative components with this intention was .77, accounting for 59.6% of the variation in intention to infant feeding. Breastfeeding attitudes {F(1, 107)=81.84, β=.53, p<.001} and subjective norms {F(1,105)=6.72, β=.19, p<.01) also contributed to the prediction of the intention to breastfeeding.

When combined, the number of primiparous and multiparous mothers, the breastfeeding attitudes {$F(1,212)=134.63$, $\beta=.61$, $p<.001$}, and subjective norms {$F(1,209)=42.86$, $\beta=.22$, $p<.01$} also predicted the mother's intentions. Kloeblen-Tarver et al. (2002) studied the intention to breast-feed and the impact of attitudes, norms, parity, and experience with 367 primiparous and 596 multiparous women in Atlanta. The findings showed that the primiparous women's attitudes ($sr^2=.11$, $p<.01$), and the multiparous women's attitudes ($sr^2=.18$, $p<.01$), were more predictive of intention to breastfeeding than norms ($sr^2=.03$, $p<.01$ for primipara, $sr^2=.01$, $p<.01$ for multipara, respectively). Saunders-Goldson and Edwards (2004) found that subjective norm was related with intention to breastfeeding ($r=.24$, $p<.05$). Ratananugool (2001) used the Theory of Planned Behavior (TPB) to frame a study and found that attitude towards the breastfeeding was a significant predictor of the intention to breastfeeding. Wambach (1997) studied breastfeeding intention and outcome with a test of the Theory of Planned Behavior in 135 child bearing women in the United States. She measured the breastfeeding attitude, subjective norm, perceived behavioral control and intention based on Ajzen's theory. She found that prenatal breastfeeding attitude predicted intention. However, the subjective norm failed to predict the intention to breastfeeding. In contrast, Hill et al. (2008) studied the intention to breastfeeding among 88 low-income Hispanic and African-American pregnant and lactating women. The results showed that subjective norm predicted the intention to breastfeeding ($\beta=.57$, $p<.05$), whereas attitude could not predict such intention. Persad and Mensinger (2008) studied maternal breastfeeding attitude in association with the intent to breastfeeding and socio demographics among Urban primiparas. They found that subjective norm had a strong association with the

intention to breastfeeding (OR=217.235, p=.001). Swanson et al. (2006) studied the impact of knowledge and social influences on adolescent's breastfeeding beliefs and intentions in the central Scotland. They measured intention by asking how they intended to feed their infants if they became a parent in the future. Breastfeeding beliefs were measured using a breastfeeding scale with 229 males and 267 females, aged between 11-18 years. The results showed that positive beliefs and supportive subjective norms predicted future intentions to breastfeed. Parental norms exerted a greater influence than peer norms on adolescent's breastfeeding beliefs.

Measurement of Breastfeeding Attitude, Subjective Norm, and Intention to Breastfeeding

In an extensive review of literature, the researcher found that some studies focused on breastfeeding attitude, subjective norm, and intention to breastfeeding (Hill et al., 2008; Manstead et al., 1983; Ratananugool, 2001; Wambach, 1997). The details of each measurement of these variables are as follows:

Measuremeant of Breastfeeding Attitude

The Breastfeeding Attitude Questionnaire. This was developed by Hill et al. (2008) to measure pregnant women and lactating women's attitude to breastfeeding. This scale was adapted from Azjen Fishbein's (1991) study. A semantic differential scale uses bipolar adjective pairs to measure agreement or disagreement with a concept. These included bad/good, foolish/wise, and harmful/beneficial. Attitude statements were measured on a 3-point Likert scale (-1=disagree to 1=agree). They used this scale in the study of intention to breastfeeding among low income pregnant

and lactating women in the United States. There was evidence of convergent validity and discriminant validity. The reliability was .84.

The Breastfeeding Attrition Prediction Tool (BAPT). The BAPT was developed by Janke (1994) and based on the Theory of Planned Behavior. It consisted of three parts: Attitude toward breastfeeding (58 items); subjective norm or Social and Professional Support (PSP) (26 items); and breastfeeding control (10 items). Ratananugool (2001) used an attitude toward breastfeeding subscale to measure 140 Thai Adolescent mothers' attitude toward breastfeeding. The attitudinal subscale had two parts. The first part, consisting of 29 items, was used to measure the beliefs concerning the consequences of breastfeeding and bottle-feeding. The first part had two subscales: Negative Breastfeeding Statements (NBS 15 items) and Positive Breastfeeding Statements (PBS 14 items). The second part was made up of 29 items corresponding with items in the first part. A 6-point Likert scale was used for all items ranging from 1="strongly disagree" to 6="strongly agree" for breastfeeding beliefs and 1="not important to me" to 6="important to me" for outcome evaluation. The content validity was estimated by a panel of 10 nurses in lactation clinics (Janke, 1992). The internal consistency (Cronbach's alpha coefficient) for the NBS was .88 and that for the PBS was 0.74 (Ratananugool).

The Attitudes to Behavior Questionnaire. This questionnaire was developed by Manstead et al. (1983) based on the Ajzen's (1980) theory. The purpose of this questionnaire was to measure mothers' attitudes to breastfeeding and to bottle feeding. It consists of 12 such statements, 6 for each feeding methods, and evaluation statements corresponding to each of the feeding belief statements. A 7-point Likert scale had endpoints labeled 7="very likely" to 1="very unlikely" for feeding beliefs,

and 7="very important to me" to 1="completely unimportant to me" for outcome evaluation. The validity and reliability of this questionnaire was not mentioned.

Attitude on Breastfeeding Scale (ABS). This scale was used by Wambach (1997) to measure the breastfeeding attitudes of pregnant women in the United States. This scale was developed by Cusson (1985) to assess facets of adolescent girls' attitudes toward breastfeeding. This scale had 17 items and it was a 5-point Likert scale. The Cronbach's alpha coefficient of this scale was .80 and the test-retest reliability was .90 (Wambach).

Measurement of Subjective Norm

Subjective Norm Scale. This scale was developed by Hill et al. (2008) to measure subjective norm regarding breastfeeding. This scale was adapted from Azjen Fishbein's 1991 study. The scale consists of 2 items. "Most people who are important to me think I should breast-feed" and "In general, people think breast-feeding will help my baby and me." Each item was measured on a 3-point Likert scale (agree to diagree). This scale was used with pregnant/postpartum women (n=88) in a study of breastfeeding intentions among low income pregnant and lactating women. The convergent validity and discriminant validity was acceptable. The reliability of this scale was 0.85.

Social and Professional Support Scale (PSP). Ratananugool (2001) used this scale to measure subjective norm. It is a subscale of the BAPT developed by Janke (1994) based on the TPB. This measure had two parts. The twelve items in the first part measured adolescent mother's perception about influences from significant others to carrying infant feeding and 12 items in the second part reflected the individual's motivation to comply with these referents. A 6-point Likert scale ranging from

1="definitely not breastfeed" to 6="definitely breastfeed" was used with the normative beliefs and 1="do not care at all" to 6="care very much" with the motivation to comply. Content validity was estimated by a panel of 10 nurses in lactation clinics (Janke, 1992). The Cronbach's alpha coefficient of this scale was .83 (Ratananugool).

Subjective Norm Questionnaire. Manstead et al. (1983) developed the Subjective Norm Questionnaire based on the Ajzen's (1980) theory. This questionnaire had four such normative belief statements for each feeding method (breastfeeding and bottle feeding) and motivation to comply corresponding to each of the feeding methods. A 7-point Likert scale was used with endpoints labeled 7="definitely should breastfeed" and 1="definitely should not breastfeeding" or 1="definitely should bottlefeed" and 7="definitely should not bottle feed" for normative beliefs and 1="do not care at all" to 7="care very much" for motivation to comply. The validity and reliability of this questionnaire was not measured.

Subjective Norm Questionnaire. This scale was developed by Wambach (1997) using Ajzen's guidelines to measure subjective norm. It consists of normative beliefs (4 items) and mother's motivation to comply with significant others expectation (4 items). A 7-point Likert scale with endpoints of 7="definitely should breastfeed" to 1="definitely should bottle-feed" was used with normative beliefs and 1="do not care at all" to 7="care very much" with motivation to comply. The internal consistency of this scale using the theta coefficient was .64. The test-retest reliability for this scale was .71.

Measurement of Intention to Breastfeeding

Intention Scale. This scale was developed by Hill et al. (2008) and was used to measure mothers' intention to breastfeeding. This scale consists of three items: "After I have my baby, I plan to breast-feed;" "I plan to breast-feed for at least 6 months;" and "I plan to breast-feed longer than 6 months." Each item is measured on a 3-point Likert scale (agree to disagree). The convergent validity and discriminant validity was acceptable. The reliability was .88.

Breastfeeding Intention Scale (BIS). Ratananugool (2001) developed the BIS for measuring Thai mother's intention to breastfeeding. It is a 3-item questionnaire. The seven-point scale contained end points of "definitely do not breastfeed" (1) to "definitely breastfeed" (7). The total score was obtained by summing all responses. A higher score indicated that mothers strongly intended to breastfeed their infants. The interrater agreement was perfect (CVI=1.00). The Cronbach' alpha coefficient of this scale was .86.

Intention Questionnaire. Manstead et al. (1983) developed this questionnaire based on Ajzen's (1980) theory to assess primipara and multipara mothers' intention toward breastfeeding and bottle feeding. It was a single item: How do you intend to feed your baby? A 7-point Likert scale with end points labeled "I shall definitely breastfeed my baby" (7) and "I shall definitely bottlefeed my baby" (1). The mid-point was labeled "I cannot decide at the moment." The validity and reliability of this questionnaire was not measured.

Breastfeeding Intention Scale. This scale was used by Wambach (1997) to measure mothers' intention to breastfeeding. It was a single item developed by Manstead et al. (1983). A 7-point Likert scale contained endpoints of "definitely will

bottle-feed" (1) and "definitely will breastfeed" (7). The mid-point of the scale represented unsure about feeding plans. The test-retest reliability at two weeks was .90.

Conclusion

In summary, most of the studies found that mother's breastfeeding attitude and subjective norm were associated with intention to breastfeeding whereas some studies failed to predict such intention. For example, Wambach (1997), Ratananugool (2001), and Kloeblen-Tarver et al. (2002) found that a mother's attitude was a strong predictor of intention to breastfeeding whereas Hill et al. (2008) showed that attitude did not predict a mother's intention. Hill et al. and Persad and Mensinger (2008) found that subjective norm predicted a mother's intention to breastfeeding whereas Ratananugool and Wambach showed that subjective norm failed to predict mother's intention to breastfeeding. Therefore, the influence of breastfeeding attitude and subjective norm on mother's intention to EBF is open to question. From the related literature review and the TRA, the researcher expected that breastfeeding attitude and subjective norm would predict intention to EBF among mothers in the Bangladesh context.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes the methodology used to examine the factors that may influence the intention to EBF of mothers. It consists of a description of the research design, population and setting, sample and sampling, instrumentation, ethical considerations, data collection, and data analysis.

Research Design

This descriptive study was focused on the factors expected to influence mothers' intention to EBF. The data was collected from December 2009 to February 2010.

Population and Setting

Population

The population of this study was postpartum mothers.

Setting

The study was conducted at the No 17 Labor Ward of the Dhaka Medical College Hospital (DMCH). This is the biggest hospital in Bangladesh. This hospital is equipped with 1,700 beds. There are 28 departments and 72 wards/units including both inpatient and outpatient departments. The Labor Ward consists of four sections and 62 beds (the observation area had=8 beds, postoperative caesarian section had=8 beds, postnatal section had=30 beds, and antenatal section had=16 beds). Approximately

10-15 postpartum mothers are admitted to the postnatal section per day. There are many tertiary and secondary hospitals in Dhaka. However, only this hospital was selected for the research setting because it is located in central Dhaka and is considered as the top referral and specialized hospital of the country. A large number of mothers were coming from different places to receive antenatal and postnatal care. Therefore, the subjects drawn from this setting were considered to be an appropriate representation of all mothers in Bangladesh.

Sample and Sampling

Sample

The sample of this study was the postpartum mothers admitted to the Labor Ward of DMCH, Dhaka, Bangladesh. The sample size in this study was estimated by using Thorndike's formula (Thorndike, 1978):

$n \geq (10k) + 50$

Where n is sample size, k is the number of independent variables (two variables) that gives the calculation of the sample size of at least 70 participants. However, the final sample size for data analysis in this study was 65 because five subjects were excluded as they provided extreme values that contributing to non-normality of the data. The characteristics of these five outliers were that had low levels of education (primary level =4, illiterate =1) and inadequate income (not enough -=4, <6000 Taka/month). Most of them were multipara (n=3) and had previous breastfeeding experience (n=3). Based on Nunnally and Bernstein (1994), the sample size should be 30 cases per independent variable when performing regression analysis.

Sampling Method

Purposive sampling method was used to recruit the eligible subjects in this study. The inclusion criteria for the postpartum mothers were that they should undergo normal labor, did not have flat or inverted nipples, had no history of AIDS or HIVinfection, and had no skin lesions that were communicable to infants. The inclusion criteria for the infants were that they were healthy full term infants and did not have cleft lip or cleft palate.

Instrumentation

Data were collected by using four questionnaires (see Appendix A): 1) The Demographic Data Questionnaire, 2) the Breastfeeding Attitude Questionnaire, 3) the Subjective Norm Questionnaire, and 4) the Intention to EBF Scale.

Demographic Data Questionnaire

The Demographic Data Questionnaire was designed by the researcher based on the literature review. It was divided into two parts. Part one consisted of mothers' age, educational level, occupation, religion, family income, Illness complications or conditions during this pregnancy, parity, and previous breastfeeding experience. Part two consisted of infants' gender, gestational age, date of birth, and birth weight.

Breastfeeding Attitude Questionnaire

Breastfeeding attitude was measured by The Breastfeeding Attitude Questionnaire developed by the researcher based on the TRA (Ajzen, 1988) and the literature review. It consisted of two subscales: Breastfeeding beliefs (23 items) and outcome evaluation of breastfeeding beliefs (23 items). Seven (7) items were positive statements and sixteen (16) items were negative statements regarding EBF beliefs. A

5-point Likert scale was used for all items ranging from 5=strongly agree to 1=strongly disagree. After reversing the negatively scored items the breastfeeding attitude score was then summed up.

An estimate of the breastfeeding attitude was obtained by multiplying belief strength and outcome evaluation of breastfeeding beliefs, and summing the resulting products (Ajzen, 1988). For example, the breastfeeding attitude score = summation of breastfeeding beliefs score (b_i) multiplied by the outcome evaluation of the breastfeeding beliefs score (e_i)=$(\sum_{n} b_i e_i)$, where n is the number of breastfeeding beliefs. The lowest total score of breastfeeding attitude is 529 and the highest total score of breastfeeding attitude is 13,225 and the mean of the total scores of breastfeeding attitude is 6,877. The higher score indicates the greater favorable attitude regarding breastfeeding of mothers.

Subjective Norm Questionnaire

Subjective norm regarding breastfeeding was measured by the Subjective Norm Questionnaire developed by the researcher based on the TRA (Ajzen, 1988) and the literature review. It consisted of two subscales: Normative beliefs concerning referents or the mother's perception about the influence from significant others to perform or avoid breastfeeding (10 items) and the mother's motivation to comply with these referents (10 items). A 5-point Likert scale was used for all items ranging from 5=strongly agree to 1=strongly disagree.

An estimate of the subjective norm was obtained by multiplying the normative beliefs score and motivation to comply score, and summing the resulting products (Ajzen, 1988). For example, the subjective norm score=summation of normative

beliefs score (nb_j) multiplied by motivation to comply score (mc_j)=($\sum_n nb_j\, mc_j$). The lowest total score of the subjective norm is 100 and the highest total score of subjective norm is 2,500. The mean of the total score of subjective norm is 1,300. The higher score indicates the greater perception of mothers about the influences of significant others to perform and motivation to comply about breastfeeding.

Intention to EBF Scale

Intention to EBF of mothers was measured by the Intention to EBF Scale developed by the researcher based on the TRA (Ajzen, 1988) and the literature review. It is rated on a 0 to 10 numeric rating scale containing endpoints of "I should not exclusively breastfeed my baby for at least six months postpartum" (0) and "I should exclusively breastfeed my baby for at least six months postpartum" (10). The midpoint (5) of the scale represent unsure of EBF plans. A higher score indicates that mothers have strongly intention to EBF their infants.

Translation of the Instruments

The original instruments were developed in the English language. In this study, the English version instruments were translated into the Bengali language. The method of translation was the back translation technique (Brislin, 1970). It is a translation process which ensures accuracy and the culturally equivalence of the instruments when translated to another language (Brislin). Three bilingual translators who were fluent in both English and Bengali translated the instruments (e.g., they were two medical physicians and one English editor). The process of back translation was conducted as follows.

1. The first bilingual translator translated the English version of instruments into the Bengali language.

2. The second bilingual translator back translated the instruments from the Bengali versions into the English language. This translator was unfamiliar with the original English version.

3. The third bilingual translator clarified and identified the differences in all items of two English versions.

After completing the back translation process, the researcher reviewed and compared both English versions. The researcher analyzed each item in details and revised based on the two translations. Then, the researcher modified the words of the instruments as needed in order to establish the same meaning within acceptable limits.

Validity and Reliability of the Instruments

Validity of the Instruments. The content validity of the instruments (The Demographic Data Questionnaire, the Breastfeeding Attitude Questionnaire, the Subjective Norm Questionnaire, and the Intention to EBF Scale) in the original English version were validated by three experts: These were two experts in pediatric nursing areas from the Faculty of Nursing, Prince of Songkla University, Songkhla, Thailand and one Pediatrician and Research Coordinator, Centre for Women and Child Health, Dhaka, Bangladesh. The researcher reviewed and revised all instruments using the experts' suggestions.

Reliability of the Instruments. The researcher conducted a pilot study, using the Bengali version of the instruments with 20 postpartum mothers who had the same inclusion criteria as the subjects of this study. The purpose of the pilot study was to assess the readability and reliability of all the instruments (the Breastfeeding Attitude Questionnaire, the Subjective Norm Questionnaire, and the Intention to EBF Scale). The internal consistency and reliability of the Breastfeeding Attitude Questionnaire

and Subjective Norm Questionnaire were tested using Cronbach's alpha coefficient, with an acceptable level of at least .70 (Polit & Beck, 2008). In this study, the Cronbach's alpha coefficients were .94 and .96, respectively. The reliability of the Intention to EBF Scale was done by the test-retest technique to determine its stability over time. The test-retest should be done at least one week apart (Polit & Beck). In this study it was tested 24 hours apart. An acceptable level of correlation coefficient is at least .70 (Polit & Beck). In this study, correlation coefficient reliability of the Intention to EBF Scale was .85.

Ethical Consideration

This study was approved by the Institutional of Review Board, Faculty of Nursing, Prince of Songkla University, Thailand. With this approval and a letter of permission from the Dean of the Faculty of Nursing, Prince of Songkla University, the researcher met the Director of the DMCH, Dhaka, Bangladesh. This was done in order to ask permission for collecting the data. This study provided no physical risks to participants. All postpartum mothers received sufficient information about the purpose of the study, the methods, and the instruments used for collecting data, and how their rights were protected.

Before issuing the informed consent form (Appendix B), the researcher explained the process of data collection to the participants and assured them that the information they gave was private and confidential. The confidentiality of subject's responses was assured throughout the study by using sample coding and the assurance that the data would be used for research purposes only. However, the participants

were assured that they had the right to refuse to participate in the study at any time with no effects on the care or treatment receiving during postnatal care.

Data Collection

Preparation Phase

Approval of the research proposal was given by the Institutional of Review Board, Faculty of Nursing, Prince of Songkla University, Thailand. The researcher took this written permission from the Dean of Faculty of Nursing, Prince of Songkla University and met the Director of the DMCH, Dhaka, Bangladesh. This was done to ask a permission to collect the data.

Data Collection Phase

1. After getting permission from the director of DMCH, Dhaka, the researcher met with the head nurse of the Labor Ward. She explained the purpose of the study and the data collection procedure.

2. Before collecting the data, the researcher approached the mothers who met the inclusion criteria, and introduced herself. She briefly explained the purpose of the study, the procedure for collecting data, and their rights about participating in the study.

3. The researcher asked mothers to sign an informed consent form that stated they had the right to refuse to participate in the study at any time.

4. The researcher gave the questionnaires to the mothers who decided to participate in this study. The researcher read the questions to the mothers 'word by word' and asked them to provide the answers in accord with the questions being asked.

5. The researcher checked that the questionnaires had been completed.

Data Analysis

Data Analysis

Both descriptive and inferential statistics were used for analyzing the data. The descriptive statistics including frequencies, percentages, mean, median, standard deviation, and the range of the total scale were used for analyzing the demographic data. Mean, median, standard deviation, and minimum and maximum scores were used to analyze the breastfeeding attitude, subjective norm, and intention to EBF of mothers. Relationships among these three variables were analyzed by Pearson's product moment correlation. A hierarchical multiple regression analysis was used to analyze whether breastfeeding attitude and subjective norm could predict the intention to EBF of mothers. The order of entry of predictors was based on theoretical consideration. The first variable was breastfeeding attitude followed by subjective norm. Using hierarchical multiple regression, the independent variables were entered into the model in a series of steps, and the order of entry was controlled by the researcher. Hierarchical multiple regression analysis can examine the effect of independent variables after the effects of other variables have been controlled (Polit, 1996).

Testing the Assumptions of Multiple Regression

The underlying assumptions for multiple regression were tested. The normality of the independent variables breastfeeding attitude and subjective norm was determined by using graphical analysis and statistical test based on the critical value for skewness and kurtosis (Garson, 2010). The skewness and kurtosis of breastfeeding

attitude and subjective norm were 1.08 and 0.17, and 2.78 and 2.69, respectively. Residual normality was tested by using a normal probability (P-P) plot which indicates the normal distribution of the dependent variable. Homoscedasticity and liniearity assumption were tested by visual examination of a plot of the standardized residuals by the regression standardized predicted value. Next, no multicollinearity of the predictors tested by a correlation matrix of the independent variables was found. The values of Variance Inflation Factors (VIF) and Tolerance test were acceptable. The VIF coefficient was 1.02 (VIF=<10, Hair et al. 1996) and the Tolerance was .98 (should not near to zero, Polit & Beck, 2008). Therefore, the assumptions underlying of multiple regression were met (Appendix C).

CHAPTER 4

RESULTS AND DISCUSSION

The aim of this study was to examine the extent to which breastfeeding attitude and subjective norm influence the intention to EBF of mothers admitted in the Labor Ward of Dhaka Medical College Hospital for normal vaginal delivery. The original sample size was 70. However, five outliers were deleted resulting in only 65 mothers being used as sources of the data analyze in this study. The findings of this study are presented in three parts as Tables with brief explanations as follows:

Part I. Demographic characteristics of mothers and their infants

Part II. Breastfeeding attitude, subjective norm, and intention to EBF

Part III. Relationships and influencing effects of breastfeeding attitude and subjective norm on intention to EBF

Results

Part I. Demographic characteristics of mothers and their infants

Almost half of the mothers had a secondary school education (47.8%). Most mothers were housewives (78.5%). Almost all of them were Muslim (98.5%). Nearly all had no illness complications or conditions during this pregnancy (98.5%). Most of them had an inadequate income (60%). Most of them were primipara (56.9%) and had no previous breastfeeding experience (60%). With respect to the infants, most of them were male (64.6%) (Table 1).

Table 1

Frequency and Percentage of Mothers and Infants Demographic Data (N= 65)

Demographic characteristics	Frequency	Percentage
Mothers:		
Education level		
Illiterate	11	16.9
Primary School	21	32.3
Secondary School	31	47.8
Higher Secondary	1	1.5
Bachelor degree	1	1.5
Occupation		
Private service	2	3.1
Housewife	51	78.4
Worker	12	18.5
Religion		
Islam	64	98.5
Hindus	1	1.5
Family income (Taka/month)		
Enough	26	40.0
Not enough	39	60.0
Illness complications or condition during this pregnancy		
No complication	64	98.5
Infections	1	1.5
Parity		
Primipara	37	56.9
Multipara	28	43.1
Previous breastfeeding experience		
Yes	26	40.0
No	39	60.0

Table 1 (Continued)

Demographic characteristics	Frequency	Percentage
Infants:		
Gender		
Male	42	64.6
Female	23	35.4

Because of non-normal distribution of the data, the following variables are presented in terms of median. The median of maternal age was 22 years (min=18, max=35) and family income was 6,000 Taka/month (min=2,000, max=20,000) (US $ 1=70 Taka). The median of infants' gestational age was 38 weeks (min=38, max=41), and birth weight was 3,000 gram (min=2,500, max=4,500) (Table 2).

Table 2

Descriptive Statistics of Mothers and Infants Demographic Data (N=65)

Items	*M*	*SD*	Median	Min	Max	Skewness	Kurtosis
Maternal age (years)	22.62	4.19	22.00	18	35	3.656	1.317
Family income (Taka/month)	6,823.08	3847.10	6,000.00	2,000	20,000	5.363	5.092
Gestational age (weeks)	38.92	1.020	38.00	38	41	0.838	3.160
Birth weight (gram)	2,940	470.30	3,000.00	2,500	4,500	3.644	1.450

Part II. Breastfeeding attitude, subjective norm, and intention to EBF

Table 3 shows the descriptive statistics of each independent variable and a dependent variable. The mean of the breastfeeding attitude was 7,572.62 (*SD*= 2,064.86). The highest and lowest scores were 12,999.00, and 3,712.00, respectively. The mean of the breastfeeding belief subscale was 84.60 (*SD*=11.36) and the highest and lowest scores of this subscale were 114.00 and 62.00, respectively. The mean of

the outcome evaluation subscale was 87.95 (*SD*=13.12) and the highest and lowest scores of this subscale were 114.00 and 58.00, respectively. The mean of the subjective norm was 1,745.33 (*SD*=104.75) and the highest and lowest scores were 2,025.00 and 1,482.00, respectively. The mean of the normative belief subscale was 41.69 (*SD*=1.47) and the highest and lowest scores were 45.00 and 37.00, respectively. The median of motivation to comply subscale was 41.00 (min=38.00, max=48.00). The mean of the intention to EBF was 4.86 (*SD*=4.40).

Table 3

Descriptive Statistics of the Breastfeeding Attitude, Subjective Norm, and Intention to EBF of Mothers (N=65)

Variables	*M*	*SD*	Median	Min	Max	Skewness	Kurtosis
Breastfeeding attitude	7,572.62	2,064.86	7,560.00	3,712.00	12,996.00	1.08	0.71
Breastfeeding belief	84.60	11.36	83.00	62.00	114.00	1.00	0.51
Outcome evaluation	87.95	13.12	89.00	58.00	114.00	0.49	1.25
Subjective norm	1,745.33	104.75	1,722.00	1,482.00	2,025.00	2.78	2.69
Normative belief	41.69	1.47	42.00	37.00	45.00	0.60	2.20
Motivation to comply	41.85	1.63	41.00	38.00	48.00	4.16	4.41
Intention to EBF	4.86	4.40	5.00	0	10	0.09	2.99

Part III. Relationships and influencing effects of breastfeeding attitude and subjective norm on intention to EBF

The results showed statistically significant moderate and positive relationships between breastfeeding attitude and intention to EBF of mother (r=.50, p=.000). There was no relationship between subjective norm and intention to EBF of mothers (r=-.08, p=.26). There was no relationship between breastfeeding attitude and subjective norm (r=.13, p=.15) were found (Table 4).

Table 4

Pearson's Product Moment Correlation between Breastfeeding Attitude, Subjective Norm, and Intention to EBF of Mothers (N= 65)

Variables	Breastfeeding attitude	Subjective norm	Intention to EBF
Breastfeeding attitude	1.00		
Subjective norm	.13	1.00	
Intention to EBF	.50**	-.08	1.00

**p <.001

After testing the assumptions of regression (Appendix C), it was found that there were five outliers. After deleting these outliers (N=65), all assumptions were acceptable. Then, intention to EBF of mothers was regressed relating to breastfeeding attitude and subjective norm. Two predictor variables were entered into the regression equation. The order and content of the steps were based upon the theoretical framework of the TRA. In the first regression analysis, breastfeeding attitude was regressed into the equation. In the second regression analysis, breastfeeding attitude and subjective norm were together regressed into the equation. For the first step of the regression or model 1 (Table 5), the result indicated that breastfeeding attitude explained 25% of the variance in the intention to EBF of the mothers {R^2=.25, F (1, 63)=21.17, p=.000}. The regression coefficient of the breastfeeding attitude was .50 (t=4.60, p=.000). In the second step or model 2 (Table 5), it was found that breastfeeding attitude and subjective norm together explained 27% of the variance in the intention to EBF of the mothers. Adding subjective norm into the equation added a non-significant 2% to the explained variance in the equation {R^2 change=.02, F change (1, 62)=1.90, p=.17}. The regression coefficient of breastfeeding attitude in

the second model was .52 (t=4.78, p=.000) whereas that of subjective norm was -.15 (t=-1.38, p=.173) (Figure 2).

Table 5

A hierarchical Multiple Regression of Breastfeeding Attitude and Subjective Norm with Intention to EBF of Mothers (N= 65)

Model	Independent Variables	*B*	*SE B*	*β*	*t*	*p*
1	Breastfeeding attitude	.001	.000	.502	4.602	.000
2	Breastfeeding attitude	.001	.000	.522	4.777	.000
	Subjective norm	-.006	.005	-.150	-1.377	.173

R^2=.252 for the model 1, R^2 change=.022 for the model 2, total R^2=.274

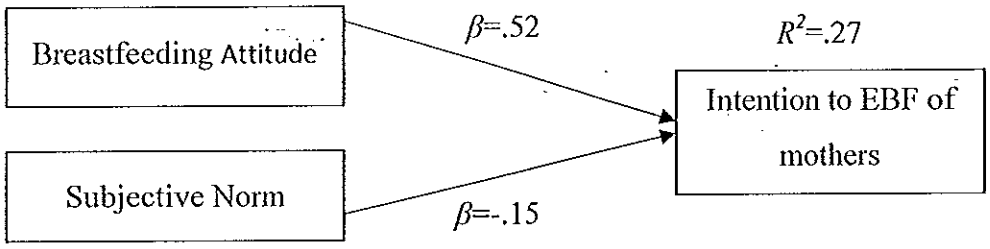

Figure 2

The Regression Coefficients and Multiple Correlation of Breastfeeding Attitude and Subjective Norm on Intention to EBF of Mothers

Discussion

The present study examined the extent to which breastfeeding attitude and subjective norm influence the intention to EBF of mothers in Bangladesh. The findings showed whether the findings support the theory and previous studies or not. The present findings supported the utility of the Theory of Reasoned Action (TRA) in its partial implications for the prediction and understanding of the intention to EBF of

mothers. According to the TRA, attitude and subjective norm are the major factors determining a person's behavioral intention. In this study the results partially supported the TRA propositions. Breastfeeding attitude predicted the intention to EBF of mothers whereas subjective norm did not.

It was found that breastfeeding attitude and subjective norm together explained 27% of the variance in the intention to EBF. The magnitude of the breastfeeding attitude coefficient was moderate (β=.52, t=4.78, p=.000) and the subjective norm coefficient was low (β=-.15, t=-1.38, p=.173). This result is consistent with the theory which stated that attitude is the variable influencing behavioral intention. The results are also consistent with those of other studies among different populations (Kloeblein-Tarver et al., 2002; Ratananugool, 2001; Wambach, 1997). Ratananugool also found that mothers' attitudes significantly contributed to the intention to breastfeed. Wambach's (1997) study found attitude toward breastfeeding was more important in predicting breastfeeding intentions and the mean score of the breastfeeding attitudes was 3.8 (SD=0.40), and the possible range was 1-5. In this study, the mean score of breastfeeding attitude was slightly higher than that of the actual mean score (7,572 vs 6,877).

In contrast, this finding is inconsistent with Hill et al.'s study (2008). They found that breastfeeding attitude did not predict intention to breastfeeding. The possible reason is that Hill et al.'s study was conducted in a developed country (The United States of America). Most mothers had higher education, thus breastfeeding attitude may not greatly influence their intention to breastfeeding. In contrast, the present study was conducted in Bangladesh which is a developing country. Most mothers had lower education and strongly agreed with the positive attitude items (6 in

7 items or 85.11%) and disagreed with the negative attitude items (9 in 16 items or 56.25%). For outcome of the evaluation, most mothers agreed/strongly agreed with the positive outcomes (15 in 23 items or 65.21%).

Put simply, an attitude towards any concept is a person's general feeling of being favorable or unfavorable towards that concept (Ajzen & Fishbein, 1980). Based on the TRA, attitude towards behavior is a person's judgment that performing the behavior is good or bad, that she/he is in favor or against performing the behavior (Ajzen & Fishbein). It means that a person who believes that performing a given behavior will lead to mostly positive outcome will hold a favorable attitude toward performing the behavior. However, a person who believes that the behavior will lead to mostly negative outcomes will hold an unfavorable attitude to it. In this study, most of the mothers held a favorable attitude toward performing a behavior. Thus, the breastfeeding attitude of mothers in this study predicted their intention to EBF.

In contrast, subjective norm did not predict intention to EBF of mothers (β=-.15, t=-1.37, p=.173). This finding is consistent with two studies (Ratananugool, 2001; Wambach, 1997) which found that subjective norm did not predict intention to breastfeeding. Based on the TRA, subjective norms are also a function of beliefs but of a different kind, namely the person's beliefs that specific referents think that she should or should not perform a behavior. This gives her motivation to comply with those normative beliefs (Ajzen, 1988). In this study, most mothers perceived that all their referents thought that they should definitely breastfeed their infants (10% strongly agreed; 90% agreed). They were also motivated by their referents' thinking (10% strongly agreed; 90% agreed). The mean score of the subjective norm was higher than that of the overall actual mean score (1,745 vs 1,300). Most mothers

agreed with their referents' suggestions and had the motivation to comply with their referents' thoughts. However, the subjective norm could not predict the intention to EBF in this study. This means that although most mothers in this study perceived that all their referents suggested that they should definitely breastfeed their infants and they were also motivated by their referents' thinking, these did not create an impact on their intention.

This finding is inconsistent with other studies which were conducted in different countries. For example, Hill et al.'s (2008) study conducted in the United States of America found that subjective norm was a strong predictor (R^2=.40, β=.57, p<.05) of intention to breastfeeding. In their study, women were most significantly influenced by the perceived opinion regarding breastfeeding of referent others, including husbands, friends, and parents. Humphreys et al. (1998) found that the breastfeeding intention was significantly correlated with receiving positive breastfeeding information from the infant's father. This may be due to characteristics of the sample. In Hill et al.'s study the sample was only pregnant women. Humphrey et al.'s study the sample was made up of both primipara mothers and pregnant women. In the present study, the sample was both primipara and multipara mothers. Therefore, subjective norm did not predict intention to EBF of mothers. Another possible reason for differences in the findings was probably dues to religious beliefs of the sample in the present study. The intention to EBF is a decision making process used by women whether to breastfeed or avoid this practice (Hill et al.). In Bangladesh, most of the people (83.3%) are Muslim (Government of the People's Republic of Bangladesh, Ministry of Health and Family Welfare, 2007). In the present study, almost all mothers (98.5%) were Muslim. According to Al-Quran

(Surah Al-Bakarah: Ayat 233), the mothers should breastfeed their children whole 2 years after birth (Shakir, n.d). According to Islamic law, women can empower and shape their lives (Azim, 2007). Based on the breastfeeding aspect, this duty is considered to be a woman business. Thus it can be assumed that these mothers themselves may have high confidence in making their own decisions whether they want to perform or ignore EBF for at least six months postpartum.

In addition, since it was found that breastfeeding attitude and subjective norm together explained only 27% of the variance in the intention to EBF in this study, the rest of the 73% of the variance in the intention to EBF can probably be explained by other related factors. Based on the literature review, it was found that previous breastfeeding experience (Manstead et al., 1983), family income (Ergeneko-Ozelci et al., 2006; Wells et al. 2002) and parity (Manstead et al.; Kloeblen-Tarver et al., 2001) influenced intention to breastfeeding. Testing was undertaken to assess the significant difference between groups of each of the underlying factors to see whether these factors have an impact on the intention to EBF of mothers. The results (Table 8) showed that there was no significant different in the mean scores of intention to EBF between mothers who had previous breastfeeding experience and mothers who did not (t=1.66, p=.102). No significant difference in the mean scores of intention to EBF was found between mothers who had adequate family income and those who had inadequate family income (t=1.19, p=.239). There was also no significant different in the mean scores of the intention to EBF of multipara mothers and primipara mothers (t=1.091, p=.280). Thus, the rest of the variance in the intention to EBF probably due to other related factors which were beyond the scope of this study.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

Conclusion

This descriptive study was designed to examine the extent to which breastfeeding attitude and subjective norm influence mothers' intention to EBF. This study was conducted at a Labor Ward in Dhaka Medical College Hospital from December 2009 to February 2010. Sixty five mothers were used in the statistical analysis.

Mothers were asked to respond to the instruments that included the Demographic Data Questionnaire, the Breastfeeding Attitude Questionnaire, the Subjective Norm Questionnaire, and the Intention to EBF Scale. The instruments were validated by three experts: two experts from Thailand and one expert from Bangladesh. All instruments were translated into Bengali language through the back translation procedure.

A pilot study was done with 20 postpartum mothers. The Cronbach's alpha reliabilities of the Breastfeeding Attitude Questionnaire and the Subjective Norm Questionnaire were .94 and .96, respectively. The test-retest reliability of the Intention to EBF Scale was .85. Descriptive statistics were used to analyze the demographic data, breastfeeding attitude, subjective norm, and intention to EBF. Pearson's product moment correlation was used to analyze the relationships among variables. A hierarchical multiple regression analysis was used to analyze whether breastfeeding attitude and subjective norm can predict the intention to EBF of mothers.

The results showed that almost half of the mothers had secondary school education (47.8%). Most mothers were housewives (78.5%). Almost all of them (98.5%) were Muslim and had no illness complications or condition during this pregnancy (98.5%). Most of them had an inadequate income (60%) and no previous breastfeeding experience (60%). Most of the infants were male (64.6%). The median of the maternal age was 22 years (min=18, max=35) and of the family income was 6,000 Taka/month (min=2,000, max=20,000) (US $ 1=70 Taka). The median of the infants gestational age was 38 weeks (min=38, max=41) and the median of birth weight was 3,000 grams (min=2,500, max=4,500).

The mean scores of breastfeeding attitude (M=7,572) and subjective norm (M=1,745) were not much higher than those of the actual mean scores (M=6,877, M=1,300, respectively). The mean score of the intention to EBF (M= 4.86) was lower than that of the actual mean score (M=5).

In terms of relationships, there was a statistically significant moderate and positive relationship between breastfeeding attitude and intention to EBF of mothers. No relationship was found between subjective norm and intention to EBF of mothers. In the regression analysis, the first model indicated that breastfeeding attitude explained 25% of the variance in intention to EBF of the mothers {R^2=.25, F (1, 63) =21.17, p=.000}. The magnitude of the breastfeeding attitude coefficient was .50 (t=4.60, p=.000). In the second model, it was found that breastfeeding attitude and subjective norm together explained 27% of the variance in the intention to EBF of the mothers. The magnitude of breastfeeding attitude coefficient in the second step was .52 (t=4.78, p=.000) whereas the magnitude of the subjective norm coefficient was -.15 (t=-1.38, p=.173).

Limitations

A measurement error was likely to have influenced the results. The intention to EBF scale is a single item which was measured on a numeric rating scale. In this study, some mothers found understanding the level of the numeric rating scale difficult. It was difficult for them to identify how much they had intended to EBF although the researcher tried to explain the concept. It may also be related to the response format whereby the value in the middle indicates "unsure." The word "unsure" may impede continuity in the thoughts of a number of the mothers. In terms of generalizability, the subjects were limited to those mothers admitted to a national hospital in Bangladesh. Therefore, the results may not be generalized to district or rural hospital population.

Implications of the Results

This study demonstrated the implication of the TRA in examining the extent to which the breastfeeding attitude and subjective norm influence the intention to EBF among Bangladeshi postpartum mothers. Thus nurses can provide information regarding breastfeeding attitude to mothers because breastfeeding attitude had an impact on mothers' intention to EBF. Finally, it should help to increase the rate and duration of EBF in Bangladesh thus leading to decrease infection and malnutrition of infants and it should also help decrease the incidence of infants' and mothers' mortality and morbidity rates.

Recommendations for Future Research

Based on the results and limitations of the present study, the findings of the study can be used in further experimental study to increase the rate of EBF. For measurement of outcome variable, it is needed to use an alternative scale instead of a single item of a 10 point numeric rating scale. For generalizability of the study, a replication study should be conducted in diverse settings and population.

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Appendices

Appendix A

Instruments

Code____

Date_____

Direction: Four questionnaires will be answered by the mothers in this study. These consist of:

1. The Demographic Data Questionnaire
2. The Breastfeeding Attitude Questionnaire
3. The Subjective Norm Questionnaire
4. The Intention to EBF Scale

The Demographic Data Questionnaire

Code _____

Date _____

Direction: This questionnaire consists of 12 items regarding a mother's demographic data and her infant's information. Please listen the questions and give answers as accurately as possible. This questionnaire will be answered by the mothers. The researcher will complete the questions by asking answers from the mothers.

Part 1. Mother's demographic data

1.1 Age _____ years

1.2 Education level

[ ] 1. Illiterate [ ] 2. Primary school

[ ] 3. Secondary school [ ] 4. Higher Secondary

[ ] 5. Bachelor degree [ ] 6. Master degree

[ ] 7. Others (please specify _____)

1.3 Occupation

[ ] 1. Government service [ ] 2. Private service

[ ] 3. Housewife [ ] 4. Worker

[ ] 5. Others (please specify_____)

1.4 Religion

[ ] 1. Islam [ ] 2. Hindus

[ ] 3. Christian [ ] 4. Buddhism

1.5 Family income (Taka/month)

_____ (Please specify)

[ ] 1. Enough [ ] 2. Not enough

1.6 Illness complications or condition during this pregnancy

[ ] 1. No complication [ ] 2. Infections

[ ] 3. Cardiac diseases [ ] 4. Diabetes

[ ] 5. Pre-eclampcia [ ] 6. Bleeding disorder

[ ] 7. Others ---------- Please specify)

1.7 Parity

[ ] 1. Primipara [ ] 2. Multipara

1.8 Previous experience about breastfeeding

[ ] 1. Yes [ ] 2. No

Part 2. Infants' demographic data

2.1 Gender

[ ] 1. Male [ ] 2. Female

2.2 Gestational age_____ weeks

2.3 Date of birth _____

2.4 Birth weight _____ gm

The Breastfeeding Attitude Questionnaire

Code _____

Date _____

Direction: This questionnaire consists of two subscales: breastfeeding beliefs (23 items) and outcome evaluation of breastfeeding beliefs (23 items). As accurately as possible, please give your opinion in each statement. Please tell or indicate this by selecting one of the five numbers next to each statement that best describes your opinion. There is no right or wrong answers. The rating scales are as follows:

Strongly disagree (1) = I do not really agree with the statement

Disagree (2) = I do not agree with the statements

Uncertain (3) = I am not sure about the statement

Agree (4) = I agree with the statement

Strongly agree (5) = I really agree with the statement

For example:

Items	Strongly disagree (1)	Disagree (2)	Uncertain (3)	Agree (4)	Strongly agree (5)
1. You believe that breastfeeding is painful for you	√				

Note: I do not really believe that breastfeeding is painful for me

Items	Strongly Disagree (1)	Disagree (2)	Uncertain (3)	Agree (4)	Strongly Agree (5)
Breastfeeding beliefs: I believe that.....					
1. Breastfeeding protects the baby from infectious diseases					
2. Breastfeeding is embarrassing for you*					
3. Breastfeeding limits your social life*					
4. Before 6 months, you should give misripani/honey to keep your baby's calm and for good sleep*					
5. Breastfeeding establishes close bond between you and your baby					
6. Before six month, you should give water to prevent your baby from constipation*					
7. Breastfeeding is an easy feeding Method					
8. After postpartum, it needs 3 days for coming breast milk*					
9. Colostrum causes your baby's diarrhea*					
10. Breastfeeding for your baby is very convenient to you					
11. Before six months, sometimes you should give mustard oil to clean your baby's bowel*					

Items	Strongly Disagree (1)	Disagree (2)	Uncertain (3)	Agree (4)	Strongly Agree (5)
12. Breastfeeding provides best nourishment for your baby					
13. Breastfeeding decreases your beauty and figure shape*					
14. Before six months, your baby needs water to meet her/his thirst*					
15. Breastfeeding prevents you from breast and ovarian cancer					
16. Immediate after birth, your baby should receive honey or sweetened water*					
17. Evil air (Alga batash) can cause your breast milk contamination leading your baby's diarrhea/ stomach disturbance*					
18. Evil eye (Najar laga) can cause your baby's diarrhea/ stomach disturbance*					
19. Colostrum provides your baby's Immunity					
20. After working in the sun, breastfeeding is harmful to your baby*					
21. Before six months, your baby needs extra food due to watery breast milk dose not meet your baby's hungry*					

Items	Strongly Disagree (1)	Disagree (2)	Uncertain (3)	Agree (4)	Strongly Agree (5)
22. During fasting, your baby needs extra food due to decreasing your breastmilk*					
23. Before six months, honey can satisfy your baby's hungry*					
Outcome evaluation:					
24. Breastfeeding that protects your baby against infection is very important to you					
25. Breastfeeding dose not make feel embarrassed for you it is very important to you					
26. Breastfeeding allows you to go out socially is very important to you					
27. Before 6 months, giving misripani/honey does not keep your baby quite and good sleep it is very important to you					
28. Breastfeeding that establishes a close bond between you and your baby is very important to you					
29. Before six months, you should not give water your baby it is very important to you					
30. Breastfeeding that is not expensive is very important to you					

Items	Strongly Disagree (1)	Disagree (2)	Uncertain (3)	Agree (4)	Strongly Agree (5)
31. It dose not need for waiting a 3 days after postpartum for coming of your breastmilk it is very important to you					
32. Colostrum that can not cause your baby's diarrhea is very important to you					
33. Breastfeeding that is a very convenient is very important to you					
34. Before six months, no need mustard oil to clean your baby's bowel it is very important to you					
35. Breastfeeding provides complete nourishment for your baby it is very important to you					
36. Breastfeeding that is good for your figure is very important to you					
37. Before six months, your baby does not need water to meet her/his thirst is very important to you					
38. Breastfeeding that prevents you from breast and ovarian cancer is very important to you					
39. Immediate after birth, your baby should not receive honey or sweetened water it is very important to you					

Items	Strongly Disagree (1)	Disagree (2)	Uncertain (3)	Agree (4)	Strongly Agree (5)
40. Evil air (Alga batash) that dose not cause your baby's diarrhea/ stomach disturbance is very important to you					
41. Evil eye (Najar laga) that does not cause your baby's diarrhea/stomach disturbance is very important to you					
42. Breastfeeding that provides your baby's immunity is very important to you					
43. It dose not harmful to provide your baby breastfeeding after working in the sun it is very important to you					
44. Before six months, your baby needs only breastmilk it is very important to you					
45. During fasting, your breastmilk dose not decrease it is very important to you					
46. Before six months, honey cannot satisfy your baby's hungry is very important to you					

Note: Scoring reversed. These asterisks will not be on the questionnaires given to the mother.

The Subjective Norm Questionnaire

Code _____

Date _____

Direction: This questionnaire consists of two subscales: Normative beliefs concerning referents or significant others preferences regarding breastfeeding (10 items) and mothers' motivation to comply with each statements (10 items). As accurately as possible, please give your opinion in each item. Please tell or indicate this by selecting one of the five numbers next to each statement that best describes your opinion. There is no right or wrong answers. The rating scales are as follows:

Strongly disagree (1) = You do not really agree at the statement

Disagree (2) = You do not agree at the statements

Uncertain (3) = You are not sure about the statement

Agree (4) = You agree at the statement

Strongly agree (5) = You really agree at the statement

For example:

Items	strongly disagree (1)	Disagree (2)	Uncertain (3)	Agree (4)	Strongly agree (5)
1.Your sister in law thinks that you should breastfeed to your baby				√	

Note: You agree that your sister-in-law thinks that you should definitely breastfeed your baby

Items	Strongly Disagree (1)	Disagree (2)	Uncertain (3)	Agree (4)	Strongly Agree (5)
Normative beliefs:					
1. Your husband thinks that you should definitely breastfeed your baby					
2. Your mother thinks that you should definitely breastfeed your baby					
3. Your closest friend thinks that you should definitely breastfeed your baby					
4. Your father-in-law thinks that you should definitely breastfeed your baby					
5. Your doctors think that you should definitely breastfeed your baby					
6. Your mother-in-law thinks that you should definitely breastfeed your baby					
7. Your other relatives think that you should definitely breastfeed your baby					
8. Your nurses think that you should definitely breastfeed your baby					

Items	Strongly Disagree (1)	Disagree (2)	Uncertain (3)	Agree (4)	Strongly Agree (5)
9. Your traditional birth attendant thinks think that you should definitely breastfeed your baby					
10.Your community leaders/ village elders think that you should definitely breastfeed your baby					
Motivation to comply:					
11. In general, you care very much what your husband thinks you should do					
12. In general, you care very much what your mother thinks you should do					
13. In general, you care very much what your closest friend thinks you should do					
14. In general, you care very much what your father-in-law thinks you should do					
15. In general, you care very much what your doctors think you should do					
16. In general, you care very much what your mother-in-law thinks that you should do					

Items	Strongly Disagree (1)	Disagree (2)	Uncertain (3)	Agree (4)	Strongly Agree (5)
17. In general, you care very much what your other relatives think you should do					
18. In general, you care very much what your nurses think you should do					
19. In general, you care very much what your traditional birth attendant thinks you should do					
20. In general, you care very much what your community leaders/ village elders think you should do					

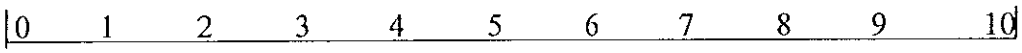
The Intention to EBF Scale

Code _____

Date _____

Direction: This scale consists of one item regarding intention to EBF of mothers. Please tell or make a mark (X) the degree of how much you intend to exclusive breastfeed your baby for at least six months post birth.

1. How do you intend to exclusive breastfeed your baby for at least six months post birth?



I should not definitely exclusive breastfeed my baby

Unsure

I should definitely exclusive breastfeed my baby

Appendix B

Informed Consent Form

Title: The Influence of Breastfeeding Attitude and Subjective Norm on Intention to Exclusive Breastfeeding of Mothers in Dhaka, Bangladesh

Researcher: Shanzida Khatun

Prince of Songkla University, Hat Yai, Songkhla Thailand

Tel. Songkhla, Thailand: 66-74- 0869602303; Dhaka, Bangladesh: 01729589393

You are invited to participate in the study entitled "The Influence of Breastfeeding Attitude and Subjective Norm on Intention to Exclusive Breastfeeding of Mothers in Dhaka, Bangladesh." The study is conducted by Shanzida Khatun, a Master student at the Faculty of Nursing, Prince of Songkla University, under supervision of Asst. Prof. Dr. Busakorn Punthmatharith, Faculty of Nursing, Prince of Songkla University. The purpose of this study is to examine the inextent to which the breastfeeding attitude and subjective norm influence on intention to exclusive breastfeeding of mothers. If you agree to take part in this study, I will interview or explain you to complete four questionnaires. It will take about one hour for asking 79 items. Your participation will provide valuable information to nurses and other health care providers on promoting EBF among breastfeeding mothers.

Your information will be kept confidential. The results of this study will be published as group data, and no one will be able to identify your personally in the report. You can withdraw from this study at any time. This study has no physical risk for you. You are not abandoned any of your legal rights by signing this consent form. Your signature below indicates that you agree to participate in this study. If you have any question about the study, you can directly contact me by phone number 01729589393 or by e-mail sanzidaadib@yahoo.com. You will receive a copy of this informed consent.

Thank you for your cooperation.....

_____

(Shanzida Khatun)

For Participants

I was informed about the details of the study and I agree to participate in this study.

Signature of Participants _____ Date ____

Signature of Researcher _____ Date ____

Appendix C

Testing the Assumptions of Multiple Regression

1. The first assumption of multiple regression is that the measurement levels of the dependent variable and independent variable should be at interval or in a ratio. In this study, the dependent variable (intention to EBF) and independent variables (breastfeeding attitude and subjective norm) were at interval level.

2. The second assumption is normality. Normality is the shape of the data distribution of each individual variable. There are different approaches for checking normality such as graphical analysis and statistical tests (Hair, Anderson, Tatham, & Black, 1998). First, graphical analysis for normality is a visual check of the histogram that compares the observed data values with a normal distribution. In this study, after deleting the five outliers, it was found that intention to EBF (Figure 3), breastfeeding attitude (Figure 4), and subjective norm (Figure 5) were normally distributed.

Intention to EBF

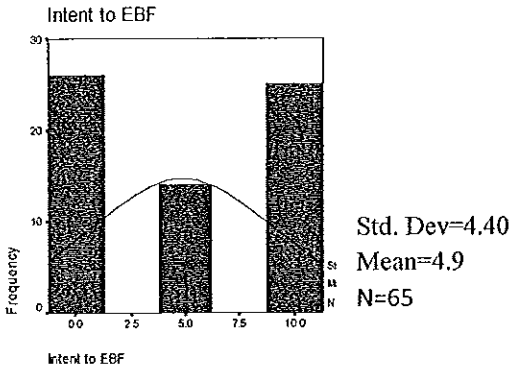


Figure 3

Histogram of Normal Distribution of Intention to EBF

Breastfeeding attitude

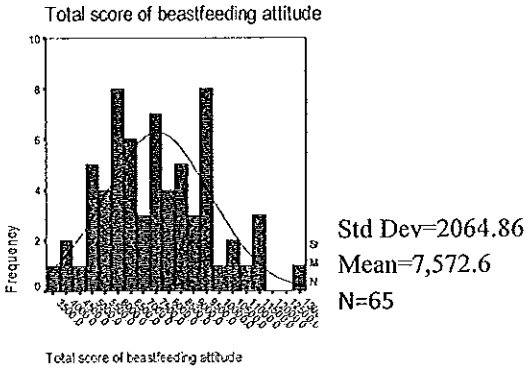


Figure 4

Histogram of Normal Distribution of Breastfeeding Attitude

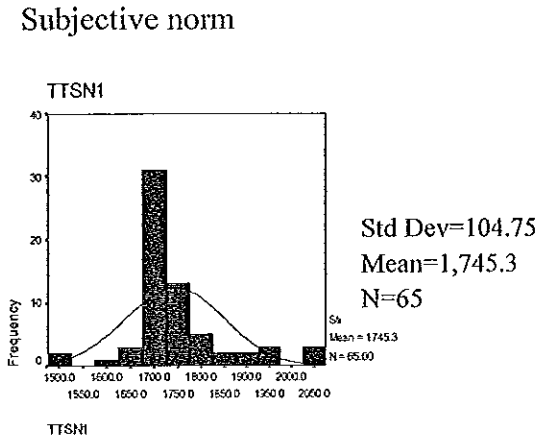


Figure 5

Histogram of Normal Distribution of Subjective Norm

Next, statistical analysis was done based on the critical value for skewness and kurtosis (+3 to -3) (Garson, 2010). In this study, it was found that the assumption was acceptable because the skewness and kurtosis for breastfeeding attitude were 1.08 and 0.71, respectively. Those of subjective norm were 2.78 and 2.69 as well as for intention to EBF were 0.09 and 2.99, respectively.

In addition, the residuals are normally distributed. In this study, the residuals were normally distributed (Figure 6).

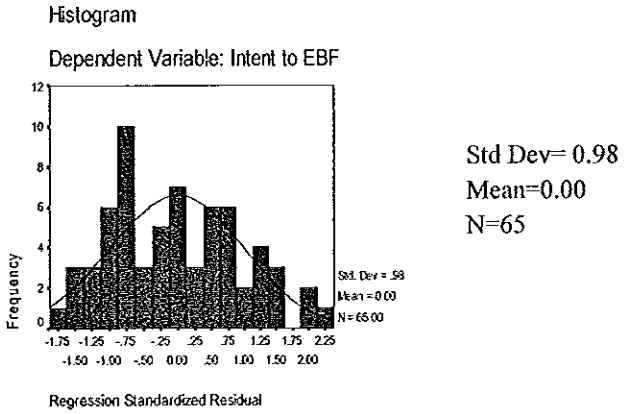


Figure 6

Histogram of Regression Standardized Residual and Intention to EBF

Another approach for checking residual normality is the normal probability (P-P) plot, which compares the cumulative distribution of actual data values with the cumulative distribution of a normal distribution. The normal distribution forms a straight diagonal line, and the plotted data values are compared with the diagonal (Hair et al., 1998). If distribution is normal, the line representing the actual data distribution closely follows the diagonal. In this study, it was found that the data distribution closely followed the diagonal line (Figure 7).

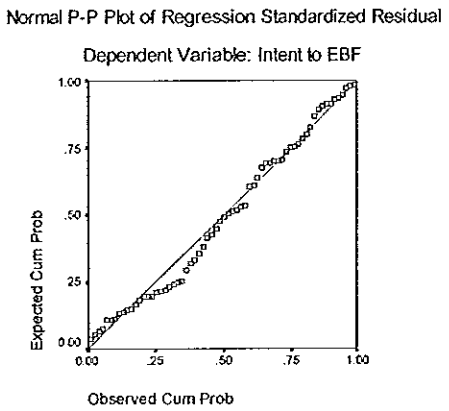


Figure 7

Normal P-P Plot of Regression Standardized Residual

3. The third assumption is homoscedasticity. This means that the variance of errors is the same across all levels of the independent variables. In this study, it was assumed that there was homoscedasticity because residuals were randomly scattered around the horizontal line providing a relatively even distribution (Figure 8).

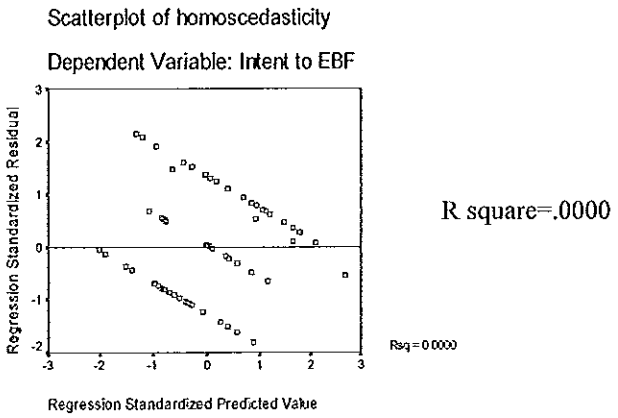


Figure 8

Scatterplot of Homoscedasticity

4. The forth assumption is autocorrelation. The residuals are not correlated with any independent variables. In this study, there was no autocorrelation because the Durbin-Watson was 1.81 (Normal=1.5-2.5) (Hair et al., 1998).

5. The fifth assumption is linearity of the relationship. The relationship between the dependent variable and each of the independent variables is linear. In this study, the linearity scatterplot between the studentized residual and intention to EBF was acceptable (Figure 9).

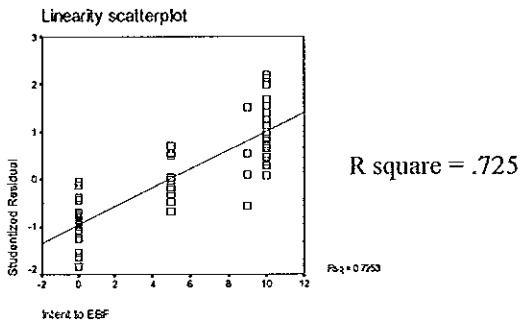


Figure 9

Scatterplot of Studentized Residual and Intention to EBF

6. The sixth assumption is that there is a significant relationship between each independent variable and dependent variable and no multicollinearity of independent

variables. In this study, breastfeeding attitude was positively correlated with intention to EBF (r=.50, p=.000) whereas there was no relationship between subjective norm and intention to EBF (r=-.081, p=.26). No multicollinearity was found because the relationship between breastfeeding attitude and subjective norm was not more than .85 (Polit, 1996). Furthermore, the Variance Inflation Factor (VIF) was less than 10 (Hair et al., 1998) (VIF=1.02) and Tolerance should not be near zero (Polit & Beck, 2008) (Tolerance=.98). The assumption for no multicollinearity was met.

Appendix D

Tables of the Frequency and Percentage of Each Independent Variable and Testing of the Other Related Factors on Intention to EBF

Table 6

Frequency and Percentage of Each Item of Breastfeeding Attitude (N= 65)

Items	Strongly disagree (1)		Disagree (2)		Uncertain (3)		Agree (4)		Strongly agree (5)	
	f	%	f	%	f	%	f	%	f	%
Breastfeeding belief:										
You believe that….										
1. Breastfeeding protects the baby from infectious diseases	1	1.5	0	0	12	18.5	15	23.1	37	56.9
2. Breastfeeding is embarrassing for you	1	1.5	4	6.2	0	0	3	4.6	57	87.7
3. Breastfeeding limits your social life	1	1.5	1	1.5	7	10.8	0	0	56	86.2
4. Before 6 months, you should give misripani/honey to keep your baby's calm and for good sleep	2	3.1	16	24.6	6	9.2	19	29.2	22	33.9
5. Breastfeeding establishes close bond between you and your baby	0	0	0	0	10	15.4	26	40.0	29	44.6
6. Before six month, you should give water to prevent your baby from constipation	3	4.6	33	50.8	11	16.9	7	10.8	11	16.9
7. Breastfeeding is an easy feeding method	1	1.5	2	3.1	0	0	5	7.7	57	87.7
8. After postpartum, it needs 3 days for coming breastmilk	9	13.8	33	50.8	4	6.2	11	16.9	8	12.3

Table 6 (Continued)

Items	Strongly disagree (1)		Disagree (2)		Uncertain (3)		Agree (4)		Strongly agree (5)	
	f	%	f	%	f	%	f	%	f	%
9. Colostrum causes your baby's diarrhea	2	3.1	9	13.8	11	16.9	13	20.0	30	46.2
10. Breastfeeding for your baby is very convenient to you	2	3.1	1	1.5	0	0	7	10.8	55	84.6
11. Before six months, sometimes you should give mustard oil to clean your baby's bowel	4	6.2	25	38.4	16	24.6	10	15.4	10	15.4
12. Breastfeeding provides best nourishment for your baby	0	0	0	0	0	0	19	29.2	46	70.8
13. Breastfeeding decreases your beauty and figure shape	2	3.1	4	6.2	1	1.5	8	12.3	50	76.9
14. Before six months, your baby needs water to meet her/ his thirst	4	6.2	35	53.8	8	12.3	8	12.3	10	15.4
15. Breastfeeding prevents you from breast and ovarian cancer	0	0	0	0	54	83.1	7	10.8	4	6.1
16. Immediate after birth, your baby should receive honey or sweetened water	8	12.3	29	44.6	2	3.1	9	13.8	17	26.2
17. Evil air (Alga batash) can cause your breast milk contamination leading your baby's diarrhea/stomach disturbance	7	10.8	40	61.5	4	6.1	4	6.2	10	15.4

Table 6 (Continued)

Items	Strongly disagree (1)		Disagree (2)		Uncertain (3)		Agree (4)		Strongly agree (5)	
	f	%	f	%	f	%	f	%	f	%
18. Evil eye (Najar laga) can cause your baby's diarrhea/ stomach disturbance	8	12.3	44	67.7	0	0	5	7.7	8	12.3
19. Colostrum provides your baby's immunity	0	0	0	0	4	6.2	16	24.6	45	69.2
20. After working in the sun, breastfeeding is harmful to your baby	6	9.2	34	52.3	11	16.9	9	13.9	5	7.7
21. Before six months, your baby needs extra food due to watery breast milk dose not meet your baby's hungry	3	4.6	15	23.1	8	12.3	27	41.5	12	18.5
22. During fasting, your baby needs extra food due to decreasing your breastmilk	2	3.1	24	36.9	8	12.3	12	18.5	19	29.2
23. Before six months, honey can satisfy your baby's hungry	2	3.1	12	18.5	10	15.4	14	21.5	27	41.5
Outcome evaluation:										
24. Breastfeeding that protects your baby against infection is very important to you	2	3.1	2	3.1	9	13.8	17	26.2	35	53.8
25. Breastfeeding dose not make feel embarrassed for you it is very important to you	0	0	3	4.6	1	1.5	12	18.5	49	75.4
26. Breastfeeding allows you to go out socially is very important to you	0	0	1	1.5	0	0	20	30.8	44	67.7

Table 6 (Continued)

Items	Strongly disagree (1)		Disagree (2)		Uncertain (3)		Agree (4)		Strongly agree (5)	
	f	%	f	%	f	%	f	%	f	%
27. Before 6 months, giving misripani/honey does not keep your baby quite and good sleep it is very important to you	2	3.1	15	23.1	4	6.1	27	41.5	17	26.2
28. Breastfeeding that establishes a close bond between you and your baby is very important to you	0	0	1	1.5	3	4.6	33	50.8	28	43.1
29. Before six months, you should not give water your baby it is very important to you	3	4.6	27	41.6	6	9.2	21	32.3	8	12.3
30. Breastfeeding that is not expensive is very important to you	0	0	1	1.5	0	0	7	10.8	57	87.7
31. It dose not need for waiting a 3 days after postpartum for coming of your breastmilk it is very important to you	6	9.2	27	41.5	3	4.6	22	33.9	7	10.8
32. Colostrum that can not cause your baby's diarrhea is very important to you	0	0	5	7.7	6	9.2	23	35.4	31	47.7
33. Breastfeeding that is a very convenient is very important to you	0	0	0	0	0	0	9	13.8	56	86.2

Table 6 (Continued)

Items	Strongly disagree (1)		Disagree (2)		Uncertain (3)		Agree (4)		Strongly agree (5)	
	f	%	f	%	f	%	f	%	f	%
34. Before six months, no need mustard oil to clean your baby's bowel it is very important to you	4	6.2	22	33.8	8	12.3	21	32.3	10	15.4
35. Breastfeeding provides complete nourishment for your baby it is very important to you	3	4.6	1	1.5	1	1.5	17	26.2	43	66.2
36. Breastfeeding that is good for your figure is very important to you	2	3.1	2	3.1	1	1.5	15	23.1	45	69.2
37. Before six months, your baby does not need water to meet her/his thirst is very important to you	4	6.1	30	46.2	5	7.7	16	24.6	10	15.4
38. Breastfeeding that prevents you from breast and ovarian cancer is very important to you	1	1.5	0	0	15	23.1	42	64.6	7	10.8
39. Immediate after birth, your baby should not receive honey or sweetened water it is very important to you	7	10.8	20	30.8	2	3.1	21	32.2	15	23.1
40. Evil air (Alga batash) that dose not cause your baby's diarrhea/stomach disturbance is very important to you	5	7.7	35	53.8	4	6.2	12	18.5	9	13.8

Table 6 (Continued)

Items	Strongly disagree (1)		Disagree (2)		Uncertain (3)		Agree (4)		Strongly agree (5)	
	f	%	f	%	f	%	f	%	f	%
41. Evil eye (Najar laga) that does not cause your baby's diarrhea/stomach disturbance is very important to you	6	9.2	37	56.9	1	1.5	14	21.6	7	10.8
42. Breastfeeding that provides your baby immunity is very important to you	0	0	2	3.1	4	6.1	15	23.1	44	67.7
43. It dose not harmful to provide your baby breastfeeding after working in the sun it is very important to you	3	4.6	31	47.7	8	12.3	18	27.7	5	7.7
44. Before six months, your baby needs only breastmilk it is very important to you	1	1.5	12	18.5	5	7.7	34	52.3	13	20.0
45. During fasting, your breastmilk dose not decrease it is very important to you	1	1.5	14	21.6	7	10.8	24	36.9	19	29.2
46. Before six months, honey cannot satisfy your baby's hungry is very important to you	1	1.5	10	15.4	6	9.2	22	33.8	26	40.1

Table 7

Frequency and Percentage of Each Item of Subjective Norm (N= 65)

Items	Strongly disagree (1)		Disagree (2)		Uncertain (3)		Agree (4)		Strongly agree (5)	
	f	%	f	%	f	%	f	%	f	%
Normative belief:										
1. Your husband thinks that you should definitely breastfeed your baby	0	0	0	0	0	0	28	43.1	37	56.9
2. Your mother thinks that you should definitely breastfeed your baby	0	0	1	1.5	0	0	40	61.6	24	36.9
3. Your closest friend thinks that you should definitely breastfeed your baby	0	0	1	1.5	0	0	64	98.5	0	0
4. Your father-in-law thinks that you should definitely breastfeed your baby	0	0	0	0	0	0	61	93.8	4	6.2
5. Your doctors think that you should definitely breastfeed your baby	0	0	0	0	0	0	42	64.6	23	35.4
6. Your mother-in-law thinks that you should definitely breastfeed your baby	0	0	1	1.5	1	1.5	36	55.5	27	41.5
7. Your other relatives think that you should definitely breastfeed your baby	0	0	0	0	0	0	65	100	0	0
8. Your nurses think that you should definitely breastfeed your baby	0	0	0	0	0	0	59	90.8	6	9.2

Table 7 (Continued)

Items	Strongly disagree (1)		Disagree (2)		Uncertain (3)		Agree (4)		Strongly agree (5)	
	f	%	f	%	f	%	f	%	f	%
9. The traditional birth attendant thinks that you should definitely breastfeed your baby	0	0	1	1.5	2	3.2	61	93.8	1	1.5
10. Your community leaders/ village elders think that you should definitely breastfeed your baby	0	0	1	1.5	1	1.5	61	93.9	2	3.1
Motivation to comply:										
11. In general, you care very much what your husband thinks you should do	0	0	0	0	0	0	25	38.5	40	61.5
12. In general, you care very much what your mother thinks you should do	0	0	0	0	0	0	50	76.9	15	23.1
13. In general, you care very much what your closest friend thinks you should do	0	0	0	0	0	0	64	98.5	1	1.5
14. In general, you care very much what your father-in-law thinks that you should do	0	0	0	0	0	0	62	95.4	3	4.6
15. In general, you care very much what your doctors think that you should do	0	0	0	0	0	0	39	60	26	40
16. In general, you care very much what your mother-in-law thinks you should do	0	0	0	0	1	1.5	38	58.5	26	40

Table 7 (Continued)

Items	Strongly disagree (1)		Disagree (2)		Uncertain (3)		Agree (4)		Strongly agree (5)	
	f	%	f	%	f	%	f	%	f	%
17. In general, you care very much what your other relatives think you should do	0	0	0	0	0	0	64	98.5	1	1.5
18. In general, you care very much what your nurses think your should do	0	0	0	0	0	0	56	86.2	9	13.8
19. In general, you care very much what your traditional birth attendant thinks you should do	0	0	1	1.5	1	1.5	62	95.5	1	1.5
20. In general, you care very much what your community leaders/ village elders think you should do	0	0	0	0	1	1.5	61	93.9	3	4.6

Table 8

Descriptive Statistics and Independent t-test of Other Related Factors on Intention to EBF of Mothers

Variables	*M*	*SD*	Skewness	Kurtosis	*t*	*df*	*p*
Previous experience							
Yes (n=26)	3.77	4.44	1.08	1.85	1.19	63	.239
No (n=39)	5.59	4.27	0.68	2.17			
Family income							
Enough (n=29)	5.65	4.52	0.72	2.03	1.66	63	.102
Not enough (n=39)	4.33	4.29	0.67	2.19			
Parity							
Primipara (n=37)	5.38	4.28	0.42	2.17	1.09	63	.280
Multipara (n=28)	4.18	4.53	0.67	2.13			

Appendix E

List of Experts

The three experts who validated the questionnaires in this study were as follows:

1. Asst. Prof. Dr. Kaitsara Sen-Ngam

   Department of Pediatric Nursing, Faculty of Nursing

   Prince of Songkla University, Hat Yai, Thailand

2. Asst. Prof. Dr. Wantanee Wiroonpanich

   Department of Pediatric Nursing, Faculty of Nursing

   Prince of Songkla University, Hat Yai, Thailand

3. Dr. Khurshid Talukder

   Consultant Pediatrician and Research Coordinator

   Centre for Women and Child Health

   Dhaka, Bangladesh

Appendix F

List of Bilingual Translators

The three bilingual translators who translated the instruments were as follows:

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