2018

Perceptions of First-Time Antiguan and Barbudan Mothers Towards Breastfeeding and Weaning

Janelle Dion Charles-Williams
Walden University

Walden University

College of Health Sciences

This is to certify that the doctoral dissertation by

Janelle Charles-Williams

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Patrick Tschida, Committee Chairperson, Public Health Faculty
Dr. Michael Schwab, Committee Member, Public Health Faculty
Dr. Earla White, University Reviewer, Public Health Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2018

Abstract

Perceptions of First-Time Antiguan and Barbudan Mothers Towards Breastfeeding and Weaning

by

Janelle Charles-Williams

MBA, University of Leicester, 2008

MPhil, Cambridge University, 2001

BA, University of the West Indies, 1998

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

Walden University

May 2018

Abstract

Antigua and Barbuda, in the eastern Caribbean, is one of several countries with exclusive low breastfeeding rates and premature weaning. Researchers have demonstrated that babies exclusively breastfed for the first 6 months of life are better protected from childhood diseases and experience a better quality of life into adulthood, while early weaning is associated with morbidity and mortality. However, at 6 weeks postpartum, only 30% of Antiguan and Barbudan mothers are exclusively breastfeeding. Researchers have explained why mothers in general cease exclusive breastfeeding prematurely: insufficiency of breast milk, returning to paid employment, lack of social support; but an explanation specific to Antigua and Barbuda has not been identified. This qualitative phenomenological study, therefore, initiates research concerning breastfeeding attitudes and practices specific to this country. It explores the experiences and perceptions of 13 Antiguan and Barbudan 1st-time mothers on exclusive breastfeeding and weaning. The theory of planned behavior provided the theoretical framework. Data collected from semistructured interviews were coded using key word as themes. Manual analysis of the research data was also conducted. The findings indicated inadequate lactation education and counselling for mothers, poor levels of lactation education among nurses, and minimal statutory maternity leave as the reasons for premature weaning among the research participants. The findings of this research can contribute to social change in Antigua and Barbuda by providing evidence-based information to strengthen breastfeeding policies and interventions and become part of regional scholarship on this issue.

Perceptions of First-Time Antiguan and Barbudan Mothers Towards Breastfeeding and Weaning

by

Janelle Charles-Williams

MBA, University of Leicester, 2008

MPhil, Cambridge University, 2001

BA, University of the West Indies, 1998

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

Walden University

May 2018

Dedication

I dedicate this study to my heavenly Father who placed this dream in my heart 2 decades ago and helped me to see it to completion. I acknowledge that he never fails but delivers in his own time. I also dedicate this study to my husband, Morvin, and my daughter, Jamora. You both have been the wind beneath my wings. Your support, assurance, and patience throughout this journey kept me going. Thank you for making the sacrifice. Finally, thanks to my mother, Frances, for reminding me to pursue my dreams and the gentle prompts to keep pressing on despite the challenge.

Acknowledgments

This dissertation would not have been completed without the Grace of God, for which I am thankful. Special thanks to my committee for their invaluable support and encouragement – Dr. Patrick Tschida, my chair, and Dr. Michael Schwab, my ccommittee member and methodologist. I am eternally grateful for your editing, kind words of support, gentle prompting, and professional guidance. I would like to acknowledge and thank the nurses who assisted me at the five clinics where I conducted my primary research. Finally, I wish to thank the 13 mothers who participated in this study, giving of their time so freely.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Introduction

Many first-time mothers worldwide want to provide the best nutritional support for their growing babies. The World Health Organization (WHO, 2016) and the United Nations Children Education Fund (UNICEF, 2015) recommend breast milk as the optimal nutrition for infants. Many of the ingredients contained in breast milk cannot be replicated (UNICEF, 2015). Although formula may be universally regarded as a distant substitute to breast milk to feed young infants, UNICEF (2011) suggests its use only among HIV-positive mothers out of concern that mothers could transmit the disease to their infants. This recommendation was made to HIV-positive mothers after counseling on all infant feeding options and the requisite sanitary conditions, inclusive of safe water, necessary to safely practice formula feeding (UNICIEF, 2011). UNICEF (2015) and the WHO (2016) recommend that mothers initiate breastfeeding within the first hour of giving birth and breastfeed exclusively (i.e., feed infants only breast milk) for the first 6 months. These two leading health institutions further recommend that mothers continue partial breastfeeding for 2 years or more after giving birth, in combination with solid foods starting when their infants are 6 months old (UNICEF, 2015; WHO, 2016). Examples of appropriate solid foods fed to infants include cereals and pureed fruits and vegetables. Prell and Koletzko (2016) recommended that meat and fish be included in the diet of infants after 6 months of age.

Global rates of breastfeeding have grown modestly in the past 2 decades (Cai, Wardlaw, & Brown, 2012; UNICEF, 2015; WHO, 2016). Exclusive breastfeeding rates

among children under 6 months, however, are still well below 50% in most countries (WHO, 2016). According to Victora et al. (2016), only 37% of children younger than 6 months of age are exclusively breastfed in low and middle-income countries. Globally, nutrition experts view rates of exclusive breastfeeding as being below acceptable figures and thus suboptimal (WHO, 2016). These low rates of breastfeeding are of concern because failure to comply with the recommendation to exclusively breastfeed potentially exposes infants to over- and under-nutrition, as well as decreasing immunity to disease (Government of Antigua and Barbuda, 2012).

Historically, the English-speaking Caribbean has had a history of exclusive breastfeeding. According to Marchione (1980), West African slave women in the West Indies engaged in exclusive breastfeeding in part as a method of contraception. As slave owners became aware of the impact of breastfeeding on fertility, and by extension the growth of the population, they introduced measures to curb such extended breastfeeding practices (Marchione, 1980). Diluted paps, a type of porridge, and bush tea–a beverage using herbal leaves–were offered to infants, giving rise to mixed feeding and early weaning that took root by the start of the 20th century (Marchione, 1980). In the industrialized world, bottle feeding increased for many reasons, including a fallout from the industrial revolution of mechanistic thinking (the alienation of head from body); growth in applied chemistry; and an increasing demand for clean, modern alternatives to breastfeeding as women's presence in the workforce increased (Schwab, 1996). The most recent statistics have indicated that only 30% of mothers in Antigua and Barbuda

exclusively breastfeed their infants up to 6 weeks postpartum (Government of Antigua and Barbuda, 2012).

Infants have an increased risk of morbidity and mortality when the exclusive breastfeeding period is shortened (Victora et al., 2016). Infants also are at risk of having health conditions such as anemia (Tawia, 2012), Type 2 diabetes (Victora et al., 2016), obesity (Strong, Lee, & Shirleatha, 2014), and eczema (Kuo Inkelas, Slusser, Maidenberg, & Halfon, 2011). The Government of Antigua and Barbuda (2012) has noted that poor compliance with exclusive breastfeeding recommendations compromises infant nutrition and predisposes infants to poor health conditions.

In this study, I explored how first-time mothers in Antigua and Barbuda experienced breastfeeding, especially exclusive breastfeeding and weaning. Based on my review of the literature, this type of study has not been done before. Moreover, the research question as to why Antiguan and Barbudan mothers are not following breastfeeding guidelines that they exclusively breastfeed and introduce weaning when an infant is 6 months has not been answered. An understanding of the perceptions of first-time mothers towards exclusive breastfeeding and the practice of weaning may assist public health officials in their efforts to reduce growing obesity rates and incidents of chronic diseases on these islands. The literature has shown an association between chronic and infectious diseases and obesity and exclusive breastfeeding and early weaning (Strong et al., 2014; Victora et al., 2016). The thoughts shared by research participants may help build capacities to enhance breastfeeding rates in Antigua and Barbuda.

North American and European research has shown that mothers have identified insufficient breast milk production, having to return to paid employment (Bai & Fong, 2014), lack of support from family and friends (Hong Lee, Durham, Boot, & Sychareun, 2013; Joshi, Trout, Aguirre, & Wilhelm, 2014), and concerns over body image (Al-Binali, 2012; MacKean & Spragins, 2012) as reasons why they do not exclusively breastfeed and instead engage in early weaning. The often aggressive, sometimes subtle strategic marketing of breast milk substitutes by manufacturers of commercial formula is another contributing factor. Their deliberate marketing strategies include sponsoring health conferences, distributing free products to mothers, focusing on less contentious markets, and brand stretching–associating a brand's name with a healthy baby (Smith & Blake, 2013). Among the other subtle and calculated marketing strategies is the indirect advertisement of baby formula by using logos and brand names associated with baby formula on labels for toddler foods (Smith & Blake, 2013). The baby formula business is worth US $25 billion (Mason et al., 2013), and the industry is poised for further growth.

The existing literature on breastfeeding has predominantly presented a European and North American perspective, as typified by Jolly et al. (2012); Saavedra, Deming, Dattilo, and Reidy (2013); and Watkins, Meltzer-Brody, Zolnoun, and Stuebe (2011). An understanding of the situation regarding breastfeeding in Antigua and Barbuda would provide insight to the local context. Notably, in some peer-reviewed literature on breastfeeding, Caribbean data are conflated with Latin American data (Lutter, Chaparro, Grummer-Strawn, & Victora, 2011). While other researchers like Perez-Escamilla (1994) provided insightful information on breastfeeding in the Americas, the research is dated.

In some instances, when researchers referred to mothers in Caribbean countries, they tended to focus on Arubans and migrants, including Puerto Ricans (Grêaux et al., 2013; Kaufman, Deenadayalan, & Karpati, 2010) and Caribbean people living in the diaspora in countries such as the United States (Crico-Lizza, 2005). Though American, Puerto Ricans are technically Caribbean people too. Based on my literature review, there is limited research available specific to breastfeeding in Antigua and Barbuda. Moreover, the Caribbean region and Latin America are places of diverse identities and experiences as well as races and ethnic groups. Research with conflated data from the Americas, while instructive, cannot be applied without recognition of potential differences (Jackson-Best, 2016). It is instructive that Victora et al. (2016) advocated for tailored interventions to promote exclusive breastfeeding rates based on specific country partners. Based on such an assertion, the dissemination of the results of this study may thus help inform public health officials about the lived experience of women and help adequately contextualize policies and interventions on breastfeeding in Antigua and Barbuda. Such policies could include putting support strategies in place at multiple levels to promote the desired national outcomes regarding exclusive breastfeeding.

The research problem I addressed in this study is why mothers in Antigua and Barbuda are not following breastfeeding guidelines to exclusively breastfeed infants for the first 6 months of life and why mothers are not delaying the introduction of other foods until an infant is 6 months old. I examined this problem by working to discover the lived experiences of first-time mothers as related to breastfeeding to understand their perceptions toward exclusive breastfeeding and weaning.

In this chapter, I present a brief description of the research literature related to my study topic. I also detail the research questions, as well as the nature and significance of my study. In addition, I consider the assumptions underlying my study and its limitations. Chapter 1 concludes with a preview of Chapter 2.

Background

Researchers have concluded that a child's survival is enhanced through exclusive breastfeeding (Victora et al., 2016). The nutritional content of human milk is adequate to fill the dietary requirement of a growing infant between birth and 6 months of age (Daly, Pollard, Phillips, & Binns, 2014; Haile & Biadgilign, 2015; UNICEF, 2015). Breast milk saves lives. According to Victora et al. (2016), breast milk reduces the risk of sickness and death. An estimated 830,000 deaths could be avoided if every baby were breastfed within the first hour of life (Victora et al., 2016). More specifically, the deaths of 22% of newborns could be avoided if breastfeeding started within the first hour of life, and 16% of newborns if breastfeeding started within the first 24 hour (Victora et al., 2016). Breastfeeding also benefits mothers by reducing the mother's risk of breast and ovarian cancer (Victora et al., 2016). McCrory and Layte (2012) have shown that, among infants, the duration of breastfeeding is inversely associated with the risk of becoming overweight. According to Papp (2014) there is a well-documented association between breastfeeding and cognitive function, motor skills, and socioemotional development. Early weaning of infants ahead of 6 months has also been associated with the preclinical conditions leading to Type 1 diabetes (Patelarou et al., 2012) obesity, adult-onset celiac disease, eczema (Kuo et al., 2011), and respiratory issues (Victora et al., 2016).

Irrespective of the benefits, breastfeeding rates are low globally and are under 50% (Victora et al., 2016). Only 37% of children younger than 6 months of age are exclusively breastfed (Victora et al., 2016). Countries such as Cuba that have embraced the 10-step baby friendly initiative promoted by WHO (2015) and UNICEF (2016) have seen success in exclusive breastfeeding. According to Lutter (2016), strong political will, financial commitment, and human resource allocation is required to facilitate change and a movement towards acquiring and robustly implementing the Baby-Friendly Hospital Initiative (BFHI) throughout the Caribbean. The implementation of the International Code of Marketing of Breast milk Substitutes passed by the Health Assembly Resolution in 1981 also promotes exclusive breastfeeding. Family support is also critical in promoting exclusive breastfeeding. Researchers have shown that grandmothers have promoted breastfeeding (Agunbiade & Ogunleyein, 2012) as well as facilitated early weaning (Susiloretni, Hadi, Prabandari, Soenarto, & Wilopo, 2015). Also, engaging fathers as promoters of exclusive breastfeeding can move them from a position of being ambivalent to actively promoting exclusive breastfeeding (Datta, Graham, & Wellings, 2012).

A wide volume of literature exists on breastfeeding. The subject has been explored from many angles. However, breastfeeding is a complex issue, and there are many facets that are still not fully understood. These gaps must be filled to ensure that accurate, evidence-based information is available to guide parents, public health programs, and policy makers (Office of the Surgeon General (US), 2011). New studies can provide insight into questions related to reducing disparities in breastfeeding rates

and identifying barriers to and facilitators of breastfeeding among populations with low breastfeeding rates. According to Tuan, Nguyen, Hajeebhoy, and Frongillo (2014), more research is also needed to understand the likely complex pathways between the awareness of the benefits of breastfeeding and the actual practice of breastfeeding. An improved understanding of best practices for management and support of lactation and breastfeeding is also needed in countries with low exclusive breastfeeding rates. Evidence-based findings could lead to the implementation of improved strategies, resulting in higher breastfeeding rates and majorly impacting public health.

This study on the perceptions of first-time Antiguan and Barbudan mothers towards breastfeeding and weaning was, therefore, necessary to gain insight into the low exclusive breastfeeding rates in that country. By describing the meaning attached to breastfeeding, the potential barriers, challenges, and facilitators of the behavior, measures to improved breastfeeding rates can be enhanced. Evidence-based interventions to support breastfeeding can also help Antigua and Barbuda achieve its Sustainable Development Goals by 2030.

Problem Statement

The research problem I addressed in this study is why mothers in Antigua and Barbuda are not adhering to recommendations by leading health institutions to exclusively breastfeed their infants for the first 6 months of life and why mothers are prematurely introducing weaning ahead of infants being 6 months old. Only 30% of mothers are exclusively breastfeeding at 6 weeks postpartum (Government of Antigua and Barbuda, 2012). This issue of low exclusive breastfeeding rates is not unique to

Antigua and Barbuda; it is experienced worldwide, with exclusive breastfeeding rates at 6 months old less than 50% (Victora et al., 2016). On the other hand, the baby formula industry is poised for growth (Mason et al., 2013) as inadequate maternity leave policies, insufficient polices on breast milk substitutes, and the absence of breastfeeding-friendly policies and legislation facilitate low exclusive breastfeeding rates. Eighty percent of mothers in Antigua and Barbuda partially breastfeed up to 3 months and supplement feeding with other milk products (Government of Antigua and Barbuda, 2012). This practice of mixed feeding (in which infants receive breast milk, formula, and other foods such as cereals before 6 months of age) has been associated with over- and-under consumption by infants (Government of Antigua and Barbuda, 2012; Kuo et al., 2011; Pearce, Taylor, & Langley-Evans, 2013). Nutritional deficiencies owing to under consumption of foods and overfeeding give rise to morbidity and mortality.

Generally, the noncompliance with WHO's feeding recommendations appears to cut across all groups of women globally (MacKean & Spragins, 2012). However, Adhikari, Khanal, Karkee, and Gavidia (2014) reported that mature women and women with higher levels of education generally comply with breastfeeding recommendations. While researchers have noted some reasons why so many mothers are making decisions contrary to the recommendations of the WHO and the health interests of their children, an understanding of the pervasiveness of this issue remains elusive in the research literature.

Purpose of Study

The purpose of this study was to explore Antiguan and Barbudan first-time mothers' perceptions toward exclusive breastfeeding and premature weaning. I examined

the issues that facilitate exclusive breastfeeding and the barriers to it. I also looked at early weaning from the breast, that is, weaning prior to 6 months. Early weaning (the introduction of foods other than breast milk such as formula, cow's milk, cereals, and mashed fruits and vegetables with a view towards gradually having an infant consume foods used by the rest of the family) is related to rapid weight gain in infancy and may have implications for childhood obesity (Hansstein, 2016). Prior to 6 months of age, an infant's intestinal walls are usually not yet ready to adequately filter harmful substances such as bacteria (Rowland, Choi, & Warner, 2013). Thus, there is the potential for bacteria and pesticides that can be present in weaning foods to enter the body unfiltered. The immaturity of an infant's intestinal tract prior to 6 months of age means that not only the healthy nutritious substances are entering the body, and the presence of harmful bacteria can give rise to uncontrolled inflammation (Rowland et al., 2013). Additionally, given that infants are not able to control their tongues until 6 months of age, introducing solids before that age can present a choking hazard (Brown, Jones, & Rowan, 2017). The early introduction of solids may also interfere with a mother's milk production, as the baby's demand for the breast is reduced (O'Sullivan, Farver, & Smilowitz, 2015). For these reasons, the introduction of solids should not be rushed.

Research Questions

I answered four research questions (RQs):

- RQ1: What are the perceptions of first-time Antiguan and Barbudan mothers regarding exclusive breastfeeding and weaning?

- RQ2: What are the perceptions of first-time Antiguan and Barbudan mothers about the benefits and disadvantages of exclusive breastfeeding?
- RQ3: What factors do first-time Antiguan and Barbudan mothers view as barriers to and facilitators of exclusive breastfeeding?
- RQ4: What are the views of first-time Antiguan and Barbudan mothers on weaning infants prior to 6 months of age?

Theoretical Framework for Study

I used Ajzen's (1991) theory of planned behavior (TPB) as the theoretical framework for my study. Ajzen (1991) posited that people's sense of control is a framework that can be used to predict behavioral achievement. The author argued that behavior is guided by belief, which guides perception (Ajzen, 1991). Giles, McClenahan, Cairns and Mallet (2004) added that people's beliefs are based on the outcomes of their own behavior (that is, their experience), the benefits to be derived, or the expectations of others. These factors might encourage or discourage the behavior (Giles et al., 2010). The focus of TPB on perception aligns with my research interest—how mothers' perceptions of breastfeeding impacts their adherence to WHO's (2016) recommended exclusive breastfeeding practices. TPB will be discussed in further detail in Chapter 2. TPB helped me frame my interview questions and subsequently answer my research questions. I used an interview guide developed by Francis et al. (2004) for researchers using a TPB framework. This guide helps researchers gain information from research participants on key constructs of the theory, including knowledge, behavioral belief, perceived behavioral control beliefs, social referents, and sources of information.

Nature of Study

I used a qualitative approach for this research to allow for a rich and in-depth exploration of the perceptions of first-time mothers regarding exclusive breastfeeding and weaning in Antigua and Barbuda. Through interviews, I gained knowledge of the lived experiences of first time-mothers as relates to factors that facilitate and prohibit the breastfeeding best practices recommended by the WHO (2016). I used a phenomenological method of inquiry to identify the essence of the human experiences of the research participants. The phenomenological approach focuses on the subjective views and explanations of those who have experienced a phenomenon and the meaning they ascribe to those experiences. The phenomenological approach asserts that only those who have lived the experience can explain it (Todres & Holloway, 2004). In using this research approach, I gained insights into the actions and motivations toward breastfeeding of first-time mothers in Antigua and Barbuda.

Semistructured interviews were conducted with a sample population consisting of 13 mothers to the point where information received became redundant. Francis et al. (2012) recommended a maximum of 25 research participants when using TPB. In a review of qualitative studies, Mason (2010) indicated varying numbers in the sample size with an average of 31. Ritchie, Lewis, and Elam (2003) advocated for a sample size of fewer than 50 people, as larger groups can become cumbersome. The guiding principle of qualitative research sampling is achieving saturation, which is the point where no new information is forthcoming from interviewing additional participants. Moreover, in qualitative research, participants are selected based on their specific features, and the

sample size is not based on probability – it is not statistically significant, and the chances of selection are unknown (Ritchie et al., 2003). Given that my study is arguably modest in what it is seeking to understand, my sample size is 13. The inclusion criterion for my research was first-time mothers whose infants were not ill and who were between 1 and 6 months old. Research participants may either have breastfed their infants for a period or be actively doing so–either exclusively or through mixed feeding or may not breastfeed at all. Selection was determined by asking volunteer participants questions pertaining to the study inclusion criteria when initial contact was made with me.

This sample population came from five urban public health centers located in Antigua. I selected health centers as research sites because women who have the characteristics and inclusion criteria of the sample population for this study attended child wellness clinics offered at public health centers. Additionally, approximately 24% of the population of Antigua and Barbuda lives in urban areas (World Bank, 2016). Moreover, neighboring communities in the suburbs also visited the selected sites. These two conditions, as well as the multiplicity of research sites, provided a rich pool from which to draw the sample population. According to the U.S. Department of Health and Human Services (n.d), researchers often find it challenging to attract sufficient research participants. Based on this challenge noted by the U.S. Department of Health and Human Services, I determined that multiple research sites should yield adequate research participants.

I used the NVivo 11 Starter for Windows software to assist in analyzing the data that emerged from the interviews with research participants. The NVivo software

identifies nodes of information, which allows for the detection of emerging patterns and ideas. I conducted a manual data analysis based on these emerging themes. NVivo is compatible with qualitative research and is accurate and reliable (Zamawe, 2015).

Definition of Terms

Complementary feeding: The process whereby any nonbreast milk foods or nutritive liquids is given to young children under 6 months of age (UNICEF, 2016).

Exclusive breastfeeding: A process where an infant receives only breast milk (including breast milk that has been expressed or from a wet nurse) and nothing else, except for oral rehydration solutions, medicines, and vitamins and minerals (UNICEF 2015).

Formula: Artificial milk for babies made of a variety of products, including sugar, animal milk, soybean, and vegetable oil–usually in powder form and mixed with water (UNICEF 2015).

Mixed feeding: The infant receives breast milk and any other food or liquid including water, nonhuman milk, and formula before 6 months of age (UNICEF 2015).

Perception: The practice whereby "people select, organize, and interpret sensory stimulations into significant information about their work environment" (Rao & Narayan, 1998, p. 230).

Weaning: Introducing a range of foods gradually until an infant is eating the same foods as the rest of the family (UNICEF, 2008).

Assumptions

The underlying assumption of this study was that multiple realities, including those of the research participants, existed regarding breastfeeding. In this study, I assumed that social influences were part of these multiple realities and that there was likely to be differences between the influences experienced by the participants. These multiple realities provided rich data to help understand the phenomenon under investigation. There were several other assumptions inherent in this research. A major assumption was that the participation of research participants would be voluntary. I also assumed that all research participants would be honest about their experiences and history to lend credibility to this research. To manage this assumption, I built trust during each encounter with research participants, starting with the initial contact. I assured participants that the personal information they shared would be kept confidential. This meant that individual identity would be concealed and would not be reflected in reports on the research findings. To maintain trust, everyone was informed that there were no judgmental responses on my part pertaining to information shared. I adhered to established ethical standards, which included respect for research participants and treating information they shared as confidential. According to the Office for Human Research Protections (2016), researchers are expected to conduct themselves in an ethical and respectful manner. I followed these expectations.

Another assumption was that recall bias, or the tendency for participants to misremember information, was at a minimum. Recall bias occurs when there is a discrepancy in the level of accuracy in information provided by research participants

(Aschengrau & Seage III, 2008). Some researchers have suggested that recall bias regarding length of exclusive breastfeeding increases with the amount of time that has elapsed since the baby was weaned (Agampodi, Fernando, Dharmaratne, & Agampodi, 2011). Of note, part of the methodology used by Agampodi et al. (2011) included a 9month recall of the duration of exclusive breastfeeding. Based on the time that had elapsed since the action, the retrospective recall of mothers was not consistent with reports given by those same mothers at follow-up visits during the first 6 months postpartum (Agampodi et al., 2011). Therefore, in my research, I focused on mothers with infants 6 months and younger to ensure the information shared was reliably recalled by reducing the potential for misinformation.

I also assumed that the research methodology chosen–a qualitative approach using semistructured interviews–was adequate to draw out the information from research participants. I avoided leading questions (that is, questions that suggested the desired response) to avoid influencing the answers (Aschengra & Seage III, 2008). It is not unusual for researchers to make assumptions, but by stating them, I indicated my awareness of them and identified mitigating action to prevent them from tainting this study. I also gave a clear indication of my research framework and reiterated the complexities of social research.

Delimitations of the Study

The study included mothers who have never breastfed, have breastfed, or are currently breastfeeding their infants. This enabled me to explore the perceptions towards exclusive breastfeeding and weaning, and why there appears to be poor adherence to

WHO's (2016) recommendations to exclusively breastfeed infants for the first 6 months in Antigua and Barbuda. The meanings first-time mothers attached to the timing of weaning helped me understand their decision-making process. Only first-time mothers 18 years and older were eligible to participate in the research. Moreover, informed consent was required for each first-time mother participating in this research. Such consent can only be derived from adults; that is, individuals 18 years and older (Office for Human Research Protections, 2016). This disqualified young teenage mothers from participating in this research. In addition, the study did not include the input of significant others.

Limitations

The findings of this research cannot be applied to wider populations because this was a small qualitative study whose purpose was to provide insight into the factors that contribute to different infant feeding patterns and not to provide generalizable results. Phenomenological studies focus on the details of individual experiences, the meaning ascribed to them, and the complexities of the meanings (Charlick, McKellar, Fielder, & Pincombe, 2015). Phenomenological studies do not focus on frequency; hence, generalizations cannot be made of the results (Charlick et al., 2015). Additionally, ambiguities are inherent in human language. However, any double meanings, such as different ways of referring to breastfeeding (e.g., sucking, feeding, milking, and expressed feeding) will be considered in the analysis. However, while the cultural context of this research presents limitations in the transferability of the study results, it provides critical insights into exclusive breastfeeding and weaning.

It is worth noting that the sample population was predominately Blacks of African origin. Participants had an African tradition of exclusive breastfeeding, although Marchione (1980) reported that by the 1900s, mixed feeding had become engrained. This cultural heritage contextualized this research. The research population was further limited by its smallness, as there were no more than 25 respondents. The advantage of this small population, however, is that it allowed me to become fully immersed in the research and to gather detailed information from respondents. This small research population also enabled me to develop meaningful relationships with the research participants, thereby gaining their confidence and engendering the sharing of in-depth information to address the research questions.

Significance

Numerous researchers have showed a positive association between breastfeeding and healthy weight. Newborns follow their internal hunger and fullness cues. They eat when hungry, signs of which include sucking of the fist, stopping eating when full, and pursing the lips together (United States Department of Agriculture Food and Nutrition Service, 2001). According to Gross et al. (2010) and Reyes et al. (2014), breastfeeding babies learn early to stop feeding when full. According to the American Academy of Pediatrics (2005), some newborns feed 8 to 12 times per day. According to Gross et al., parental control of feeding and pressuring infants to eat without paying attention to infant's feeding cues potentially risks childhood obesity later in life. Additionally, according to the Government of Antigua and Barbuda (2012), the low adherence to exclusive breastfeeding and the resulting early introduction of complementary foods

leading to early weaning can cause overnutrition. Overnutrition can lead to obesity and give rise to chronic noncommunicable or lifestyle diseases. In Antigua and Barbuda, 60% of men and 25% of women over 40 years old are obese (Food and Agriculture Organization of the United Nations 2015). Adult obesity usually starts in childhood (WHO, 2017). Exclusive breastfeeding can help reduce obesity rates as well as the rate of noncommunicable diseases in the community by helping infants regulate their food intake from an early age.

The responses provided by the research participants detailing their lived experiences concerning breastfeeding and any challenges that prevented them from adhering to the WHO recommendations on exclusive breastfeeding and weaning at 6 months provided important insight. The information shared is particularly useful given that there is limited evidence-based research on breastfeeding in Antigua and Barbuda. The Office of the Surgeon General (2011) also confirmed that a significant knowledge gaps exists on breastfeeding. New studies such as mine have the potential to provide insights into multifaceted questions such as how to support lactation and breastfeeding within the specific setting of Antigua and Barbuda. Population-specific research is consistent with the practice advocated by Livingood et al. (2011) who warned against the reliance on generalized best practices interventions. Livingood et al. recommended understanding the existing situation with a view to identifying solutions that are exclusive to a specific setting. Moreover, information shared by research participants also provided some insights on how to address the multifaceted and complex challenge of obesity in Antigua and Barbuda.

Several studies, including recent research undertaken by Victora et al. (2016), have highlighted the relationship between breastfeeding and obesity. Moreover, according to Simmonds, Llewellyn, Owen, and Woolacott (2016), overweight or obese children typically become overweight or obese adults. Promoting exclusive breastfeeding can, therefore, be part of a national strategy to fight obesity and reduce noncommunicable or lifestyle diseases (Greaux et al., 2013; Strong et al., 2014: Victora et al., 2016).

To readily facilitate sharing my research findings, I will deliver personal copies of my research to key policy makers in the health sector, including the minister of health, the chief medical officer, the chief nutritionist, and the nursing superintendent of public health. I will also engage in brief discussions on the key findings at each handover of a copy of my dissertation.

Potential Impact on Practice and Policy

The findings of this research may also provide a framework for analyzing the impact of the existing national breastfeeding campaign. Campaigns aligned to the WHO and UNICEF breastfeeding recommendations are promulgated annually during August's observance of Breastfeeding Week and at pre- and post-natal clinics at community health centers. The findings of my research can also serve as a guide to frame appropriate strategies to help mothers fully engage in exclusive breastfeeding. Public policies that incorporate such strategies could be, for example, the extensions of statutory maternity leave from 12 weeks to 6 to 12 months and mandatory lactation facilities in the workplace and public spaces. This could also be the push that the baby-friendly hospital initiative needs for local implementation. This initiative is a WHO/UNICEF global effort

to implement hospital practices that protect, promote, and support breastfeeding (WHO, 2014). I also plan to circulate my research findings in the form of a press release to the print and electronic media in Antigua and Barbuda. I will seek and accept invitations to discuss the findings on the local radio talk shows, potentially sparking a national conversation on exclusive breastfeeding.

Summary

In this chapter, I provided an overview of the study of perceptions of first-time mothers in Antigua and Barbuda towards exclusive breastfeeding and weaning. Like global figures reported by the WHO and Victora et al. (2016) on breastfeeding, mothers in Antigua and Barbuda have low rates of exclusive breastfeeding (Government of Antigua and Barbuda, 2012). Furthermore, the introduction of complementary feeding occurs ahead of the WHO recommended 6 months age for infants (Government of Antigua and Barbuda, 2012). The purpose of this study was to understand why the phenomenon of low exclusive breastfeeding rates and early weaning occur by interviewing a sample population of first-time mothers about their lived experiences regarding breastfeeding. Rich, in-depth information has been gathered using interviews. This qualitative phenomenological study was situated in Antigua and Barbuda using the TPB.

In the next chapter, I provide background information on the research problem and the procedures undertaken to understand it. Chapter 2 consists of a literature review, with a specific focus on issues related to exclusive breastfeeding. I provide the views of researchers on the benefits of, facilitators of, and barriers to exclusive breastfeeding. The

chapter includes details of the study's theoretical framework as well as the findings of other researchers.

Chapter 2: Literature Review

Introduction

The prevalence of exclusive breastfeeding is low in the Caribbean twin island state of Antigua and Barbuda. Only approximately 30% of infants are exclusively breastfeeding by 6 weeks postpartum (Government of Antigua and Barbuda, 2012).This is contrary to the recommendations of the Government of Antigua and Barbuda, 2012 and the WHO (2016) that infants be breastfed-only for the first 6 months of life. These statistics for exclusive breastfeeding in Antigua and Barbuda are similar to the rates in developed countries such as Canada (Brown, Dodds, Legge, Bryanton, & Semenic, 2014) and in developing countries such as Ethiopia (Shifraw, Worku, & Berhane, 2015). Suboptimal exclusive breastfeeding rates are also prevalent in other Caribbean islands such as Jamaica, where rates of exclusive breastfeeding at 4 months was 21.4%, and in Guyana, where that figure was 31.3% (WHO, 2016).

Moreover as indicated in Figure 1, historically, women in the Americas have low rates for exclusively breastfeeding infants 6 months postpartum. As indicated in Figure 1, in the Latin American country of Suriname, only 2% of babies under 6 months old were exclusively breastfed in 2010. Peru registered the best performance for breastfeeding; approximately 72% of babies were exclusively breastfed. The median figure for the 28 countries in the Americas that reported their exclusive breastfeeding numbers is approximately 32%. This number confirms low performance in the areas of exclusive breastfeeding for the Americas. There are no reported statistics for Antigua and Barbuda. The few countries of the English-speaking Caribbean captured in Figure 1 show that the

prevalence rates of exclusive breastfeeding were low, with Barbados at approximately 24%, and Guyana and Jamaica not performing much better. As Figure 1 also indicates, low exclusive breastfeeding rates among the Latin American and Caribbean countries in the Americas is consistently high.

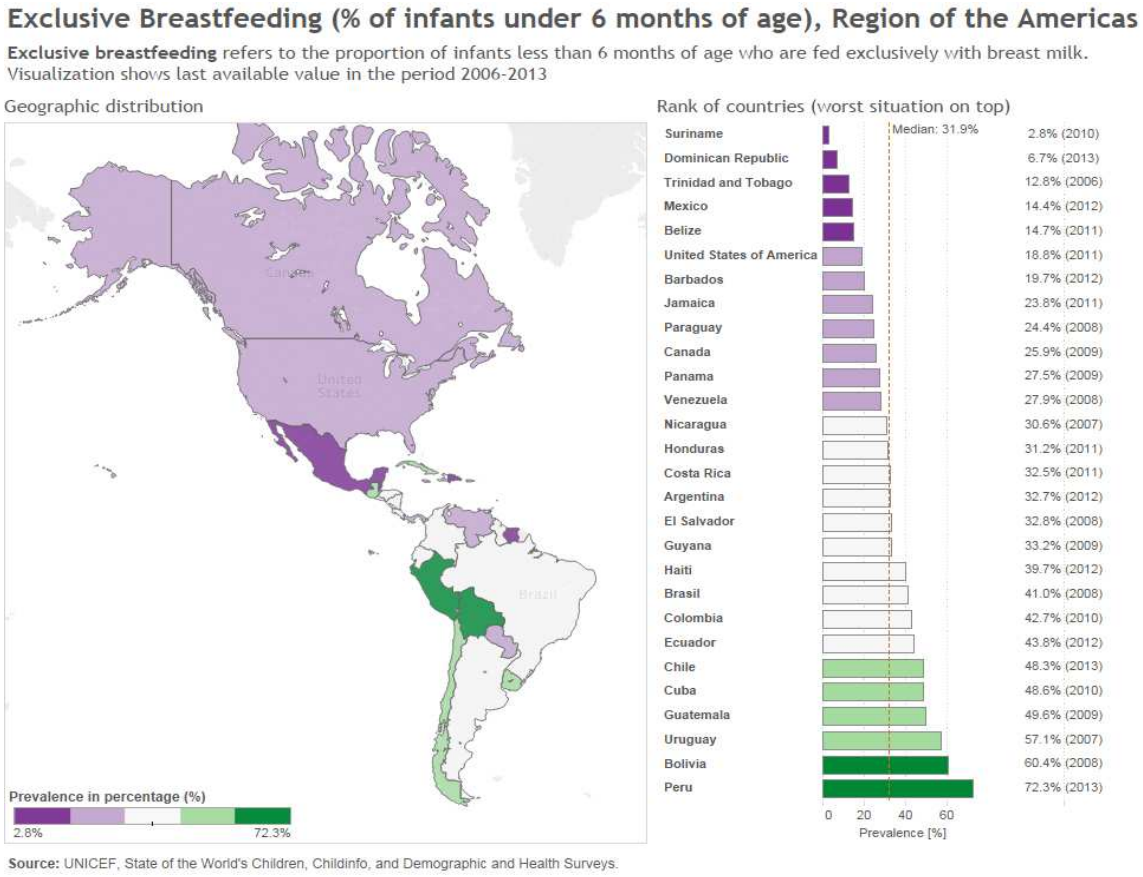

Figure 1. Exclusive breastfeeding (percentage of infants under 6 months of age), region of the Americas by Pan American Health Organization and World Health Organization, 2016. (http://www.paho.org/hq/index.php?option=com_content&view=article&id=11580&Itemid=41164&lang=en). Figure available in the public domain. PAHO/WHO ©

Based on the low prevalence of exclusive breastfeeding in the Caribbean and in many countries in Latin America, a significant number of infants are introduced to other foods ahead of health authorities' recommendation of 6 months of age. This introduction of other milks and solids occurs while the infants' digestive systems are still underdeveloped, and, as such, unprepared to handle foods other than breast milk. This is why the WHO (2016) recommends that mothers exclusively breastfeed infants for the first 6 months, and partially breast feed up to age 2 and beyond with appropriate complementary foods. The poor compliance by mothers in Antigua and Barbuda with the WHO recommendations can place infants at risk of premature death and morbidity. More specifically, failure to engage in exclusive breastfeeding can result in over- and under-nutrition (Government of Antigua and Barbuda, 2012), gastrointestinal infections (WHO, 2011), respiratory infections, sudden infant death syndrome, obesity, Type 1 and 2 diabetes, asthma and allergies, and lactose intolerance (UNICEF, 2016). Given the potential risks associated with not exclusively breastfeeding infants, some researchers, such as Walsh, Kearney, and Denis (2015) have argued that many first-time mothers do not fully understand the recommendations of WHO, hence the low rate of compliance. In this study, the problem I addressed is that women are not following breastfeeding guidelines in Antigua and Barbuda. I examined this problem by seeking to discover the lived experiences of breastfeeding first-time mothers to understand their perception towards exclusive breastfeeding and weaning.

In this chapter, I detail my approach to the literature review by identifying the various databases used as well as the search terms used to comb for peer reviewed articles. Additionally, I describe in detail the theoretical framework that guided this research and examine a number of factors that act as facilitators and barriers for breastfeeding. I provide a review of the benefits of breastfeeding.

Literature Search Strategy

The literature search for this review was conducted using the CINAHL & MEDLINE Simultaneous Search and ProQuest Nursing & Allied Health Source databases, inputting the following terms: *breastfeeding and attitudes of first time mother*, *breastfeeding benefits, breastfeeding and social development, breastfeeding and maternal benefits/ mental health, breastfeeding and theory of planned behavior, breastfeeding and maternal employment and breastfeeding and public policy, breastfeeding /exclusive and culture, exclusive breastfeeding and family support/ grandparents, exclusive breastfeeding and employment,* and *breastfed or breastfeeding or Antigua or Barbuda or Caribbean or exclusively, or perceptions.* Duplicated articles were excluded as well as those prior to 2012 to ensure the literature was from recent research. The official websites of the WHO and UNICEF were also reviewed as these two global institutions are the leading promoters of exclusive breastfeeding and the weaning of infants at 6 months old; they also disseminate research on breastfeeding and weaning. Seminal breastfeeding studies in the Caribbean and Latin America were also drawn upon.

Theoretical Framework

The TPB was the most suitable theoretical framework for my study. TPB was developed by Ajzen in the 1980s to predict behavior. Additionally, TPB was developed to address shortcomings in the theory of reasons, developed by Fishbein and Ajzen (Ajzen, 1991). TPB is used to explain actions over which people have incomplete control (Ajzen, 1991). Based on the model (see Figure 2), perceptions are based on a combination of factors imbedded in the construct of TPB. Perceived behavioral control refers to a person's conviction vis-à-vis his or her ability to perform a task and is a key addition to the theory of TPB (Ajzen, 1991). Perceived behavioral control has a direct link to behavior achievement (Ajzen, 1991). This perceived behavioral control is also predicated on a person's conviction from the presence of several influencing factors that have the potential to facilitate or hinder the performance of a behavior such as breastfeeding. Moreover, the factors impacting the perception of a first-time mother towards breastfeeding are influenced by a perceived difficulty or ease associated with certain qualities in the behavior (Ajzen, 1991).

Subjective norms, which also impact perception, address the individual's perception of a behavior based on the influence of significant others such as family members and friends (Ajzen, 1991). A normative belief is the perceived behavioral expectations of key individuals or groups such as the person's spouse, family, friends, or coworkers (Ajzen, 1991). Normative beliefs influence subjective norms (Ajzen, n.d.). The theory's construct of behavioral beliefs and attitudes toward the behavior also impacts perception. Behavioral beliefs focus on the outcome of behavior, which in turn

impacts attitudes (Ajzen, n.d.). In the context of this study, perceptions as well as attitudes are favorable towards breastfeeding if the perception of a first-time mother is that there are positive consequences, but they are unfavorable if the perception is that the consequences are negative. Moreover, if a first-time mother perceives ease or difficulty breastfeeding, the perception towards exclusive breastfeeding would vary accordingly. Both perceptions and attitudes would be impacted.

TPB is well placed to explain the perceptions of first-time mothers toward exclusive breastfeeding. Moreover, the theory has been used in public health to determine birth control behavior and the use of condoms when having sex. The theory offers a multilevel approach to understanding complex human behavior. TPB offers an understanding of human behavior by looking at a combination of perceived behavioral control, control belief, normative beliefs, and subjective norm influences to shape an individual's perception and attitude, and ultimately determines intention and behavior (Ajez, 1991). The more favorable the attitude, the more subjective norms and perceived behavioral control would reflect a strong willingness to perform the behavior, which in this case is breastfeeding.

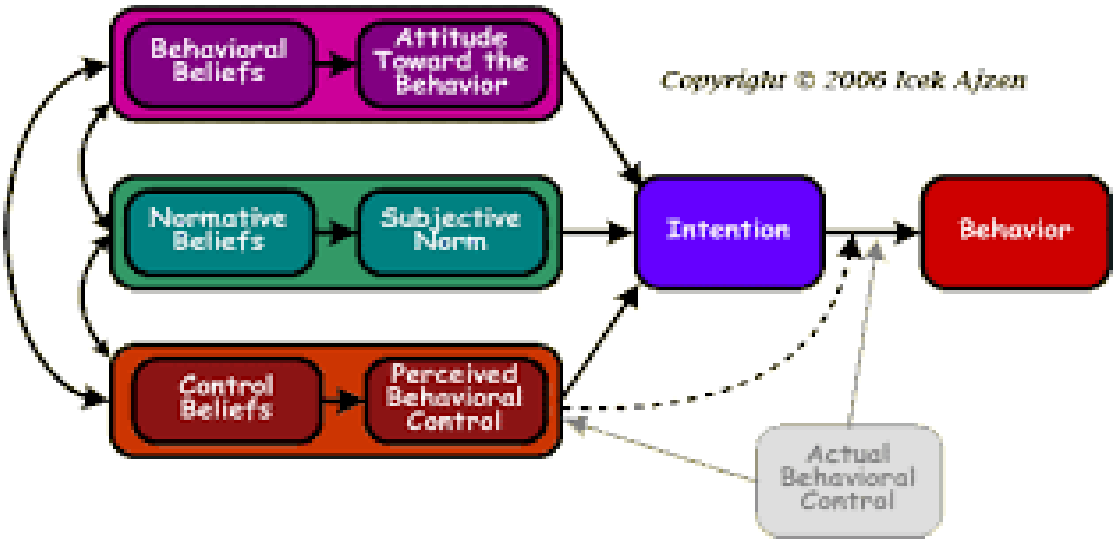

Figure 2. Theory of planned behavior. Adapted from "The Theory of Planned Behavior" by I. Ajzen, 2006, *Organizational Behavior and Human Decision Processes, 50*(2)179-211.

TPB has proven to be very useful in research. According to Ajzen (1991) and Godin and Kok (1996), the theory has shown good utility in studies on human behavior. Several researchers have used the theory in their breastfeeding studies (Lawton, Ashley, Dawson, Waiblinger & Conner, 2012; Walsh et al.2015). The theory has assisted these researchers in identifying a combination of influencing factors that impact the attitude of mothers towards breastfeeding. Specifically, TPB was used in qualitative research involving first-time urban Australian mothers and their decision-making processes regarding exclusive breastfeeding. In that research, Walsh et al. (2015) discovered that participants believed that breastfed babies were smaller and in need of additional caloric support from foods other than breast milk. First-time mothers abandoned the WHO breastfeeding guidelines and introduced weaning ahead of 6 months (Walsh et al., 2015).

This poor compliance with the WHO breastfeeding guidelines was also reflected in the research findings of Lawton, Ashley, and Shob (2012). Moreover, the authors concluded that stronger beliefs about breastfeeding during pregnancy—that the behavior is pleasant, enjoyable, and convenient—made it possible for mothers to maintain breastfeeding. These conclusions provide support for the TPB's usefulness in exploring the perceptions of first-time mothers towards breastfeeding.

Literature Review

The determinants of exclusive breastfeeding of infants as recommended by the WHO (2016) rest on a mother's perception of the behavior of breastfeeding. Perception, according to Rao and Narayana (1998), is the central basis for human behavior, and is influenced by the attitudes of the individual. A mother's perceptions are impacted by her belief system, which are formed through direct experiences, inferences, and information from outside sources inclusive of media, relatives, and friends (Fishbein & Ajzen, 1975). Perception is also influenced by the views of significant others such as close family members— e.g. a spouse or mother. Consequently, three variables from the literature will be examined: the benefits, facilitators, and barriers to breastfeeding as they impact the perceptions and attitudes of first-time mothers towards the behavior. Knowledge of the benefits of breastfeeding – when gathered from first-time mothers through a combination of outside sources, direct experiences, and inferences made through education, public policies, and other potential support mechanisms – impacts women's perceptions toward breastfeeding. This, by extension, shapes their decision to engage/not engage in exclusive breastfeeding. Researchers have shown that continuous breastfeeding is impacted by

general knowledge of benefits and support from others (Dunn, Kalich, Hennin, & Fedrizzi, 2015; Inoue, Nurs, Binns, Katsuki & Ouchi, 2013; Walsh, Pincombe & Henderson, 2011). Additionally, barriers such as returning to work soon after the infant's birth can hinder exclusive breastfeeding and impact a mother's perception and attitude. The resulting inferences made from her direct experience, information, and education gained from sources such as public health personnel, informed in part by public policy, will also shape behavior.

Benefits of Breastfeeding

Optimal Nutritional Value

Breast milk has all the nutritional requirements for a young infant. In many instances, this message features at varying levels in pre- and post-natal wellness visits for expecting and new mothers at health facilities. According to UNICEF (2015); Haile and Biadgilign (2015); and Daly, Pollard, Phillips, & Binns (2014), child survival is significantly enhanced through exclusive breastfeeding due to the composition of the fluid. The first fluid produced by mothers after delivery is colostrum. It contains sodium, chloride, and magnesium and low levels of potassium and calcium (Ballard & Morrow 2013). Colostrum is described as immunologic based on its rich content of secretory immunoglobulin, lactoferrin, and leukocytes. Mature breast milk, which occurs by 2 to 6 weeks postpartum, contains approximately 0.9 to 1.2 g/dL of protein, 3.2 to 3.6 g/dL of fat, and 6.7 to 7.8 g/dL of lactose (Ballard & Morrow 2013). There are subtle nutritional changes in breast milk. It varies among feedings, (e.g., milk fat content is lower in night and morning feedings compared to afternoon or evening feedings), across lactation

periods, and between mothers based on dietary intake and body composition (Ballard & Morrow 2013). According to Bobinski, Mikulska1, Mojska, & Simon (2013), fetal malformation alters the composition of milk, which the authors argue is probably related to the child's nutritional needs. However, the overall superior nutritional content of breast milk is maintained across populations (Ballard & Morrow 2013). The element of non-standardization, the hundreds of thousands of distinct bioactive molecules present in breast milk, uniquely positions it as being of significant nutritional value for rapidly growing infants and their varying nutritional demands.

Breast milk is dynamic, but its nutritional contribution to infant survival is indisputable. Jaldin, Pinheiro, Santos, and Muniz (2013) have reported that breast milk is nutritionally balanced and sound. UNICEF (2016) reported that breast milk is free of chemicals, temperature-controlled, and adjusts to meet the nutritional and energy requirements of the growing child. Consequently, infants, particularly those in low to middle income countries, are protected from death and disease through exclusive breastfeeding (UNICEF, 2015). Because infant mortality can vary among and within countries because of poverty, maternal education, and access to adequate housing and quality health care, breastfeeding offers infants immeasurable protection from these social conditions. In fact, breast milk offers such protection that Victora et al. (2003) argued that in many ways breastfeeding is a great equalizer, benefitting all children, but more so for those that face the greatest risk for mortality and morbidity. The nutritional value an infant receives from 6 months of exclusive breastfeeding significantly reduces the risk of sickness and death.

During the first few months of life, breast milk makes a fundamental difference. Researchers such as Marques et al. (2015) have indicated that exclusive breastfeeding helps children achieve the growth parameters set by the WHO and the American Academy of Pediatrics. Exclusive breastfeeding conferred significant benefits on height and weight scores and was associated with a lower probability of stunting, wasting, and disease (Haschke et al., 2013). For low-birth-weight infants, breast milk is also the preferred nutrition, with some fortification of additional protein and minerals to enhance the caloric content. Breast milk is the optimal nutrition for infants in the first 6 months of life and, beyond that, when supplemented by other foods that are appropriately nutritious.

Childhood Protection Against Mortality and Morbidity

The short-term protective health benefits of exclusively breastfeeding infants have been extensively researched and documented to help promote its practice. According to Haile and Biadgilign (2015), exclusive breastfeeding reduces the occurrences of childhood diseases such as diarrhea, fever, and respiratory illnesses. An infant's immune system is activated by the chemical composition of breast milk (Ballard & Morrow 2013). Breast milk contains antibodies, enzymes, and cytokines that fight infection, as well as probiotics that are beneficial for the development of the gastrointestinal track. Horta, de Mola and Victora (2015) argued that breast milk also protects from allergies and lowers the odds of type 2 diabetes. It is said, as well, to prevent high cholesterol issues in adults, though this has been debated (Horta et al., 2015). Breast milk also has inflammation fighting properties.

Research is still ongoing on the dynamics of breast milk and its protective properties (Bobinski, Mikulska1, Mojska, & Simon, 2013). There is, however, significant evidence of the protection offered by breastfeeding against infant deaths from infectious diseases. A cohort study in Brazil revealed that, compared to children who are exclusively breastfed, non-breastfed children have 14 times the risk of dying from diarrhea, 3.6 times the risk of dying from pneumonia, and 2.5 times the risk of dying from other infections (Victora et al., 2015). This protection of exclusive breastfeeding against infectious disease is consistent with many global studies (Ballard & Morrow 2013). Infants are born with low immunity and rely on their mother's antibodies, excreted through breast milk, to fight pathogens. However, among mothers infected with HIV 1, breastfeeding can facilitate transmission of the virus.

The impact of breastfeeding on childhood diseases varies from population to population as well as within populations, specifically as it relates to mortality from diarrhea (Bener, Ehlayel, & Abdulrahman 2011). For example, gastroenteritis may be more of an issue for developing countries where water quality and sanitation are a challenge (UNICEF, 2015). In such instances poorly washed and sterilized feeding bottles used for formula feeding can expose babies to bacteria that cause diarrhea and related illnesses. Notwithstanding, it is not automatic that a non-exclusively breastfed child will become sick or die. The experiences of infants who are not exclusively breastfed differ based on several socioeconomic factors. This potential for variation can create ambivalence towards breastfeeding by first-time mothers. Nevertheless, researchers including Victora et al. (2016) maintain that breastfeeding is key to an

infant's health. Researchers such as Black, Victora, Walker, and the Maternal and Child Nutrition Study Group (2013) noted that exclusive breastfeeding could save the lives of 800,000 children every year. Bartick and Reinhold (2010) amplified the argument when they showed that even in the developed country of the United States, more than 900 infants could be saved if 90% of mothers exclusively breastfed for 6 months. The inherent lifesaving potentials of exclusive breastfeeding are significant for both rich and poor nations.

The researchers who have challenged the impact of exclusive breastfeeding on infant health and disease-protection argue that some of the benefits are inconclusive. For example, Matheson, Allen, and Tang (2012) have highlighted inconsistences in research as it relates to the association between breastfeeding, and respiratory and skin issues. They cite methodological issues such as variations in the definition of breastfeeding and inadequate adjustments for confounding factors. They call for caution in the interpretation of results (Matheson et al., 2012). However, Strong and Lee (2014), while acknowledging the methodological challenges, including sample size and recall bias in retrospective data collection, emphasize that the benefits of breastfeeding cannot be dismissed–especially when discussing conflicting studies on its obesity-fighting properties. Notwithstanding, these contradictions filter into the general community through the media and by word of mouth. Many first-time mothers worldwide have access to electronic media and the internet. This contradictory information on exclusive breastfeeding has the potential to create indifference towards the behavior. The results of this indifference are most likely to be a level of unresponsiveness to the

recommendations of the WHO and UNICIEF to feed babies only breast milk for the first 6 months of life.

Obesity Protection

Although there is debate about the exact nature of the association between breastfeeding and infant weight, given the mortality and morbidity threats posed by obesity, there appears to be more value in promoting exclusive breastfeeding than not. According to Moss and Yeaton (2014), Moss and William (2013), and McCrory and Layte (2012), an infant's healthy weight status is affected by early infant nutrition. This is not surprising considering Reyes et al. (2014) concluded that exclusively breastfeeding babies learn to self-regulate their food consumption early. Babies who are exclusively breastfed learn to stop feeding when they are full. According to Li, Magadia, Fein, and Grummer-Strawn (2012), breastfeeding mothers were able to adequately interpret and read infant satiety cues, unlike caregivers who were bottle feeding infants – even when feeding with human milk. Li et al. argued that as a result, bottle feeders gain more weight than those at the breast. Horta et al. (2015), in their analysis of 37 recent publications and a meta-analysis which included 105 studies, concluded that breastfed babies were less likely to be classified as obese/overweight. They concluded further that the positive association between breastfeeding and healthy weight in children was slightly stronger in studies that reported on exclusive breastfeeding and weaker in studies on children that were never breastfed. This protection provided by breastfeeding against obesity is worthy of further exploration. In short, McCrory and Layte found evidence supporting the theory that there is a positive association between exclusive breastfeeding and healthy body

weight well into adolescence. While some researchers have proven that mothers who exclusively breastfeed their infants are reducing their risk of becoming overweight, other researchers are quick to highlight that the issues of breastfeeding and obesity are complex and in need of further research. Notwithstanding, they do not discount the benefits of breastfeeding. For example, McCrory and Layte (2012) have shown that the duration of breastfeeding is inversely associated with risk of becoming overweight. They argue that each month of breastfeeding reduces the risk of obesity by nearly 4%. Similar support also comes from Strong et al. (2014), and a U.S. based research covering ages birth to four and using data from the dietary survey entitled Feeding Infants and Toddlers (Saavedra, Deming, Dattilo, & Reidy 2013). Notwithstanding, some researchers including Verret-Chalifour et al. (2015) and Vehapoglu et al. (2014) concluded that children's Body Mass Index were predicated on the current Body Mass Index of the mother. While the issue of the link between exclusive breastfeeding and obesity remains inconclusive, Strong et al. advocate against waiting for a complete understanding, as consistent findings support the positive contribution of breastfeeding to healthy weight status. Also, the contribution of breastfeeding towards reduced healthcare costs from chronic non-communicable diseases due to lower obesity rates presents a significant argument to promote breastfeeding as tool to fight obesity. Studies continue to show that breastfed babies are protected from non-communicable diseases such as type 2 diabetes (Horta et al., 2015).

Cognitive Benefits

There are other long-term benefits to be derived from exclusive breastfeeding, into adulthood. These benefits stem from the healthy development of the brain. According to Papp (2013), there is a well-documented association between breastfeeding and cognitive function, motor skills, and socioemotional development. Victora et al. (2015) have also presented similar positive outcomes for IQ, educational attainment, and income into adulthood. A prospective, population-based birth cohort study of newborns from 1982 forward in Pelotas, Brazil by Victora et al. concluded that breastfeeding is associated with enhanced educational attainment and income in adulthood 30 years later. Victora et al. argued that the results are noteworthy given that no strong social patterning of breastfeeding exists in that community to serve as strong confounders or influencing variable. They noted as well that these findings are consistent with a systemic literature review, including several observational studies and two randomized trials, which showed a strong causal effect between breastfeeding and performance in intelligence tests taken during childhood. Breastfeeding also has many benefits for mothers, including mental and emotional protections.

Exclusive breastfeeding has a calming effect on mother and child. This impacts both physical and mental health. According to UNICEF (2016), the emotional connection between mother and child is made stable by the release of oxytocin from the brain during breastfeeding. It promotes a powerful physical closeness between mother and child and reduces stress levels. This in turn reduces maternal anxiety levels, which can be elevated with a newborn.

Maternal Health Benefits

In addition to infants, breastfeeding also provides maternal protection from morbidity and mortality. Breastfeeding reduces the mother's risk of breast and ovarian cancer (Victora et al., 2016). Breastfeeding also supports bone density by protecting against hip fractures (UNICIEF, 2016). Breastfeeding causes uterine contraction, returning the womb to its pre-pregnancy (UNICEF, 20016). Exclusively breastfeeding infants also promotes maternal weight loss and protects against diabetes and postmenopausal cardiovascular diseases (UNICEF, 20016). Lactation positively impacts the spacing of births as it functions as a natural contraceptive (UNICEF, 2016). Based on the sum of benefits identified by researchers such as Victora et al. (2016), exclusive breastfeeding enhances the overall wellbeing of both mother and child.

Facilitators of Breastfeeding

Baby Friendly Hospital Initiative

Mothers and their infants can share a great physical closeness through breastfeeding, but policies must be in place at hospitals to facilitate that physical bonding. UNICEF (2016) argued that skin-to-skin contact between mother and child just after birth is associated with improved exclusive breastfeeding rates. Therefore WHO (2015) and UNICEF (2016) encourage joint rooming of mothers and infants after delivery. This idea of joint rooming is one of the elements of the 10 Step Baby Friendly Hospitals Initiative (BFHI). This initiative promotes exclusive breastfeeding and requires compliant hospitals to focus on several measures:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within one half-hour of birth.
5. Show mothers how to breastfeed and maintain lactation, even if they could be separated from their infants.
6. Give newborn infants no food or drink other than breast milk, unless medically indicated.
7. Practice rooming in—that is, allow mothers and infants to remain together 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic (UNICEF, 2016).

Countries that implement the 10 Step BFHI in hospitals have reported surges in exclusive breastfeeding rates. Cuba is one of the countries where hospitals adhere to the 10 Step BFHI and have recorded high exclusive breastfeeding rates. UNICEF (2016) reported that the initiative operates in 49 of Cuba's 56 hospitals. The results have surpassed the global exclusive breastfeeding average of under 50%. The rate of exclusive

breastfeeding at 4 months in Cuba has almost tripled in 6 years—from 25% in 1990 to 72% in 1996 (UNICEF, 2016).

Global research has consistently supported the conclusion that adherence to the BFHI Ten Steps has a positive impact on feeding outcomes in general and specifically on exclusive breastfeeding. According to a systematic review by Pérez-Escamilla, Martinez, and Segura-Pérez (2016), 55 of 58 studies supported this conclusion and none suggested a negative impact on breastfeeding outcomes. According to Lutter et al. (1997), mothers delivering at hospitals with robust step 10 implementation of BFHI in Santos, Brazil had significantly higher exclusive breastfeeding success compared to mothers delivering in a hospital with only partial implementation of the Ten Steps. A more recent national Brazilian survey found that being born in a Baby Friendly Hospital was associated with longer exclusive breastfeeding (Venancio et al., 2012). In a study from Pelotas, Brazil, Silva et al. (2008) found that infants born in a Baby Friendly Hospital were more likely to be exclusively breastfed at 1 month compared with their counterparts born in non-Baby Friendly Hospitals. Although Silva et al. noted this association was only marginally significant, it is noteworthy. Similar successes were also recorded among Chilean mothers utilizing a hospital with a BFHI status. These Chilean mothers had higher in-hospital exclusive breastfeeding rates and a lower likelihood of weaning from the breast by 6 months compared with their counterparts delivering before BFHI implementation (Valdes et al., 1993). According to a study conducted in Arizona, United States by Wright et al. (1996), BFHI implementation was associated with greater likelihood of

breastfeeding initiation within 1 hour of birth and lower likelihood of in-hospital formula supplementation.

Implementing, solidifying, and revitalizing the BFHI offers an important opportunity to strengthen breastfeeding in the Caribbean and potentially increase exclusive breastfeeding rates. BFHI also works well in association with postnatal support. Based on randomized controlled trials in Brazil, Coutinho et al. (2005) found that strengthening step 10 of the BFHI by adding home peer counselling had a significant positive impact on exclusive breastfeeding rates among 0 to 6-month-old infants. Conversely, poor and inadequate implementation of the 10-step program does not facilitate high levels of exclusive breastfeeding.

A national U.S. retrospective phone and internet survey found that women delivering in hospitals that followed six to seven steps (vs. none to one) of the BFHI were more likely to meet their late pregnancy exclusive breastfeeding intentions (Declercq et al., 2009). Among newborns the specific steps associated with meeting prenatal exclusive breastfeeding intentions were as follows: help with breastfeeding initiation, no in-hospital formula/water supplementation, community resources, and no pacifiers. With 89% of births in Latin America and the Caribbean taking place in health facilities, Lutter (2016) has argued that BFHI are well placed to promote exclusive breastfeeding rates in the region.

BFHI certification requires rigorous measures be put in place before it can be awarded to a hospital. According to Lutter (2016), resistance to change and lack of trained human resources are the reasons for low numbers of BFHI in the English-

speaking hospitals in the Caribbean. Figures up to 2013 show limited BFHI awards in the Caribbean. The number of awards are as follows: Jamaica 10, St. Vincent and the Grenadines 1, Trinidad and Tobago 1, Barbados, 1, and Dominica 1 (Lutter, 2016). Antigua and Barbuda have not acquired BFHI status (Lutter, 2016). The literature does not indicate if Antigua and Barbuda have been seeking BFHI status. According to Lutter, strong political will, financial commitment, and human resource allocation is required to facilitate change and a movement towards acquiring and robustly implementing the BFHI throughout the Caribbean. Moreover, Lutter is of the view that this political commitment to breastfeeding is the cause of Chile's successful growth in exclusive breastfeeding rates from 33% in 1992 to 72% in 2013. The positive impact on child health makes such investments worthy, and the higher prevalence of exclusive breastfeeding rates among countries in Latin America bears testimony to their successes.

Global Initiatives

There are many initiatives spearheaded by the WHO and UNICIEF to promote exclusive breastfeeding globally. A major measure is the International Code of Marketing of Breast Milk Substitutes passed by the Health Assembly Resolutions in 1981. It was strengthened and further defined in successive years. These international resolutions are critical for ensuring a global environment that supports proper infant and young child feeding (WHO, 2013). Thirty years later, the International Code of Marketing of Breast Milk Substitutes is relevant today, in that it provides countries with practical guidelines to promote exclusive breastfeeding, incrementally (WHO, 2013). For example, countries may begin by focusing on the labeling of infant formula products and

ensuring appropriate language on the product labels in line with WHO's recommendations for infant feeding prior to 6 months. Countries may even wish to focus on ensuring that hospitals do not advertise formula. The Code remains a framework for change and a model for countries like Antigua and Barbuda to promote exclusive breastfeeding.

The Code regulates the marketing of breast milk substitutes, inclusive of bottles and teats (UNICEF, 2005). Specifically, the provisions indicate that there should be no point-of-sale advertising, giving of samples, or any other promotion to induce sales directly to the consumer at the retail level, such as special displays, discount coupons, premiums, special sales, loss-leaders, and tie-in sales (UNICEF, 2005). Another provision of the Code is the prohibition of free or low-cost supplies of breast milk substitutes and materials/gifts to health workers and health facilities (UNICEF, 2005). The Code is legally unenforceable and depends on individual countries for success. However, it provides a framework to allow accurate information on infant feeding to be presented to mothers without undue commercial pressure from manufacturers of artificial baby foods (UNICEF, 2005). This lessens the possibility of parents mistakenly believing formula feeding is as good as breastfeeding.

Countries implementing the Code have been able to introduce strategies that strongly facilitate exclusive breastfeeding. UNICEF (2005) reported that approximately 84 countries have implemented the Code in full or partially. UNICEF has also highlighted the measures taken by Iran, India, and Papua New Guinea towards implementing the Code. According to UNICEF, in Iran, formula is obtained by

prescription only, only generics are available, and there are no brand names on the tins. In India, conspicuous labels indicating that artificial feeding is harmful to babies are placed on the packaging (UNICEF, 2005). In Papua New Guinea, there is strict control on the sale of feeding bottles, cups, teats, and pacifiers (UNICEF, 2005). There is also a ban on advertising these products and breast milk substitutes (UNICEF, 2005). Admittedly, Willumsen (2013) argued that based on a systematic review of the literature education is effective in promoting exclusive breastfeeding. Willumsen's (2013) point holds value based on reports that the imposition of the Code in the UK is necessarily restrictive. Faircloth (2006) reported that there is some loophole in United Kingdom laws supportive of the Code. According to Faircloth, almost two-thirds of parents say they are seeing advertisements for infant formula. UNICEF is actively working with countries worldwide to strengthen legislation and garner interest in the implementation of the Code. The WHO (2016) is also encouraged, noting that ongoing progress is being made in various countries. It should be noted that introducing legislation to support the implementation of the WHO Code does not automatically increase the exclusive breastfeeding rate of a country. A supportive environment with appropriate enforcement mechanism, such as advocacy and monitoring groups, is necessary to bring about the desired results of higher rates of exclusive breastfeeding and infant weaning at the appropriate age (WHO, 2013). Community support and social support, including compliant commercial formula manufacturers, are also essential. The Code presents much opportunity for countries wishing to make breastfeeding a primary feeding option for infants.

Gaps exist in individual countries' legislation in the Caribbean and parts of Latin America, preventing the implementation of the International Code of Marketing of Breast Milk Substitutes. Moreover, there exists a lack of political commitment and advocacy, critical mass of advocates, and knowledge about the Code and its implications (WHO, 2013). Thirty years after its endorsement, only 37 out of 199 countries reporting (19%) have passed laws reflecting all the recommendations of the Code. There has been some progress though promoting breastfeeding. Sixty-nine countries (35%) fully prohibit advertising of breast milk substitutes, 62 (31%) completely prohibit free samples or low-cost supplies, 64 (32%) completely prohibit gifts of any kind from relevant manufacturers to health workers, and 83 (42%) require a message about the superiority of breastfeeding on breast milk substitute labels (WHO, 2013). Only 45 countries (23%) report having a functioning implementation and monitoring system, (WHO, 2013). Twenty-two countries, including Antigua and Barbuda, have provided no information on their status of implementation of the Code (WHO, 2013). Specific to the Americas, only 12 countries have fully implemented the Code. Antigua and Barbuda are not one of them. Countries with weak implementation report low technical capacity, delays, and difficulties in the setting up of national oversight committees or monitoring bodies that would support local Ministries of Health (WHO, 2013). They also noted that there is a need to obtain the support of all relevant ministries to prohibit advertising and sales promotions of substitutes. Poor policies on breastfeeding means first-time mothers do not have an adequate context in which to make appropriate inferences on exclusive breastfeeding. Of note, the United States is one of a few countries that has not taken steps to implement the

International Code and, to some extent, this omission arguably does not provide a fully enabling environment for first time mothers in the United States (UNICEF, 2011). The US's resistance to the Code could be due to its anti-capitalist characteristics based on its restrictive nature towards certain businesses.

Family Support

Researchers have argued that the extended families, especially grandmothers of infants, are significantly influential in infant feeding decision of mothers. It is not farfetched to expect first-time mothers to seek their mother's views on exclusive breastfeeding. Historically, researchers such as Bocanegra (1998) have asserted the influence of the infants' grandmother in breastfeeding decisions and reported that approximately half of the women in their study indicated that their mothers or mothers-in-law were a significant source of advice on infant feeding. The trend is preserved in a recent research by Agunbiade and Ogunleyein (2012) where close to half of the Nigerian mothers participating in their research credited their infant's grandmother with encouraging breastfeeding. Additionally, 84% of mothers credit their mothers as an influencing factor in their breastfeeding decision (Agunbiade and Ogunleyein, 2012). Generally, the researchers noted that while the grandmothers did not emphasize exclusive breastfeeding, they did view breastfeeding as necessary for an infant's overall health and vital to prompting the bond between mother and child. When grandmothers shared their confidence in breastfeeding and their practical knowledge, this actively increased the likelihood of the daughter breastfeeding. However, if a grandmother did not breastfeed, the encouragement would be towards formula feeding (Susin, Giugliani. & Kummer,

2005). Mothers reported that grandmothers, even those who had breastfed, tended to advocate early weaning. They advocated the use of cereal to help infants sleep through the night, (Grassley & Eschiti, 2008).

Moreover, Susin et al. (2005) concluded that the abandonment of exclusive breastfeeding 4 weeks postpartum was strongly linked with daily contact with maternal grandmothers. Agunbiade and Ogunleyein (2012) also noted that some infants' grandmothers pressured their daughters to stop exclusively breastfeeding prematurely. These grandmothers recommended early weaning with the introduction of solids and water along with breastfeeding. Early weaning, these grandmothers argued, supported rapid child growth to allow mothers to resume work outside the home (Agunbiade & Ogunleyein, 2012). Susiloretni, Hadi, Prabandari, Soenarto, and Wilopo (2015) also confirmed that grandmothers negatively impacted exclusive breastfeeding and encouraged the use of foods other than breast milk. A more recent study conducted by Negin, Coffman, Vizintin, and Raynes-Greenow (2016) which reviewed existing research on breastfeeding, affirmed the capacity of grandmothers to influence exclusive breastfeeding. Moreover, they concluded that the negative views of grandmothers reduced the likelihood of breastfeeding by 70%, while positive views encouraged breastfeeding by 12%. Arguably, in instances where mothers do not want to breastfeed, the negative view of the infant's grandmother toward breastfeeding would be highly influential.

Not all new mothers rely on their mothers to decide whether to engage in exclusive breastfeeding. However, for some mothers, lack of maternal support can

undermine the behavior. Some grandmothers believe new mothers should pay more attention to recuperating from childbirth and getting more sleep instead of being engaged in a seemingly demanding process of exclusive breastfeeding (Grassley & Eschiti, 2008). Moreover, the Grassley and Eschiti (2008) study, which explored mothers' perceptions of grandmothers' breastfeeding, noted that the impact of grandparents on breastfeeding depended on quality of the relationship between the grandmother and new mother. Grassley and Eschiti (2008) argued that grandmothers expressed their interest in opportunities to learn more about breastfeeding and how to support new mothers who were breastfeeding. According to Negin et al. (2016), strategies to promote exclusive breastfeeding should also target grandmothers.

Many researchers are convinced that a mother's social support system influences all breastfeeding decisions. Encouragement from the family to exclusively breastfeed increases the inclination a first-time mother might feel about breastfeeding her infant. In some city communities, family composition does not lend itself to the generational transfer of breastfeeding information and support, since the extended family that depends on this kind of transfer no longer lives together (Chang, Rowe, & Goopy 2014). In the case of Taiwan, for example, where family support was not readily available for many mothers, some mothers are choosing to spend their first 3-4 postpartum weeks at care centers dedicated to helping and supporting their decision to breastfeed. In other families, the information being shared was focused on formula and bottle feeding (Chang, Rowe, & Goopy 2014). Mothers who do not have the support of family or a care center would most likely gravitate to formula feeding infants.

A woman's spouse or the infant's father is also part of the social system of support that influences infant feeding decisions and a mother's ability to cope with breastfeeding. According to Datta, Graham, and Wellings (2012), some fathers believe their role is to support whatever infant feeding decision a mother makes. However, Sherriff and Hall (2011) have indicated that fathers want to play a greater role, although the structure of the health care system does not facilitate that interest. Based on a U.K.-grounded study involving in-depth interviews with eight fathers, it was noted that fathers' involvement was downplayed and not facilitated by health care providers. Fathers report not being able to access antenatal support owing to lack of engagement and poor scheduling of these services (Sherriff & Hall, 2011). Additionally, breastfeeding interventions should be designed in a manner that draws in a woman's social support system, including the infant's father and other family members. Such interventions should be culturally sensitive and motivate mothers to establish a breastfeeding peer support network (Faridvand, Mirghafourvand, Malakouti, & Mohammad-Alizadeh-Charandabi, 2017). Family support encourages positive perceptions toward exclusive breastfeeding. Moreover, Hongo, Nanishi, Shibanuma, and Jimba (2015) have argued that multiple layers of support to mothers provides support to breastfeeding. They concluded that breastfeeding without formula at 1 month was positively associated with the number of persons in social contact supporting breastfeeding

Support From Hospital Staff

First-time mothers need the support of health care officials to achieve success in exclusive breastfeeding. Researchers such as Ma and Magnus (2012) argued that first-

time mothers are more likely to exclusively breastfeed when supported by hospital staff and when breastfeeding was practiced in the hospital. Moreover, mothers who received the support of nurses and pediatricians, and who benefited from hospital staff counseling services, have a more positive attitude toward breastfeeding. Phillip (2011) found that first-time mothers see hospital staff supports as crucial to breastfeeding success. According to Phillip, mothers considered hands-on help, patience, and the nurse's presence during a feeding as essential components of a successful experience. First-time mothers also saw the involvement of hospital staff as being helpful in calming anxieties and increasing self-efficacy (Phillip, 2011). Moreover, Shifraw et al. (2015) found an association with antenatal and postnatal counseling and better exclusive breastfeeding practice. These findings by the researchers accentuate the crucial role public health officials play in impacting the perception and attitude of first-time mothers towards exclusive breastfeeding. There are some hurdles, however. Some mothers have argued that not all nurses are knowledgeable about breastfeeding and some nurses believe they should not influence a mother's feeding choice. Nurses tend to support mothers who have already decided on exclusive breastfeeding. According to Radzyminski and Callister (2015), some nurses do not try to influence undecided mothers or mothers who decide to use formula, arguing they do not want mothers to feel ashamed of their choice to bottle feed. These authors also point out that nurses' knowledge about infant feeding tends to be deficient, specifically in areas such as lactation physiology and glucose feedings, since mothers report that nurses appear uninformed and lacking in support and that their advice appears superficial and inadequate. Maternal perceptions of negative attitudes of hospital

staff in this study were found to be predictive of breastfeeding failure at 6 weeks postpartum (Radzyminski & Callister, 2015).

As stated in the previous section, the support received by a first-time mother from family members and friends after being discharged from hospital impacts perception and attitude toward exclusive breastfeeding. This includes the grandparents of infants and the mother's mothers-in-law, who can be crucial in creating and maintaining positive attitudes postpartum (Walsh et al., 2011). Mothers whose babies have not adequately latched on to the breast, and who are therefore at risk of not being breastfed sufficiently, need the most support (Walsh et al., 2011). Peer support via face-to-face conversations or telephone can help the nursing mother on her breastfeeding journey (Fu et al., 2014).

Social media such as Facebook is also useful in supporting first-time mothers. According to Jolly, Ingram, Khan, Deeks, Freemantle, and MacArthur (2012), such peer support significantly promotes exclusive breastfeeding. Renfrew, McCormick, Wade, Quinn, and Dowswell (2012) and Thomson, Balaam, and Hymers (2012) found a positive association between all forms of extra support on exclusive breastfeeding. First-time mothers encourage such support; many wish to talk about and share their breastfeeding experience with a view to improving and encouraging their experiences and having their experiences validated (Phillips, 2011).

Mother's Self Efficacy

Maternal breastfeeding self-efficacy is a mother's perceived ability to breastfeed. A mother's confidence in her capacity to feed her baby has been shown to be a predictor of exclusive breastfeeding. In a study to determine the breastfeeding self-efficacy of

Turkish mothers between 0-3 months postpartum, as well as, the affecting factors, Nursan, Dilek, and Sevin (2014) found that mothers who gave birth by caesarean section had greater self-efficacy than mothers who delivered vaginally. Mothers who received training in breastfeeding had higher average scores than mothers who did not. In addition, certain maternal personality traits positively impact a first-time mother's attitude towards exclusive breastfeeding. Mothers who are extroverts, emotionally stable, and conscientious were significantly more likely to engage in breastfeeding. Strong maternal confidence has been shown to overshadow vulnerabilities and positively impact a mother's breastfeeding success. Research in Nepal by Adhikari et al. (2014) observed better breastfeeding compliance rates for mature women and women of higher education. Such mothers may have developed greater self-confidence with age and development. Overall, the more confident first-time mothers feel about the ability to breastfeed adequately, the more positive their attitudes towards breastfeeding.

Barriers to Breastfeeding

First-time mothers worldwide face private challenges that prevent them from engaging in exclusive breastfeeding. These challenges can also impact perceptions and attitudes towards the behavior. At the individual level, Brown et al. (2014) and Phillips (2011) argue that physiological experiences and difficulties breastfeeding impact perceptions and attitudes towards breastfeeding. Ultimately, exclusive breastfeeding duration and weaning was impacted by physical discomfort such as nipple pain, which undermined a mother's confidence and, by extension, her attitude towards exclusive breastfeeding (Williamson, Leeming, Lyttle, & Johnson 2012). The 500 participants in

Williamson et al.'s (2012) research reported difficulties interpreting the pain they experienced during feeding. These mothers reported that the pain they experienced threatened their emerging maternal identities (Williamson et al., 2012). They also reported that those emotions often fluctuated considerably from feed to feed and were not permanent.

Concern with milk supply, mothers' modesty when breastfeeding in front of others, and lack of knowledge (Dunn et al., 2015) are among some of the inhibitors of exclusive breastfeeding. Lack of time, poor public acceptability, distortion of breasts, coping with lifestyle changes, shifting priorities, difficulty with role transition, and diminished breastfeeding self-confidence (Phillips, 2011) are other challenges. When mothers encounter difficulties with breastfeeding, inclusive of their infant's failure to latch on adequately, mothers may cease breastfeeding. This leads to early weaning.

Depression

Poor self-esteem, negative mood, and anxiety may lead mothers to perceive hurdles with breastfeeding as overwhelming. Brown (2014) noted that mothers who are introverted or have high levels of anxiety are less likely to engage in exclusive breastfeeding; these traits tend to be associated with formula feeding. Moreover, mothers experiencing postpartum depression are more likely to wean their infants early (de Jager, Skouteris, Broadbent, Amir, & Mellor, 2013; Watkins, Meltzer-Brody, Zolnoun, & Stuebe, 2011). According to O'Hara, Zekoski, Philipps, and Wright (1990), maternal depression – which some researchers argue arises from the stress of childbirth and early care of an infant – has a prevalence rate of 10-15% among European and U.S. women 2-3

months post postpartum. Some researchers present maternal depression within a socio-cultural, religious, and spiritual context when describing the experiences of Black Caribbean women with the condition (Davy 2013). While not presenting any statistics, Jackson-Best (2016) argued that maternal depression was high in the Caribbean. Studies based in Brazil have shown postpartum depression prevalence rates ranging from 12% to 37% (Da-Silva et al., 1998). A 2004 cohort study by Hasselman, Weneck, and Silvia (2008) with 429 Brazilian families found a positive association between interruption of exclusive breastfeeding and postpartum depression. Hasselman et al. (2008) found that infants whose mother was experiencing postpartum depression were at approximately twice the risk of early interruption of breastfeeding in the first few days after birth and in the following 2 months, even after accounting for other contributing factors. However, Falceto, Giugliani, and Fernandes (2004) concluded from their Brazilian, case-control research that there was no link between maternal mental health and breastfeeding at 4 months. Mental health challenges have the potential to undermine self-esteem and exacerbate breastfeeding difficulties. Silva et al., (2017) concluded, based on their study conducted in Brazil, that maternal depressive symptoms placed exclusive breastfeeding at significant risk. On balance, the data suggested that the birthing process itself – and especially a difficult birth – is an important factor in postpartum depression, and depression is an important factor in the prevalence and duration of breast-feeding.

Culture

Women's perceptions, choices, and patterns of infant feeding are influenced by the belief systems within the context in which they live. Researchers such as Gallegos,

Vicca, and Streiner (2015) looked at migrant African populations living in Australia and concluded that the emerging breastfeeding practice combined African and Australians traditions. They also noted the changing perceptions towards breastfeeding. The research participants saw breastfeeding as a practice of the poor and, having become more affluent in Australia, saw formula as an aspirational infant feeding option. Moreover, in some cultures colostrum, the first milk the breasts produce during pregnancy, was considered bad and was not fed to infants, resulting in delays in breastfeeding (Gallegos et al., 2015; Zaidi, 2014). In some cultures, sugar water was introduced, effectively eliminating exclusive breastfeeding and accelerating formula feeding. Additionally, in some cultures, breastfeeding in public was considered unacceptable. For example, Scottish and Italian mothers are significantly less likely than Swedish mothers to breastfeed in public (Scott et al., 2015). This practice can impact breastfeeding on demand and arguably exclusive breastfeeding. Scott et al. (2015) argued that disapproval of public breastfeeding was conducive to early weaning and concluded that perceived social norms have the potential to be a strong influence on breastfeeding outcomes, even more so than a woman's attitude and knowledge.

The relationship between breastfeeding and culture can defy generalizations. Scott et al. (2015) noted variations in cultural practices within a single country, highlighting the complexities of the impact of culture. The impact of culture on exclusive breastfeeding, however, cannot be overlooked. Marchione (1980) reviewed the exclusive breastfeeding culture of the Caribbean and noted the systematic erosion of a culture of exclusive breastfeeding transported to the Caribbean by African mothers. Plantation owners

believed excessive suckling by slave infants was a form of contraception, which limited the growth of their slave population, hampering their economic growth. They therefore promoted early weaning with the early use of diluted paps as breast milk substitutes. That emerging culture appeared to support the low prevalence of exclusive breastfeeding found in Antigua and Barbuda, and the wider Caribbean, today.

Breastfeeding behavior cannot be static. It can change based on the mother's current situation. It was the norm for Caribbean women who were migrants in New York and enrolled in the Women, Infants, and Children (WIC) nutrition program to formula feed (Cricco-Lizza, 2005). This was corroborated by Li et al. (2005), who found that breastfeeding was less common among children who were beneficiaries of the US Food and Nutrition Women, Infants, and Children (WIC) programme in the first year of life. According to Oliveira, Frazão, and Smallwood (2013), WIC is a leading purchaser of formula. In each state, the WIC agency purchases formula at below market prices; in exchange, the manufacturer receives the exclusive right to produce infant formula for the WIC agency of the state. The impact of such a contract undoubtedly means an increase in market share and sales revenue for a formula manufacturer.

The association between WIC and formula feeding may be changing based on a recent announcement by the National WIC Association (NWA) in September 2016, in which it distanced itself from infant formula companies. NWA announced that manufacturers of baby formula can no longer participate in NWA's activities including conferences, nor advertise or sponsor events or hold membership in WIC (NWA, 2016). Notwithstanding, NWA will continue to support mothers who elect to formula feed their

infants because of a health or nutrition need as per one of the eligibility criteria. This latest move by the NWA is supportive of WIC's thrust to be the United States' Go-to Breastfeeding Program (NWA, 2016). The NWA is the educational arm and advocacy voice of WIC's 12,200 agencies, which serves a membership of approximately eight million mothers and young children, (NWA, 2016). While NWA does not create WIC policies, this move may impact the way business is conducted between WIC and formula manufacturers in the future.

In a cross-sectional study of 962 women born predominantly in Latin America and the Caribbean but living in the United States, Bocanegra (1998) found evidence to support the role of culture in shaping attitudes toward breastfeeding. In her study, the women received prenatal care at 10 New York maternity centers where breastfeeding counseling was available, but their breastfeeding behavior did not reflect that counseling; at the time of their postpartum visit. Only 4% of the mothers reported that they exclusively breast-fed, while 55% reported feeding their infants both formula and breast milk, and 41% were exclusively bottle-feeding owing to a perceived insufficiency of breast milk. Many women (90%) started to feed formula at birth or within the first week after delivery (Bocanegra, 1998). In capturing the complexity of cultural impact, Bocanegra noted that increased acculturation of immigrants to American life did not inevitably transform their breastfeeding behavior. That said, foreign born women, particularly those who were less acculturated, were at risk of being influenced by the abundant marketing of infant formula. In the absence of adequate breastfeeding education

immediately postpartum, the risk of being swayed by commercial forces was greater, especially where family support was lacking.

Irrespective of their low exclusive breastfeeding rates, Caribbean women in the diaspora report they come from a background of breastfeeding, but there appears to be a disconnect between that cultural heritage and the practice of exclusive breastfeeding. When rates of exclusive breastfeeding are compared across ethnic groups, Black infants are still the least likely to be breastfed (Li, Darling, Maurice, Barker, & Grummer-Strawn, 2005). The proportion of Black infants who are breastfed exclusively fell to 42.5% at 3 months compared to 63.4% at 7 days postpartum, and then 5.4% at 6 months postpartum (Li et al.,2005). In a qualitative study by Condon et al. (2003) to examine breastfeeding and weaning cultural patterns among Asian, Somali and Caribbean women living in the United Kingdom, all research participants indicated they came from a cultural background of breastfeeding. Despite that, the practice of exclusive breastfeeding was uncommon. Black mothers were introducing water by the time their infants were 2 months of age as a means of getting babies get used to bottle teats. Solids were introduced by 3 months, and by 4 months almost 90 % were giving solids, compared to only 43% of the Asian mothers (Condon et al, 2003). The experiences of research participants differed from what they claimed happened in their native culture. Other studies, including one by Rice (1999), have confirmed that some migrant mothers from cultures with high rates of breastfeeding adopt the dominant infant feeding culture of their host country, while other groups maintain traditional infant feeding traditions. This

is indicative of the complexities of issues relating to breastfeeding and culture; as well as differences among women in their perceptions of breastfeeding as opposed to practice.

Generally, negative feelings towards breastfeeding are not culturally acceptable. Specifically, Williamson, et al. (2012) reported that negative maternal emotions are not in line with the universal cultural dialogue that breastfeeding is natural, trouble-free, and essential to good mothering. This cultural expectation can foster a tension between the lived breastfeeding experiences and its cultural construction (Williamson et al., 2012). Radzyminski and Callister (2015) argued that many mothers may not feel so inclined to seek help in addressing their breastfeeding struggles based on the difference between their actual experiences and cultural expectations related to breastfeeding. In the same vein, first-time mothers who were breastfeeding reported not knowing what questions to ask when seeking help (Phillips, 2011).

Some mothers depend on nurses to provide them with information on breastfeeding instead of seeking books or articles on the subject. However, some nurses are conflicted over exactly what information should be shared with mothers. Such lack of forthright information on breastfeeding challenges serves as a barrier to exclusive breastfeeding. Moreover, Radzyminski and Callister (2015) noted that, while many nurses believe mothers should be told how easy breastfeeding is, which presumably would help foster a positive attitude towards it, other nurses feel it was important for mothers to know that breastfeeding was not as easy as it looks. Sometimes, babies do not automatically take to the breast, and so it may make sense to educate first-time mothers on all potential challenges so that they are fully prepared. Phillips (2011) appeared to

come to the same conclusion; in her phenomenological research with first-time mothers, she determined there was clearly a need for full disclosure of breastfeeding challenges by healthcare professionals.

Breastfeeding and Working Outside the Home

Many mothers report that returning to work presents a serious challenge to their ability to continue to breastfeed exclusively. When returning to work, mothers must leave the infant with a caregiver or at a daycare facility. This separation of mother and child interrupts the routine of breastfeeding on demand and the supply of milk. Radzyminski and Callister (2015) have articulated the disruption maternal employment causes to exclusive breastfeeding. Moreover, Daly et al. (2014) have drawn similar conclusions. In their review of the Health Department of Western Australia triennial nutrition population survey, which covers men and women aged 18-to-64, they noted that women identified returning to work as a primary barrier to exclusive breastfeeding. Globally, a significant percentage of women, an average of 70% of women of reproductive age in some countries, occupy the workforce.

Women can benefit from paid and unpaid maternity leave. However, if there is no pay, many women find it difficult to take the leave. In some countries such as Antigua and Barbuda, the employer pays a portion of the maternity leave and Social Security pays a portion. However, the statutory maternity entitlement of 12 weeks in countries such as Antigua and Barbuda and in Jamaica does not readily facilitate 6 months of exclusive breastfeeding (ILO, 2013). The 18-week and more maternity leave offered in Cuba and Chile have facilitated better exclusive breastfeeding rates (ILO, 2013). In Panama,

Brazil, and Belize, the statutory obligation is to offer 14 to 17 weeks, while in Honduras and Bolivia less than 12 weeks is offered (ILO, 2013). In the United States only federal employees are eligible for up to 13 weeks of maternity leave, unpaid (ILO, 2013). The Family and Medical Leave Act (FMLA) of 1993 guarantees 12 weeks of maternity leave; also, unpaid. Moreover, 70% of countries globally (145 countries) do not meet the ILO Convention No 183 standards of at least 14 weeks maternity leave with two-thirds of salary paid by Social Security (ILO, 2013). In the Caribbean and Latin America, the noncompliance rate with ILO standards is at 87% (ILO, 2013). In some instances, if an employer is flexible, the mother may be able to negotiate a schedule that allows her to take all her maternity leave postpartum, along with any other outstanding paid annual vacation. Oftentimes, additional leave is unpaid, and many mothers cannot afford to stay at home with no income. The pressure to return to work so soon after birth does not support exclusive breastfeeding. Based on research using an Australian population, Cooklin, Rowe, and Fisher (2012) noted that compared to women who were not employed, employed women were significantly less likely to be breastfeeding at 10 months postpartum, that was 59% vs. 33%. This was also confirmed in a Scotland-based research study in which employed first-time mothers were found to be more likely to stop breastfeeding sooner (Skafida, 2012). Employment and early return to work are both factors associated with a shorter duration of breastfeeding (Skafida, 2012). There appears to be incongruence between recommended breastfeeding practices in many countries, including Scotland and the United Kingdom, and the current maternity entitlements

(Skafida, 2012). There is a need for the statutory paid maternity leave period and the required 6 months for exclusive breastfeeding to reflect each other.

There appears to be a lack of appropriate consideration between the conflicting demands of employment and exclusive breastfeeding. Skafida (2012) presents the Swedish model of 13 months of maternity leave with 80% pay as a viable recommendation to support exclusive breastfeeding. In the absence of such lengthy statutory maternity privileges, provisions for a mother to be able to continue to breastfeed her infant upon return to work may be necessary. In countries with a national policy guaranteeing breastfeeding breaks until an infant was at least 6 months old, there were significantly higher rates of exclusive breastfeeding (Heymann, Rauba, & Earleb, 2013). In the absence of adequate paid maternity leave, exclusive breastfeeding is in jeopardy. This is profound, as some mothers may never contemplate exclusively breastfeeding out of fear of not being able to adequately continue upon returning to work. Expressing of milk is an option for working mothers but it can be viewed as time consuming.

Public Policy

Inadequate public health policy and in some instances poor enforcement at the country level can also be viewed as barriers to exclusive breastfeeding. Specifically, more protection is required from formula feeding. For example, it is not uncommon for mothers to be given formula upon being discharged from hospital (Dunn et al., 2015). It is also not uncommon for hospitals to provide formula to newborn infants as a matter of routine (Smith, 2013). Incentives for formula feeding are also intrinsic to health financing arrangements, which allow training and education for health workers to be provided by

formula companies. Having formula so readily available serves as a disincentive to exclusive breastfeeding. Others argue that the WHO/UNICEF Global Strategy for Infant and Young Child Feeding remains weak at the global and individual country level. There is the International Code of 1981 banning the advertisement of breast milk substitutes to pregnant women, mothers, or members of their family; however, the United Nations Convention on the Elimination of All Forms of Discrimination against Women does not give any prominence to breastfeeding (Galtry, 2015). While the right for a mother to formula feed her infant should not be denied, especially as it may be necessary under challenging health circumstances or even upon the death of the mother, it is also necessary for established globally binding agreements and treaties to breastfeeding.

Perhaps sovereign governments are to be blamed for lack of progressive protection of breastfeeding mothers and infants. The Pan American Health Organization, (PAHO) and WHO have been urging governments in the Caribbean and Latin America to effect maternity protection legislation and related processes consistent with the International Labour Organization's Maternity Protection Convention of 2000. That convention, as indicated earlier, calls for at least 14 weeks of paid maternity leave for new mothers, paid breastfeeding breaks, reduced working hours to facilitate breastfeeding, and facilities for breastfeeding in the workplace (ILO, 2016). In the Americas, the Dominican Republic, Belize, Peru, and Cuba have ratified the International Labour Organization's Maternity Protection Convention (2000). In Peru and the Dominican Republic, the convention will come into force in 2016 (ILO, 2016). Antigua is not a signatory to the ILO Maternity Protection Convention. Although favorable, there

are no penalties for countries who are not signatories to international treaties or conventions, or even for signing to and delaying implementation. The criticism in the court of public opinion in this case is potentially the only form of backlash.

Breastfeeding Complications

Leading health institutions including WHO (2017) have concluded that nearly all mothers can breastfeed and have sufficient breast milk to adequately feed their infants. Some mothers, including first-time mothers, have the perception that their breast milk is insufficient and are concerned that their infant may not be sufficiently nourished through breastfeeding (Walsh, Kearney, & Denis, 2015). These mothers are also concerned that their infants may fail to thrive. This perception may be fueled by a rare complication of breastfeeding known as hypernatremia dehydration, of which, according to Staub and Wilkins (2013) people are becoming more aware. Hypernatremia dehydration is a potentially lethal condition associated with exclusive breastfeeding (Mujawar & Jaiswal, 2017). These researchers also indicated that the number of newborn deaths from hypernatremia dehydration is increasing.

Hypernatremia dehydration occurs among newborns when the sodium concentration of breast milk does not decrease over the first 15 days of lactation following birthing (Zaki1, Mondkar, Shanbag, & Verma,2012). This was due to failure to establish adequate breastfeeding. Clinical presentation of hypernatremia dehydration occurs at 3 to 10 days of life and as late as 3 weeks of age (Staub & Wilkins 2013). According to Lavagno et al. (2016), neonate (newborn) hypernatremia was also recognized in infants who were less than or equal to 21 days of age and had greater than

10% loss of birth weight (Lavagno et al., 2016). Owing to severe dehydration, affected infants had pinched abdominal skin and a “doughy" feel (Ahmed, et al., 2014). Water loss in this condition occurs largely through the skin and from the lungs (Lavagno et al., 2016). Hypernatremia dehydration was associated with brain damage and gangrene (Lavagno et al 2016). Additionally, there was the presentation of renal failure and jaundice. The first signs of neonatal dehydration include the failure to have bowel movements or the presence of urate crystals, combined with weight loss. A reduced number of wet diapers is also a sign. Ahmed et al. (2014) cited a refusal to feed as the most common presenting complaint in these children. Affected infants are also irritable or cry when they are removed from the breast. Based on their retrospective study Ahmed et al. (2014) noted the affected infants were term babies, mostly born to first-time mothers. According to Lavagno et al. (2016), caesarean delivery, primiparity, challenges breastfeeding, maternal obesity, delayed breastfeeding, absence of breastfeeding experience, and low maternal education level, and first-time mothers being inexperienced with breastfeeding were also factors contributing to hypernatremia dehydration.

There are published incidents of hypernatremia dehydration in at least one Caribbean country. Trotman, Antoine, and Barton (2006) presented a Caribbean perspective on hypernatremia dehydration. They identified four cases admitted to the Newborn Special Care Unit of the University Hospital of the West Indies, Jamaica, over a 7-year period. They cited research attributing the failures in breastfeeding as being because of physiology issues with the mother’s breast or issues with the baby. Nipple-related abnormalities can present breastfeeding difficulties challenging infant caloric

intake (Trotman, Antoine, & Barton, 2006). Prior breast surgery, inverted nipples, very large nipples, or incorrect latching technique negatively impact breastfeeding (Trotman, Antoine, & Barton 2006). Neurological abnormalities or sepsis can hinder an infant's appetite and ability to suck, creating a failure to establish breastfeeding (Trotman, Antoine, & Barton 2006).

According to Staub and Wilkins (2013), exclusive breastfeeding-associated hypernatremia was a real threat and has the potential to encourage mixed feeding. Arguably, it could also promote early weaning. The researchers add that concerns over newborn hypernatremia dehydrations was increasing to the extent that the condition has been included in the protocol of British Pediatric Surveillance Unit reporting system. Since the British Paediatric Surveillance Unit began reporting on the condition in 2009, 64 cases have been reported (Oddie, 2009). The increased number of deaths from exclusive breastfeeding-associated hypernatremia dehydration can present a challenge in making the choice to exclusively breastfeed. Staub and Wilkins (2013) argued that hypernatremia dehydration has the potential to encourage mixed feeding. But Ahmed et al. (2014) insisted that the occurrence of breastfeeding-associated hypernatremia dehydration should not diminish the practice of exclusive breastfeeding. What's required is the requisite vigilance to avert the occurrence of hypernatremia hydration among newborns.

Hypernatremia dehydration is preventable. Moreover, it is treatable. Rehydration therapy to increase water levels in the body and reduce sodium levels occurs in the first 2 days of treatment (Krishnamurthy, Debnath, & Gupta, 2011). The avoidance of the

condition is best. To avert neonate hypernatremia dehydration, Mujawar and Jaiswal (2017) recommended monitoring the mother and baby in the 1st week of life to ensure the successful establishment of breastfeeding. Mothers should breastfeed babies eight to 10 times in 24 hours. Lavagno (2016) supported studies that demonstrated that daily weighing during the first 4 to 5 days of life effectively detects dehydration in exclusively breastfed new born. Early diagnosis of this condition is key and frequent weighing of infants during first 2 weeks of life to look for excessive weight loss (Ahmed, et al., 2014) is the best route to early diagnosis. A follow-up visit with a pediatrician following discharge from the hospital was also advised (Zaki, Mondkar, Shanbag, & Verma 2012). Staub and Wilkins (2013) suggested that sound instruction be given to mothers to help establish successful lactation. However, they are, also, of the view that occasionally complementary formula feeds may be necessary for infants to allow mothers to rest, as well as to overcome poor breast milk supply and prevent hypernatremia dehydration in babies. Of note, in at least two of the Caribbean cases identified by Trotman, Antoine, & Barton (2006), the infants' mothers were advised to supplement breastfeeding with formula feeds.

Summary

The literature on breastfeeding portrays it as a complex behavior. Breastfeeding has far-reaching inherent short and long terms health, social, and economic benefits for infants and many health benefits for mothers. These benefits, however, are more apparent in communities where sanitation, particularly the availability of safe water to make

formula, and health generally are challenging –as in parts of sub-Saharan Africa. In such countries exclusive breastfeeding literally save lives.

The facilitators of exclusive breastfeeding, such as baby-friendly hospitals, help foster attitudes that embrace breastfeeding, but many hospitals are not baby-friendly, and health professionals are ambivalent about encouraging exclusive breastfeeding among mothers. However, it appears that the duration of maternity leave may be the real reason for the early interruption of exclusive breastfeeding. Added to that is the potential for an infant to experience hypernatremia dehydration.

Several aspects of breastfeeding require more details and further literature development. There is need for a better understanding of factors that influence infant feeding choices. A better understanding on how infant feeding choices are made will guide the design of attitudes and behavior-change policies geared towards increased optimal breastfeeding (Gage, et al., 2012). Further research is required vis-à-vis which dissemination strategies are most effective for promoting exclusive breastfeeding and for supporting lactating mothers. Such strategies should factor in varied cultural settings and account for different socio-economic groups.

The research participants in this study indicated their sources of information concerning breastfeeding and how that information influenced their infant feeding decisions. This will help to fill that gap in the literature. There is limited research on the perceived attitudes and beliefs of health-care providers, including physicians in training (Radzyminski & Callister, 2015). Importantly, the current literature on breastfeeding does not present the perspective of the population under review when using the search terms

"Breastfeeding and Antiguan women". This research will also fill that gap. Available information on Caribbean populations was outdated and often more specific to Latin America (Lutter, Chaparro, Grummer-Strawn, & Victora, 2011; Perez-Escamilla, 1994), or other countries such as Aruba (Greˆaux et al., 2013) and migrant Puerto Ricans (Kaufman, Deenadayalan, & Karpati, 2010). These countries, though close in geographic proximity to Antigua, differ culturally. Therefore, questions remain. One possible deficit may be the lack of a deeper understanding of the exclusive breastfeeding experiences of mothers. Consequently, in the next chapter, I will detail my efforts to answer the overarching research question of the perceptions towards exclusive breastfeeding of first-time mothers in Antigua and Barbuda.

Chapter 3: Research Method

Introduction

This study was designed to discover the perceptions of first-time mothers in Antigua and Barbuda towards breastfeeding and weaning. This study was also designed to examine the low number of mothers following the Government of Antigua and Barbuda's (2012) guidelines for exclusively breastfeeding infants up to 6 months of age. This included an examination of any reluctance and other barriers to first-time mothers engaging in exclusive breastfeeding of infants in the first 6 months and the psychological and social factors that contribute to these barriers.

In this chapter, I outline the steps involved in conducting this research. Specifically, I identify the research questions and detail the study design geared towards answering these research questions. I explain the process for selecting research participants as well as the instruments used to collect the data. I detail the data collection process and the steps taken to analyze the information. This entire study was conducted in an ethical manner to ensure that research participants were treated with respect and confidentiality; I lay out my plans to achieve this.

Research Design and Rationale

This qualitative study of the lived experiences of Antiguan and Barbudan first-time mothers was phenomenological in nature. It was designed to identify the essence of human experiences related to breastfeeding as described by the research participants. I selected a qualitative approach to allow for the collection of rich and in-depth data. Moreover, phenomenology was the most suitable qualitative method because it allowed

me to understand the subjective experiences of participants as well as their motives and actions, free of any preconceived assumptions. Phenomenology allowed me to describe the phenomenon as experienced in Antigua and Barbuda rather than explain it. This research design also brought to the forefront meaning, perceptions, and attitudes.

The lived experience of Antiguan and Barbudan first-time mothers was key to understanding their perceptions of breastfeeding and weaning. I gained insight into this lived experience via semistructured interviews. With the use of a demographic questionnaire, I also identified characteristics of the sample population, including age, marital status, educational level, income, and occupation.

Guiding this research were four research questions (RQs):

- RQ1: What are the perceptions of first-time Antiguan and Barbudan mothers regarding exclusive breastfeeding and weaning?
- RQ2: What are the perceptions of first-time Antiguan and Barbudan mothers about the benefits and disadvantages of exclusive breastfeeding?
- RQ3: What factors do first-time Antiguan and Barbudan mothers view as barriers to and facilitators of exclusive breastfeeding?
- RQ4: What are the views of first-time Antiguan and Barbudan mothers on weaning infants prior to 6 months of age?

These questions, along with the demographic markers, gave a fuller picture of the factors informing the choices of first-time mothers regarding breastfeeding and weaning.

Central Concepts of the Study

The WHO (2016) recommends that all infants be exclusively breastfed for the first 6 months of life, but actual figures in Antigua and Barbudan show that on average only 30% are exclusively breastfeed 6 weeks postpartum (Government of Antigua and Barbuda, 2012). This is the question I sought to understand. I dug for these answers using a phenomenological approach to gain a detailed understanding of the phenomenon under investigation. This was done using a semistructured questionnaire. I continued administering the questionnaire up to the point when data saturation was achieved (i.e., when no new information could emerge from the data; Creswell, 2009). I recruited 13 participants drawn from the population using health centers within and around the city of St. John's, Antigua, to provide answers to the research questions. The total number of research participants was determined when data saturation was reached. The total number of research participants interviewed from these urban health centers varied between five and 25, in alignment with Creswell's (2009) guidelines for qualitative research.

Role of the Researcher

The main task of researchers following the phenomenological method is to translate the data of lived experiences (Sanjari, Bahramnezhad, Fomani, Shoghi, & Cheraghi, 2014). I provided a comprehensive description of the perceptions of first-time Antiguan and Barbudan mothers towards breastfeeding and weaning. I executed all aspects of this research. This means that I contacted the research participants, presented them with the consent forms for their signature, conducted the research interviews, and conducted any follow up interviews with participants. I also transcribed the research

interviews verbatim. I completed all data analysis and final report writing of the research results.

Potential Bias or Conflicts of Interest

There were no known conflicts of interest for this study. For example, I did not have any personal or professional relationship with the proposed target population of this study. I minimized potential biases by minimizing contact with the research participants– only contacting them three times to seek information. This contact included individual face-to-face interviews and sharing the research findings. I used the telephone and emails when face-to-face conversations with research participants were not possible. A potential bias that exists was my own experience as a first-time parent; I took steps to manage this bias, as outlined below. Another potential bias was the fact that I live in Antigua and Barbuda. However, my current residency can count as an advantage since I am more familiar with cultural customs and more able to develop rapport with the research participants

Management of Bias

Based on my experience as a first-time parent and having some knowledge of the factors that can impact a mother's decision to exclusively breastfeed her child, I understand how other people can influence the breastfeeding decisions of first-time mothers: My mother insisted that my daughter be fed formula because she believed breast milk was insufficient. However, I realize there are many other factors that contribute to infant feeding patterns (see Susin et al., 2005). As a first-time mother, I predominantly breastfed my daughter, occasionally supplementing her feeding with formula. Sometimes,

when I needed to be away for more than 2 hours, I left a prepared bottle of formula. By 4 months, I began introducing her to fruits and vegetables but continued breastfeeding until 18 months. While I prefer exclusive breastfeeding, I know from lived experience that it can be challenging for working mothers like me. According to Creswell (2009), a researcher can never be free of subjectivity. To maximize my neutrality, I used a journal to keep field notes on each encounter with research participants and recorded moments of subjectivity. There was also a commitment on my part to let the data collected address the phenomenon under investigation. Direct quotations are used during the presentation of the data in Chapter 4 to ensure that the experiences of the participants are portrayed in their own words.

Incentives

Each research participant was given an EC$30.00 (US$11.00) gift certificate redeemable at a local department store. This was an incentive to volunteer and a small token of appreciation for participating in the study. The use of incentives in research seeks to make the choice of participation more attractive to the respondent. Grant and Sugarman (2010) raised the ethical question of whether incentives can cause undue influence or serve as a coercive inducement to participate. Mindful of this concern, I kept the appreciation token small; hopefully, this reduced the possibility of research participants compromising their responses or dignity.

Methodology

In this phenomenological, qualitative study, I used a purposeful criterion sampling of first-time mothers in Antigua and Barbuda. According to Patton (2002), purposeful

sampling is widely used in qualitative research. It allows for a focus on participants who are information rich and, as such, can provide deep insight into the phenomenon. Ayton, Howes, Hansen, and Nelson (2014) found purposeful sampling to be a useful tool for their exploratory research on an aspect of exclusive breastfeeding.

The phenomenon explored in this research was the perceptions of first-time Antiguan and Barbudan mothers towards infant feeding. I pursued information on the lived experiences of the sample population only. The empirical information will not be used to generalize about the entire population (Patton, 2002). For the participant selection criteria I included the following:

- Being a first-time mother over the age of 18,
- Not being pregnant,
- Having a single child between 1 and 6 months old,
- Having had a child born of normal weight,
- Having had a normal birth of the child (i.e., the mother delivered vaginally and there were no medical complications),
- Having a child not suffering from any health condition or disease, and,
- Having had the first-time mother engaged, currently engaged, or never engaged in breastfeeding.

When interested research participants contacted me, they were asked questions pertaining to the inclusion criteria to determine eligibility. These questions were asked again during the interview. In this section of Chapter 3, I have provided a description of the population and identified the research sites, the recruitment process, the participant

selection process, the inclusion and exclusion criteria, and the processes for data collection and analysis. Creswell (2009) recommended no less than five and no more than 25 persons be recruited for qualitative research. Some qualitative researchers have used between 11 and 21 research participants in their studies (Agunbiade & Ogunleye, 2012; Walsh et al., 2015). Based on the recommendations of theses researchers as well as their experiences the number of research participants for this research was 13. Once the saturation point was reached, interviews with research participants ceased.

Sites and Population Demographics

This study was conducted in the twin island Caribbean country of Antigua and Barbuda. Antigua, where the capital is located, however, was the focus of the study. These Caribbean islands are between the Caribbean Sea and the North Atlantic Ocean, and east-southeast of Puerto Rico.

The population of Antigua and Barbuda is approximately 92,436 (CIA World Factbook, 2015). Approximately 24% of the population lives in urban areas (World Bank, 2016). The ethnic majority, approximately 91%, is Black (CIA World Factbook, 2014). The birth rate is 15.85 births per 1,000 people, and the infant mortality rate is 12.87 deaths per 1,000 live births (CIA World Factbook, 2015).

The sample population for this study came from five urban communities in Antigua because of its density. According to the U.S. Department of Health and Human Services (n.d.) the recruitment of human subjects as research participants is a challenge. It often takes a longer time frame than anticipated to get participants, and the participation rates are low (U.S. Department of Health and Human Services, n.d). To

address such potential challenges, the community health clinics served as recruitment sites because they are highly subscribed to by mothers for child wellness services such immunization and doctor's visits. While open to the public, mothers from the middle and lower classes utilize the clinics for the purposes of immunizing their infants. Because approximately 24% of Antiguans are urbanites, it made sense to utilize urban health centers as the research sites for this research. Moreover, people in the immediate environs, including the suburbs, also utilize these clinics, enhancing the chances of adequate participation in this research. Additionally, multiple research sites were chosen to enable success in attracting not only sufficient research participants, but participants with diverse experiences.

Sample and Selection Criteria

As stated above, the sample for this study were first-time mothers, with an infant from a single pregnancy who have engaged in breastfeeding, or are currently breastfeeding, either exclusively or non-exclusively, or never breastfed. It was a requirement that their babies be healthy and between the ages of 1 and 6 months—the age up to which the WHO recommends exclusive breastfeeding. This infant age cut-off point eliminated recall bias and ensured participants accurately recounted their experiences. Each participating first-time mother was at least 18 years of age and not pregnant at the time of the study. Participation in this research was voluntary. I excluded mothers whose babies were born prematurely, or who had a low birth weight, who are ill or were born via cesarean section. Mothers experiencing these exclusion criteria may have additional challenges caring for their infants, which could have potentially skewed the results of this

research. Institutionalized or mentally ill individuals were also ineligible, as were persons who did not speak English. The eligibility of prospective participants was determined at first contact. They were questioned to determine whether they met the inclusion/exclusion criteria. The recruitment flyer (See Appendix A) articulated requirements for inclusion. The exclusion and inclusion requirements were based on ethical research principles, including the rights to self-determination (Office of Human Research Protections, 2016). For example, incarcerated people cannot exercise the right to self-determination; hence, they cannot voluntarily participate in research.

Number of Participants and Rationale for Number

I planned to recruit approximately five to 25 first-time mothers. This number was recommended by Francis et al. (2004), in their theory of planned behavior (TPB) methodology guide. Some researchers have used between 11 and 14 research participants for their qualitative study on breastfeeding (Agunbiade and Ogunleye, 2012; de Morais Alves et al., 2016). Moreover, Walsh et al. (2015) had 21 research participants in their study on breastfeeding. However, if saturation was achieved prior to interviewing all research participants, then the interviews would stop (Patton, 2012). This study's research number of 25 first-time mothers ensured a balance of manageability and rich details.

Recruitment

The research participants for this study were recruited at five public health centers which offer postnatal clinics and are located in urban communities in Antigua. This was to ensure that adequate numbers of individuals would volunteer to participate in the

study. All five clinics are highly attended, and I conveniently accessed them. The targeted research population was first-time mothers attending the child health clinics at each site. The nurse assistant at each health clinic presented flyers, which had been developed specifically for this study, to first-time mothers attending the child health clinic. On the flyer, they found an explanation of the aims of the research, how the research would be conducted, and its benefits (see Appendix A). The flyer also clearly stated that participation in this research was voluntary and that participants could withdraw at any time.

People interested in participating in this study were asked to contact the researcher by phone. I reviewed each caller during the telephone call to establish her eligibility according to the criteria on the recruitment flyer. Before concluding the call, I set an appointment date and time for the face-to-face interview with each eligible individual. I conducted the interview in a private office at the respective research sites. In instances where this arrangement was not convenient for a research participant, we used a centralized public health office in the city. I informed research participants to make all necessary arrangements to allow for a time commitment of up to two hours for the interview. I also informed them to expect up to two follow up contacts from me—for reporting purposes vis-à-vis the interview transcript and research findings. I received permission, in writing, from the Ministry of Health, to use the clinics to recruit research participants, and requested and received a letter of cooperation from the Ministry of Health (See appendix B).

Saturation

Researchers must monitor the data received in each interview with research participants to ensure that it yielded new information. According to Walker (2012), saturation is a gold standard for purposeful sampling and is appropriated in phenomenological research. It is achieved when the collection of new data does not shed any further light on the issue under investigation. It then becomes counter-productive to do additional interviews, as the information does not add any value. The concept of saturation does not suggest a sample size; however, Francis et al. (2004) recommend 25 participants when using the TPB. Moreover, Creswell (2009) suggested between five to 25 participants to enable the development of meaningful themes in a qualitative study.

Instrumentation

Data Collection Instrument and Sources

In this study, I used a semistructured interview guide (see Appendix C) and a demographic form (see Appendix D) to collect data from research participants. I also used a journal to record my thoughts and feelings during the interviews. This was to register my personal biases and to reduce the chances of these biases clouding the data. Janesick (2011) viewed journaling as the researcher's feedback to self. Walsh et al. (2015) created the semistructured questionnaire I used, with minor modifications, to collect the research data. Their research focused on breastfeeding and the introduction of complementary feeding ahead of 6 months.

I received permission from Dr. Walsh to use the questionnaire (See appendix F). This questionnaire was based on a guide by Francis et al. (2004) and was constructed to

generate data on the variables of TPB. This theory was the framework for my study. The variables of TPB are beliefs, subjective norms, perceived behavioral control, and knowledge. The instrument was adequate to answer the research questions in this study. The demographic questions were developed using several other research studies as a guide (e.g., Liu et al., 2013; Walsh et al., 2015).

Previous Use of the Study Instrument

My interview protocol (See Appendix C) was adapted from the instrument used by Walsh et al. (2015) to study Australian first-time mothers' beliefs about introducing infants to complementary foods ahead of 6 months of age. My study is in line with theirs and utilized the same theoretical framework to answer the research questions. While they looked at the belief component of perceptions to the breastfeeding phenomenon of weaning, I looked at perceptions in general and focused on the phenomena of breastfeeding and weaning. The focus of both researches was generally similar.

Establishing Content Viability

The TPB is a well validated decision-making model (Walsh et al., 2015). The TPB instrument guide was validated by Francis et al. (2004). It identified questions based on the key determinants of behavior. The questions focused on behavioral beliefs, subjective norms, and perceived behavioral control. Francis et al. used direct and indirect variables to arrive at an assessment of attitudes. Walsh and her research colleagues used the TPB instrument guide developed by Francis et al. to develop their research questionnaire. An informational test of the interview guide was also conducted. Additionally, I had two experts in Antigua and Barbuda in the field of breastfeeding

review the semistructured questionnaire to determine if it would sufficiently elicit information. They approved the questionnaire. One of the experts recommended that key attention be paid during the interview to ensure smooth flow. I interviewed two first-time mothers fitting the inclusion/exclusion criteria to test the research instrument. The two individuals understood the questions well, and adequate information was shared with the researcher.

Context/Cultural Specific Issues

The TPB interview instrument developed by Walsh et al. (2015) was based on a guide by Francis et al. (2004). The questionnaire offered a means to understand the role various factors play. Its use was not impacted by culture and, as such, it was applicable to the Antiguan context. To ensure the Walsh et al. (2015) questionnaire was suitable for and specific to my research, I introduced many modifications. I replaced the words "complementary feeding" with "exclusive breastfeeding" to reflect the focus of my research. However, I used the last two sub-questions under question 3 in their entirety. I added two additional questions under the knowledge segment, question 4, to gain an understanding of the knowledge of first-time mothers concerning the age at which solids should be introduced to infants and their views on that WHO recommendation. This particular modification was in keeping with the structure of a similar question under the knowledge segment of Walsh et al.'s (2015) research.

Procedures

I embarked on the data collection process for this study following approval from the Walden University and the Antigua and Barbuda's Institutional Review Boards. The

data collection ran from August 2017 to September 2017. The data was collected in Antigua.

The frequency of collection was based on the availability of the research participants. Each interview lasted between one and a half to two hours. At the start of each interview, I explained the purpose of the research and its benefits, and the interview procedures and reviewed the consent form in detail. Research participants were prompted to sign the consent form after my presentation and explanation, which included making clear that participation was strictly voluntary and could be withdrawn at an anytime. I used clear and simple language in my presentation. Additionally, demographic information (See Appendix D) was collected via a questionnaire, as mentioned above. The interview was tape-recorded, with the permission of the research participants. The recording of the interview allowed me to adequately focus on the conversation with each research participant and to keep them engaged. Had a research participant objected to being recorded, she would have been asked to write detailed responses to the questions. An alternative would have been for me to take detailed notes, which could be distracting to participants as well as restricting my ability to pay attention to what was being said and identify opportunities to ask clarifying questions. These missed opportunities would have delayed the completion of my research. I recorded my thoughts in my journal immediately after each interview to document my opinions and feelings on the research process to manage bias.

I made two follow-up contacts with each research participant. In the first contact, each research participant was asked to verify her responses from a transcription of the

interview. This member-checking process helped improve the accuracy, credibility, validity, and transferability of this dissertation. The second contact with research participants was an email summarizing the research findings at the end of the dissertation process.

I used multiple research sites. This allowed me to access sufficient research participants. However, if I was unable to do so, the study would be re-advertised. The second time around, the recruitment site would be the offices of pediatricians. I would recruit the office staff to share the study's flyers with mothers of young infants who come in for a doctor's consultation.

Participants existed this study with the competition of the dissertation. I debriefed each individual research participant and gave her highlights of the research findings, allowing her to benefit from the knowledge gained during the study. The EC$30.00 (US$11.00) gift certificates, purchased using personal funds and redeemable at a local department store, were delivered at the end of the interview. The gift certificate was advertised in the recruitment flyer.

Data Analysis

Data Collection and Analysis

Data were collected using a semistructured questionnaire adopted from Walsh et al. (2015), and a questionnaire on demographics based on the work of several researchers. Using these instruments, I elicited information from research participants. I conducted one in-person interview per individual, in either a private room at the research site or a public health office in the city. If that were not possible, I could have conducted the

interview via telephone and recorded it or requested a written response via email. I followed the interview guide to conduct the interviews. During the interview I asked for clarification when necessary. These follow up questions allowed for further description of the detail, without indicating what you are looking for. I kept a daily activity journal. I conducted the interviews between the periods of August and September 2017. I contacted research participants via telephone or email to confirm that the interview transcript adequately captured their interview responses. I coded the interviews using emerging themes. I used the computer software NVivo 11 for Starters in Windows to assist with the data analysis.

Type of and Procedure for Coding

Precoding. I transcribed completed interviews shortly after the interview. Precoding captures quotations that stand out, areas requiring further clarification, and potential follow-up questions for other research participants.

Preliminary analysis. I read the transcripts after the interviews, to assess if saturation had been achieved or if more interviews were required**.**

Main analysis. I identified potential themes that answered the overarching research question: What are the perceptions of Antiguan and Barbudan mothers towards exclusive breastfeeding and weaning? This was done utilizing a combination of Morse's (1994) and Miles and Huberman's (1994) stages of data analysis. This involved first comprehending broad coding by identifying categories and themes in the data. I did so manually when reading through transcripts and when using the NVivo 11 Starter for Windows software. The nodes identified, based on data inputted to NVivo, helped with

identifying the broad codes and themes. Nodes collect related material in one place. I looked at the data in the nodes for emerging patterns and ideas. I then engaged in synthesizing and theorizing. Synthesizing involves identifying patterns in the codes and themes while theorizing the data, connecting the data to show how one concept relates to another and how they tie into recognizable groups (Miles & Huberman, 1994; Morse, 1994). The tree nodes produced by NVivo 11 also assisted with that process. I also accounted for all the data in the texts, essentially exhausting all the data. This included acknowledging the unexplained and anomalous, as they could help to create further insight. I, finally, re-contextualized and developed propositions which included making comparisons with the findings of previous research, thus enhancing the rigor of this research (see Eisenhardt, 1989).

Regarding the demographic data, I used NVivo 11 to both allow for the storage of the information about participants and identify patterns. Such details about the analysis of research gives it rigor (Houghton, Murphy, Shaw, & Casey, 2015). I was the one doing all the analysis for this research; NVivo was only an aid in the analysis process. I ultimately shared the research findings with research participants, and this presented an opportunity for feedback.

I determined discrepancies on a case-by-case basis and reported them in the narration.

Quality of Research

To be judged trustworthy, my research must prove itself to be credible, dependable, confirmable, and transferable. The application of these research quality criteria in this study is discussed below.

Credibility

This qualitative research presented the views of first-time mothers with respect to their experience of the phenomenon of breastfeeding. I presented the participant's views by using rich quotations. Triangulation is used to ensure credibility in qualitative research**.** To achieve this, I used multiple methods of data collection–interviews and journaling–to present a comprehensive view of the phenomenon (Cope, 2014). According to Janesick (2011), journaling allows researchers to document their thoughts on the research process while engaged in it, providing a data set of the researcher's considerations.

There was no prolonged contact with participants. Once the individual has been accepted into the study, I conducted an initial interview lasting between one and a half hours to two hours. Each research participant received a transcribed copy of her interview to confirm that her comments were accurately recorded. Participants also received an email with the research findings. These last two processes engendered trustworthiness in this study.

Transferability

In qualitative research, transferability is achieved when the findings can be generalized in other settings. Based on the context and assumptions of this study, others can determine if the findings are applicable to their context (Cope, 2014).

Dependability

I carefully articulated the methodology of this qualitative research to enable replication using similar conditions and participants. When another researcher can concur at each stage of the research process, it means good research practices have been followed (Cope, 2014).

Confirmability

I made every effort to ensure that the data collected represents the participants' responses and not the researcher's views (Cope, 2014). Triangulation, the use of multiple sources of data collection, reduced researcher biases. These triangulation strategies included journal keeping, member check of transcribed interviews, and sharing of research findings with the research participants.

Ethical Procedures

General Provisions

I conducted this study based on the ethical principles of respect for persons, autonomy of persons, beneficence, and justice as outlined by the Belmont Report, which guides research involving human subjects (Office for Human Research Protections, 2016). I maintained the participants' safety, privacy, respect, and confidentiality throughout this study. Each participant signed an informed consent form prior to the

collection of data. Further, I informed research participants that withdrawal from the study at any time was permitted. I provided them with my contact details so that they could make contact at any time to inform of a decision to withdraw from the study. I received approval from two Institutional Review Boards: the Walden University Institutional Review Board (IRB) with approval number 07-07-17-0399070, and the Antigua and Barbuda Institutional Review Board, with approval number IRB00009002, to conduct the research. I requested permission from the Antigua and Barbuda Ministry of Health to access research participants at the health centers under their jurisdiction. I wrote the recruitment flyer in a manner to avoid language bias. I did not limit my research pool to only mothers who were breastfeeding or breastfeed, but extended to mothers who had never breastfed. I presented the flyer as a study focused on infant feeding, rather than breastfeeding.

Beneficence

There were no known risks in conducting this research. The advice of the Office for Human Research Protections (2016) that researchers conduct their research in a manner whereby the wellbeing of research participants was secure. During the interview session research participants were not at risk. The findings of the research will be maximized to support social change in society.

Justice

I shared the benefits of this research with research participants. Institutionalized individuals and anyone who could be unfairly coerced into participating in this research was not part of this study. As advised by the Office for Human Research Protections

(2016) there was no differentiation in treatment of research participants. There were no known burdens from participating in this research. I ensured that contact with research participants was kept to a minimum so that the lives of the research participants were not burdened with interruptions from me.

Autonomy

Participation in this study was entirely voluntary, and due respect was given to participants' decisions to withdraw their participation as advised by the Office for Human Research Protections (2016). I provided participants with detailed explanations of the nature of the study, the potential risks, and the benefits and alternatives to participation. I gave participants an opportunity to ask questions and to receive the requisite feedback before deciding whether to participate. Participation was based on a signed informed consent form. Persons who were institutionalized or mentally ill were not allowed to participate in this study.

Data Storage

Participant data is being treated confidentially. I keep the data locked in my file cabinet and on my computer. I am the only one with access to the information – my computer is accessible only to me and is password protected. The transcribed interviews stored on my computer were each given a code, for example RP1, eliminating the need to use the participants' name. This protects each participant's identity, privacy and confidentiality, thereby eliminating any malevolent release of the data (Parry & Mauthner, 2004). The data was used only for this study and disseminated within this

study. The data will be kept for 5 years, based on the Walden University standards, and then destroyed (Walden University Institutional Review Board, 2015).

Dissemination of Findings

I plan to share the findings of the research with the key sub groups in Antigua and Barbuda. The specific audiences include the research participants, key decision makers within the Antigua and Barbuda Ministry of Health, the Antigua and Barbuda Nurses Association, Dietitians and Nutrition of Antigua Barbuda Association, and the Medical Association. Other avenues will be tapped into to disseminate this dissertation at local, regional, and international conferences, journals, websites, and media.

Summary and Transition

In Chapter 3, I detailed the manner of executing this study, including its research design and methodology. Additionally, insight into this study's instruments, procedure, and ethical considerations were provided. Chapter 4 includes the research findings.

Chapter 4: Results

Introduction

The purpose of this phenomenological study was to explore the perceptions of first-time Antiguan and Barbudan mothers toward exclusive breastfeeding and weaning. The research questions were as follows:

- RQ1: What are the perceptions of first-time Antiguan and Barbudan mothers regarding exclusive breastfeeding and weaning?
- RQ2: What are the perceptions of first-time Antiguan and Barbudan mothers about the benefits and/or disadvantages of exclusive breastfeeding?
- RQ3: What factors do first-time Antiguan and Barbudan mothers view as barriers to and/or facilitators of exclusive breastfeeding?
- RQ4: What are the views of first-time Antiguan and Barbudan mothers on weaning infants prior to 6 months of age?

This chapter includes details on the recruitment of research participants, the demographics of research participants, and the data collection technique. This chapter also includes the results from the study, which will be presented in sections, based on descriptive themes in the responses of 13 research participants to open-ended questions about their breastfeeding and weaning experiences. The interview guide (Appendix C) used to interview research participants was in keeping with the key construct of the TPB. The TPB model formed the theoretical framework for this research. Chapter 4 concludes with the interview results and transition to Chapter 5.

Demographics

Characteristics of Participants

To establish diversity in the characteristics of the research, the participant's age, income, education level, and employment status were recorded. The research was opened to first-time mothers who breastfed, had never breastfed, or were currently breastfeeding. Eleven participants were currently breastfeeding, and three mothers had weaned their offspring at 4 and 5 months old. All participants introduced food other than breast milk to their child ahead of 6 months. The medium age group of the research participants was 18 to 25. The older participants were in the 30 years and over age group and totaled four. Research participants had to be 18 years and older, not currently pregnant, and with a single healthy baby. Table 1 provides details of the demographics of the research participants.

Table 1

Participants Characteristics

Participant	Age range	Education	Income range	Employed	Breast feeding	Other foods
RP1	18-25	High school	$40,000 < $60,000	No	Yes	Tea and water from 1 month, Formula at 2 months, fruits from 3 months
RP2	18-25	Post high school	$40,000 < $60,000	No	Yes	Formula at birth for 2 days only
RP3	18-25	High school	< $20,000	No	Yes	Formula and water from 3 weeks
RP4	18-25	High school	$20,000 < $40,000	Yes	Yes, weaned at 4 months	Formula and water from 1 month, porridge, nuts and mash potatoes, eggs from 5 months
RP5	18-25	High school	$20,000 < $40,000	No	Yes	Formula and water from birth
RP6	18-25	High school	< $20,000	No	Yes, weaned at 5 months	Formula from birth and cereal from 3 months
RP7	Over 30	High school	< $20,000	No	Yes	Formula and water from birth, and tea (anniseed with sugar) from 3 weeks
RP8	Over 30	High school	Don't Know	No	Yes, weaned at 5 months	Formula and water from 1 week
RP9	26-29	University	$40,000 < $60,000	Yes	Yes	Formula and water from birth
RP10	Over 30	University	Don't know	Yes	Yes	Formula and water from 2 months
RP11	Over 30	University	$20,000 < $40,000	Yes	Yes	Formula, tea (sour sop leaves with honey) from 3 months, pureed fruits, rice, cereal and water from 5 months

Participant	Age range	Education	Income range	Employed	Breast feeding	Other foods
RP12	26-29	Teacher's college	$20,000 < $40,000	Yes	Yes	Formula from 5 months 2 weeks and water from 3 months
RP13	18-25	High school	$20,000 < $40,000	No	Yes	Formula and water from 2 weeks

Data Collection

Recruitment of Participants

Thirteen research participants were recruited for this study with the use of purposeful sampling. This is a useful and popular technique used in qualitative research for the exploration of a phenomenon using a small number of participants (Patton 2002). When using purposeful sampling, research participants must be knowledgeable and experienced on the phenomenon under investigation. The research participants must also be both willing to participate and able to articulate their experiences and opinions in an expressive and introspective way (Patton 2002).

I dropped off recruitment flyers with the nurse in charge of each site's child wellness clinic. The recruitment sites were five urban health centers in Antigua. The recruitment flyers were presented to first time mothers with babies between the ages of 1 and 6 months. Potentially eligible first-time mothers who were given the recruitment flyer were instructed to call me if they were interested in participating in the research. No calls were received. The recruitment process had to be amended. Instead of leaving it to the mothers to take the initiative and contact me, I needed to be on site on days when mothers came to the child wellness clinic. The nurse in charge then identified mothers

with babies between ages 1 and 6 months and sent them to me in one of the back offices of the clinic. Once it was confirmed that they were interested in participating, I established eligibility based on a few brief questions from the demographic questionnaire (see Appendix D). An appointment date for an interview was set based on the mother's availability. Most research participants chose to be interviewed on the spot while others scheduled for a later date. Many the research participants who rescheduled did not keep their interview appointment.

I attended eight child wellness clinics in total across the five urban health centers within Antigua and Barbuda to recruit participants. The data collection was over the period August 4 to September 29, 2017. There was a lull at the end of August as I awaited the scheduled date for one of the Child Wellness Clinics.

Data Recording

The information gathering process began with a partial completion of the demographic questionnaire to determine each research participant's eligibility to participate in this study. The requirements were that participants be 18 years and older and mother to an infant between the ages of 1 and 6 months. I then went over the consent form in detail, stopping intermittently to ensure clarity and asking for questions. Following this process, both the research participant and I signed the consent form. Consent was also sought to record the interview. I carefully informed each research participant that the recording was solely to enable me to transcribe the interview, that the recorded conversation would remain confidential, and that all references in the research would be anonymous. The demographic data questionnaire was then completed after

which I began the interview seeking information on infant feeding using an open-ended questionnaire to elicit information from each research participant on their breastfeeding experience.

During the initial contact with research participants at the various clinics, I scheduled a mutually agreed upon time for the interview. Eight of the research participants requested to be interviewed immediately upon the initial contact, and 10 of the research participants scheduled the interview for another day. Only five of these individuals kept their appointment; the other five either did not show up to the interview or indicated a lack of interest.

All 13 interviews were conducted face-to-face. They were done in settings that afforded privacy: an office at the health clinic, an office at a public health institution, and, in the case of two participants, at their home. A semistructured research guide formed the basis for the interview. I asked the research participants the interview questions and paraphrased some of their responses to gain confirmation of my understanding of what was said. I also asked clarifying questions and probed to ensure the information shared was rich in details. I took notes during the interview, making brief notations about key points, some observation, and personal thoughts. Each interview lasted 50 minutes to 1.5 hours.

The recorded interviews were then transcribed verbatim. The transcripts were shared with research participants to confirm accuracy. This member checking process represents a validation from the research participant and establishes credibility, validity, and the transferability of the research. The member checking process was conducted via

email based on the expressed preference of 8 research participants. The other five received a hard copy of the transcript which they reviewed and signed off as correct. All research participants indicated that their information was accurately transcribed.

Variation in Data Collection From the Plan Presented in Chapter 3

In the data collection plan presented in Chapter 3, I was not expected to be physically present at the clinics during the recruitment phase. The clinic personnel were expected to distribute the recruitment flyers and interested participants were expected to call me on the telephone. This plan was not successful and was revised based on discussion with my dissertation supervisor and the nurse in charge. I was present at the clinic to physically connect with potential participants. It was at that time that eligibility was established, and a date set for the interview. Most of the interviews were conducted the same time.

Unusual Circumstances During Data Collection

There was a gap between the data collection process with 1 of the clinics and the 4 others. This was due to many reasons. Initially, the nurse at that was unable to facilitate the process. Then work demands prevented me from attending two scheduled clinics at one specific clinic. The island was under a hurricane warning on the next scheduled clinic day. Except for 2 interviews, infants were present with their mothers at the interviews and, in many instances, breastfeeding occurred. The recruitment period was August 4 to September 29, 2017.

Since some research participants unexpectedly requested to conduct on the spot interviews, the thank you gift was delivered during the next contact with research participants, when member checking was conducted.

Data Analysis

I transcribed all interviews conducted with research participants and created a tabular representation capturing the demographic data. While collecting the data I transcribed the interviews. Both processes were done concurrently to determine when saturation was achieved - that is the point at which no new information was coming out of the interviews. Saturation point was established at the 13th interview. During this transcribing process, pre-coding was done, and some interesting quotations were identified for possible use. I read the interview transcript of each research participant multiple times, each time manually recording the themes and categorizing some key phrases in the responses to each question. While reviewing the transcripts, I coded themes as they repeated themselves and made notes of thoughts that emerged.

The computer software NVivo, 11 Starter was also used to assist in the data management. I used a combination of manual and computer assistance to query the data. I manually queried the data for repeated representation of words and phrases from the themes and categories that emerged during my reviews of the interview data. Using NVivo, text queries were used for key words to understand their importance in the data. NVivo is a data management tool; it does not conduct data analysis and as such the data analysis was conducted manually. The data quantity was sufficiently small to adequately facilitate manual analysis. The research data was used to generate ideas, categories, and

themes. When I entered the broad themes and categories manually identified from the data into NVivo 11 Starter, I conducted frequencies query for words with 10 or more repetitions. Based on word frequency identified in NVivo from the manually identified key ideas, 38 themes were identified. All discrepant cases identified were presented in the data analysis. The original themes identified from the research data are the following:

- mixed views on exclusive breastfeeding
- exclusive breastfeeding
- mixed feeding,
- constipation
- breastfeeding is emotional
- maternity leave
- review exclusive breastfeeding recommendation
- baby's comfort
- first feeding
- lack of practical instructions
- physical pain
- relief from exclusive breastfeeding
- delayed breastfeeding
- grandmothers' support for exclusive breastfeeding
- insufficiency of milk
- weaning
- baby led weaning

- maternal grandmother led weaning
- mother's experimentation
- tension between infant's mother and grandmother
- internet
- accuracy of sources of information
- employment
- returning to work
- institutional support
- breast is best
- challenges of exclusive breastfeeding
- risk of attachment to the breast
- mother's nutrition becomes important
- health problems for mothers
- disapproval of breastfeeding approach
- instructional inconsistencies
- nurses' disapproval of early weaning
- public policy
- professional and social support
- agreement with weaning recommendations
- rejection of weaning recommendations
- infant interest in food

Evidence of Trustworthiness

The trustworthiness of qualitative research refers to the level of transparency established within the study (Cope, 2014). This level of accountability by the research determines the veracity and usefulness of the research (Cope, 2014). To achieve this, I followed Elo et al., (2014) Checklist for Researchers Attempting to Improve the Trustworthiness of a Content Analysis. I selected the research tool best suitable to answering the research question, ensured the data collected was well saturated, ensured there were not many concepts in the organization of the data and that they did not overlap, and that the data covered the information the research participants provided. I also ensured full description of the data analysis stage, and the reporting of data in systematic and logical manner. The criteria for trustworthiness in qualitative data are ensured under the broad headings of credibility, dependability, transferability, and conformability – the implementation of which is identified below.

Credibility

I made every effort to ensure that the data collection process as described in Chapter 3 was followed. Information was provided on the sample size which was determined based on saturation during the research process. The questionnaire was iterative and reviewed by an expert panel. The process for achieving adequate saturation was followed in that no new data were emerging by the last interview. Consequently, as the data was collected it was transcribed and preliminary analysis was conducted. During the face-to-face interviews care was taken to actively engage with research participants, to establish rapport and trust to facilitate the sharing of information. I also asked probing

questions, as well as follow up and clarifying questions. I also summarized responses to ensure adequate comprehension. I was also able to observe research participants breastfeed their babies.

The information contained in the data analysis and results represents the participants' responses and not the researcher's views. Triangulation, the use of multiple sources of data collection, reduced researcher biases. These triangulation strategies include journal keeping, and participant checking of transcribed interviews and research results. Upon completing the transcribing of each interview, I had each research participant review their transcript to ensure it accurately reflected their thoughts and opinions. I also shared the results of the research in keeping with the tenets of qualitative studies.

Transferability

Details were provided of the context in which the research was conducted to enable the reader to determine if the results would be applicable in other settings or contexts. Details were provided on the selection of participants. Demographic data was also provided of research participants to facilitate visualization of the individuals. I also presented detail rich description of the thoughts and opinions of research participants by utilizing quotations drawn from research participants.

Dependability

Details were provided of the research participant selection process. This should allow another researcher to easily follow the steps of this research to conduct a similar study. I made notes during the interviews and presented an audit trail of how decisions

were made in the research. According to Thomas and Magilvy (2011), the dependability of a study is high if another researcher can readily follow the decision trail used by the initial researcher

Conformability

The methodology for carrying out the research is clearly indicated, along with the identification of the rationale for each decision made over the course of this study. The sharing of the research findings with participants as a means of participant checking was also utilized. The findings of the research are based on the data gathered from the eligible research participants and are not the bias of the researcher. The findings of the research are factual. The main themes identified in the data are linked by quotations from research participants. As many as possible quotations from research participants were used to confirm the connection between the data and the research results. The quotations used are representative of the sample.

Results

Research Question 1

What are the perceptions of first-time Antiguan and Barbudan mothers regarding exclusive breastfeeding and weaning? To determine the answer to this question, several themes were discovered in the data.

Mixed views on exclusive breastfeeding. Only four first-time mothers, RP2, RP3, PP7, and RP12, were supportive of exclusive breastfeeding. An additional three first-time mothers gave qualified support to the exclusive breastfeeding recommendations by stating its adherence should be based on the specific circumstances of mother and

child. The remaining research participants were of the view that breastfeeding exclusively for 6 months was impractical. These first-time mothers identified variations in infant appetite, the lengthy period required to breastfeed exclusively, and the incompatibility of the recommendation with mothers returning to work after maternity leave as reasons for their verdict. The statutory length of maternity leave in Antigua and Barbuda is 3 months. Additionally, RP2 asserted that not all women were able to breastfeed and concluded that most mothers exclusive breastfeed for three months and then introduced formula, water, and other foods. RP13 believes mothers should be able to choose between breastfeeding or formula feeding of infants. RP3 and RP7, while supportive of exclusive breastfeeding recommendations, were engaged in mixed feeding. They experienced extended challenges with their infant latching onto the breast and had initiated mixed feeding as a result. RP2 indicated, she was exclusively breastfeeding her 2 months old infant at the time of the study; however, she was in the process of reviewing that decision. RP2 gave her infant formula at birth owing to delayed letdown of milk. PR9 stated, "Having to do it for a whole 6 months, it seems like a long time. At one time I am like 'yeah, I can do it' then at another point I am like, 'I can't do this."

Exclusive breast feeding. The first-time mother who was able to secure 5 months and 2 weeks' time-off with pay was the only first-time mother with unreserved approval for exclusive breastfeeding. She reported receiving both financial support and encouragement from her family – made up of nurses and doctors. This first-time mother introduced predominant breastfeeding when her infant was 5 ½ months of age. According to PR12 "I would say if you love your baby and you want your baby to stay healthy,

breast milk is best. Six months is sufficient. It is fine because that is when she is developing and wants to move around."

Mixed feeding. Research participants believe exclusive breastfeeding is circumstantial and that eventually mothers must engage in mixed feeding. RP1 shared her childhood experience of her mother having to return to work 1 month after her birth and having to send her to day care. RP1 shared "You will try to do it especially when you come home in the night time, and before day care but usually parents will introduce something else before then because they have to work; you have to get the money." RP2 said,

> "Everybody is different. Based on what I am seeing so far, he eats a lot because of his activity and development. He is very attentive and all those things. So, I think he would be able to be introduced to the formula plus breast milk."

While RP3 partially agreed with exclusive breastfeeding she stated her daughter's case was different as she did not appear to be satisfied with breast milk and cried constantly. RP4 expressed similar thoughts; her baby was weaned at 4 months. She believes not every mother has the capacity to engage in exclusive breastfeeding as some must return to work.

Constipation. Many mothers who engaged in mixed feeding reported that their infants experienced constipation or feared they would have experienced constipation because of formula feeding infants. RP5 stated, "She went some 6 days before going off. I was worried."

Breastfeeding is emotional. Exclusive breastfeeding caused many emotional reactions from the research participants in the research group. One research participant

expressed a feeling of helplessness as her infant kept crying while exclusively breastfeeding during the first few weeks after birth. According to RP3 “For the first 2 weeks when she was crying, I cried all the time. I cried”. RP12 shared, “I cried. I was emotional when she latched on.” Meanwhile, RP6 touched on the deep intimate connection achieved while breastfeeding. RP7 expressed frustration that she had not been able to exclusively breastfeed her infant immediately due to latching issues. She tried many different strategies to improve her infant’s latching skills.

Maternity leave. Some research participants noted that the recommended exclusive breastfeeding period did not reconcile with the statutory maternity leave period. Given the gap some mothers believed the introduction of infant formula and early weaning were inevitable. RP6 stated, “Yes, I think that babies can be breastfed for the first 6 months but supplemented with something else also. Yes, it is a practical recommendation but for me it was not doable.” RP9 said,

> “I think the maternity leave should be a little longer to support her nutritional need for that period because otherwise we have to find some way to supplement their diets, whether formula or back in the days they use to use cornmeal or strain the oats.”

Review exclusive breastfeeding recommendation. Two research participants, RP5 and RP9 believe the exclusive breastfeeding recommendation needs review. RP5 believes that the exclusive breastfeeding recommendation is outdated and impractical. RP 8 opined that, “I think they should cut it down to 3-4 months. To be fair like 4 months.”

Baby's comfort. Two research participants believe a mix of breastfeeding with other foods such as formula and cereal is the better feeding option for infants as it ensures the baby is soothed. RP10 indicated, "So he needs the formula because the formula is heavier than the breast milk, and it will full his belly. He will be comfortable and that means he can rest properly and fuss less." RP 6 stated,

> "He woke up a lot during the night, he woke up a lot during the day, He was kinda fussy. Because sometime I breastfeed him and I wonder what is wrong because he is hungry again. So that is why I gave him the cereal to hold him better."

First feeding. All research participants indicated that they received feeding advice from the nurses at the hospital on the birth of their infant. They were instructed to breastfeed every 2 hours and to provide only breast milk to infants for the first 6 months. Some research participants reported having previous knowledge based on family experience, from their mothers, other family members, friends, and the internet. All research participants initiated breastfeeding while at the hospital over a 2 day stay.

Lack of practical instructions. Irrespective of the information shared, by nurses, with mothers during their hospital stay, some research participants reported that the information presented lacked depth. RP9 reported that support was lacking in teaching the mechanics of breastfeeding. RP9 indicated that the theoretical discussions from the clinic's prenatal classes failed her following the delivery of her infant. She reported that none of the hospital nurses went over the practical aspects of breastfeeding. She reported that it was one of the hospital's cleaners who provided her with practical advice and

support, informing her that she had to cup her breast to ensure a proper flow of the breast milk into the infant's mouth.

RP7 disclosed that there was not much discussion or information sharing at the hospital. RP 8 reported that the nurses at the hospital never indicated that there would be challenges breastfeeding when they provided feeding advice. RP8 elaborated, "Nobody speaks about the challenges of breastfeeding. I thought it was simple and easy. Nobody really, like, explained the effects, like, what is going to happen."

Physical pain. Most of research participants associated physical discomfort, some bruising and nipple soreness, with exclusive breastfeeding starting from birth because of pain related to improper latching during the first few weeks postpartum. In some instances, the physical pain experienced dampened the desire to continue to exclusively breastfeed. RP1 noted, "After a while, I was iffy about feeding her that way because it hurts and she burst up my breast." RP4 added, "When she was pulling on my nipples it was very hot (painful). I could not cope with the feeling but because I wanted everything to be ok with she, I continued for the 2 days at the hospital."

Relief from exclusive breastfeeding: Two research participants indicated that exclusive breastfeeding was demanding. RP5 recounted that she experienced severe nipple pain while exclusively breastfeeding. She further disclosed that she fed her infant formula to provide relief when nipple pain became unbearable. She expressed regret that her infant received formula because of resulting issues with constipation. RP8 said she gave her infant formula to reduce the physical demands of breastfeeding. Her infant was

at the breast for several hours and demanded breast every 2 hours which interrupted her sleep.

Delayed breastfeeding. At least half of the research participants did not breastfeed their infant for varying reasons for the first day or two after birth. Formula was introduced in these cases. For two research participants their infants were warded in the Neonatal Intensive Care Unit (NICU) immediately following birth and for the other three research participants their milk had not arrived immediately following the birth of their infant but did so a few days after. RP1 disclosed,

> "My milk, it came almost 2 days after I made him. I had to give him the formula. But otherwise, as they (hospital staff) told me, I had to put him on the breast, so the milk will come faster. It did that and it came heavy because my breast was very full."

Grandmothers' support for exclusive breastfeeding. Research participants speak of their mothers' support for exclusive breastfeeding. RP8 stated, "My mom says breastfeeding is good; it is healthy." Not all grandmothers provide input. RP9 indicated that her mother did not say anything to her about exclusive breastfeeding.

Insufficiency of milk. Research participants questioned whether exclusive breastfeeding can completely satisfy infants. Some mothers indicated that their baby was at the breast for extended periods yet appeared unsatisfied, often times crying, and waking often from sleep. According to RP1 "It was like he was not getting satisfied with the breast milk. They told me I could breastfeed him freely, but I just do not feel he is satisfied." RP2 stated, "Sometimes I think that he is not getting enough, because

sometimes I just take him off my breast and he go and sleep for like minutes and then he wakes up crying." RP8 added, (in an exasperated tone)

> "I breastfeed her when they brought her to me. She spent like 4 hours non-stop. At first it was not bad; it felt normal as at that point in time I was not thinking about it. Well, she would be on me like hours. I could not sleep. I have to breastfeed her like every 2 hours. So, I had to make a little formula for her."

RP10 disclosed, "He wants the breast once he is not sleeping; so I figure the breast milk is too light." RP9 stated, (in an exasperated tone) "I breastfeed her and she still crying, crying, crying, so I am like 'what?'. "

Weaning. Of the 13 research participants three first-time mothers had already weaned their infants and were no longer breastfeeding. This occurred ahead of the recommended 6 months. One working first-time mother weaned her infant at 4 months and two stay-at-home mothers both weaned their infants at 5 months of age. All 13 participants had introduced one or more foods – namely water, teas, cereal, porridge, soft solids, and formula – to their infants, at varying ages, but ahead of 6 months. These foods were introduced as early as birth, in the case of formula, and, as relates to other options, as late as when the infant was 5 months and 2 weeks old. Yet, in response to the question "do you believe your breast milk is sufficient, in terms of quantity, to breastfeed your infant?", 10 first-time mothers reported yes and only three first-time mothers reported no.

Baby led weaning. First-time mothers in this study reported baby led weaning based on breast milk's perceived inability to completely satisfy baby. RP11 said, (chuckling) "If baby is satisfied with breast milk then give him breast milk. If he is

hungry too fast, then introduce something else to help him be satisfied." Conversely, RP5 and RP9 indicated that their infants rejected formula in favor of being breastfed.

Maternal grandmother led weaning. Mothers seek feeding information from their infant's maternal grandmother. Research participants indicated that their infants' grandmothers were influential in determining feeding choices and strongly influenced the timing of weaning. RP4 indicated her mother encouraged her to give her infant formula ahead of her return to work. According to RP1 "My mom always tell me to give him a taste (of other foods) so that he is not picky when it comes to eating." RP5 stated, "My mom may introduce some foods without my knowledge. She even told me that next week she will introduce juice." PR9 said, "My mother has been forever trying to get me to have her bottle fed, especially because someone would have had to take care of her." RP13 disclosed, "My mother say, 'you can give the child the bottle (formula) because you not at the hospital'. I was living at her home, so I had to comply."

Mother's experimentation: Some mothers also introduced other foods on their own, experimenting with the infant's taste. RP4 reported, "They said nuts good for the brain. I will buy peanuts and I will mash them fine, fine, and I will mix them with the cereal and give her." RP12 stated, "I started it (water) to her at 3 months because she started getting hiccups." RP5 indicated that when her baby is about 3-4 months old she will also be experimenting with other foods.

Tension between infant's mother and grandmother. Research participants experienced tension with their mothers' recommendations on infant feeding as oftentimes it clashed with the recommendations of health authorities regarding appropriate infant

nutrition and the appropriate time for the introduction of other foods. RP1 also argued with her parents about giving her infant Aniseed tea which they claimed was necessary to clean the infant's stomach. RP5 said,

> "My mom spoke about it (teas), but because I am a first-time mother I was so afraid to try all these things. She always telling me she did this with me and my sister. I told her 'no, this is my first'. She (infant's maternal grandmother) tells me she started giving us porridge at 6 weeks. I tell her 'no, she is not ready'."

RP9 stated, "She (maternal grandmother) believes that from 3 months she (infant) is supposed to be getting cereal, even if it very thin. I am like 'mummy they say until 6 months is breast milk'. She (maternal grandmother) is like 'ooh'." RP3 says her mother discouraged her from expressing her breast milk, because she had never used one herself. She was unsure if her baby was receiving enough milk and introduced formula to her infant just before she was a month old.

Internet. The World Wide Web was used by most mothers to educate and supplement existing information on breastfeeding as well as to answer questions**.** RP2 reported that the Internet helped her decide to breastfeed her baby. Research participants also reported that they utilized a number of strategies to ensure internet sources were accurate. For example, the research participants indicated they used what they deemed to be reputable sites and relied on the thoughts of other mothers who shared their stories on breastfeeding on the Internet. PR2 stated, "I do not only check one site for information. I checked multiple sites and I compare and contrast based on the results I get." PP3 added, "I used to go on Google. Google was my go to. YouTube and Google is the best thing."

RP5 said, “I don’t have a specific site. I would just go on Google and ask Google. I always get a second opinion.” RP9 indicated that she accessed the internet via her mobile phone to learn about the mechanics of breastfeeding while hospitalized following her infant’s birth.

Accuracy of sources of information. Overall, research participants reported having multiple sources of information on breastfeeding. They generally believed their sources of information on breastfeeding to be correct. The sources of information were health care workers, family members including the infant’s maternal grandmother, friends and the Internet. Research participants say they trust family judgment because they (family members) have experienced infant feeding. RP5 stated, “I always get a second opinion. I always have this thing if I do not hear it from a professional, it is not true.” RP10 said, “Her (mother) information is correct based on her experience. I am here and I am healthy.” One research participant said she goes off of her instincts.

Discrepant case. RP13 kept insisting that infants should be given water, adding that most people including family and friends give their infant water to drink.

Employment. Five of the research participants were in full-time employment. Some research participants opted to remain home with their infant for an extended period of between 5 to 6 months before returning to full-time employment. Another mother opted to work from home for a period. RP4 reported that returning to work precipitated the early weaning of her infant at 4 months of age. In preparation for returning to full-time employment, she began mixing breast milk with formula by the time her infant was one month old.

Stay-at-home mothers reported that had they been employed outside the home their feeding choices would have been impacted. Owing to a perceived potential challenge of having a day care facility feed the infant expressed breast milk, one stay-at-home mother, RP1, indicated that she and her partner made a conscious decision that she would remain at home with the baby for the first 6 months. Stay-at-home mothers indicated that if they worked they would express their milk and include some formula in their infant's diet as well. RP2 who is actively seeking employment noted that, based on her infant's current appetite for breast milk, she would have to supplement expressed breast milk with formula. Notwithstanding, many stay-at-home mothers were formula feeding and engaged in mixed feeding because of a perceived belief that breast milk was insufficient for their infant.

Returning to work. Research participants indicated that in preparation for returning to work they introduced formula to their infants. One research participant argued if they baby is not with you, then you have to introduce formula. Concern was expressed about storage of expressed breast milk in the day care setting. Mixed feeding was also practiced. RP4 stated, "When I was going back to work within the space of a month (after delivery). I introduced the formula. She takes the formula and she takes my breast."

RP11 reiterated that exclusive breastfeeding depends on the circumstances of infant and mother. One research participant noted that returning to work interrupted baby's demand for breast milk and consequently the amount of breast milk in supply. RP9 disclosed,

"Working and breastfeeding, it does not work. Because, as they say, breastfeeding is about supply and demand.

Institutional support. All mothers indicated that once formula was introduced into an infant's diet they had to also be given water. Research participants indicated that health professionals at the community clinics made that recommendation to reduce the risk of constipation.

Research Question 2

What are the perceptions of first-time Antiguan and Barbudan mothers about the benefits and disadvantages of exclusive breastfeeding? To determine the answer to this question, several themes were discovered in the data.

Breast is best. All research participants were able to recall at least one benefit of breastfeeding with most identifying two or more benefits, notably bonding and the nutritional content of breast milk. According to RP1

> "Exclusive breastfeeding allows you to bond with your baby. It is easier. You do not have to worry about (the) health of a child, bottles, sterilizing the bottle. You do not have to worry about the water – boiling it, mixing it. It is beneficial. You do not have to worry about anything. The baby is getting the right nutrients."

RP6 said, "I have always grown to hear that breastfeeding is best, and the breasts must be there for a reason." Other benefits identified were exclusive breastfeeding's support of growth and development, weight gain, and disease fighting by increasing immunity and providing antibodies. Aiding cognitive development was also identified by research participants as a benefit of exclusive breastfeeding.

Challenges of exclusive breastfeeding. Research participants recounted several issues which they believe are challenges associated with exclusive breastfeeding. First-time mothers identified a combination of infants being hungry every 2-3 hours, breast milk's inability to satiate, the infant's insatiable appetite for breastfeeding and refusal to eventually take any other food, and an attachment to the breast. RP4 stated, "Breastfeeding every 2 hours when you give the baby just breast milk. Because by then you know she will be hungry in the next 2 hours."

Risk of attachment to the breast. Research participants identified attachment to the breast as a risk associated with exclusive breastfeeding. This perceived attachment to the breast reduced mother's mobility and the length of period away from baby. According to RP1 "The baby gets too attached. So when you want to leave him somewhere, and you have to express the milk, he might not want to take the bottle because he is so accustom to the breast." RP12 indicated,

> "You constantly have to have the baby with you. You can't leave home to say like you going down the road for 15 minutes because you don't know if she is going to wake up and you don't know how hungry she will be."

Mother's nutrition becomes important. Some research participants indicated that they had to be exemplary in their own nutrition when exclusively breastfeeding. However, they found meeting these perceived expectation as challenging. Mothers indicated that their schedule did not always permit them to eat on time. According to RP3 "I realized, Ok, if I eat enough she gets fed. If I don't eat, I don't drink sufficient fluids, then she won't get anything (Breast milk)." RP5 noted, "Mommy has to be careful with

everything that she eats and have to eat on time." RP9 indicated that family and friends continuously encouraged her to eat and drink while exclusively breastfeeding, indicating that if she did not she could potentially feel drained and tired. She said it was challenging to ensure that she was well nourished. RP9 said,

> "When I am hungry and she is hungry, I can't get my food right away because I have to put her first. That was a bit of a challenge because it is not all the time someone else is available to help me."

Health problems for mothers. Three research participants indicated that exclusive breastfeeding can challenge the mother's health. Having to refuel constantly before and after each nursing of her infant was identified by a research participant as a risk of exclusive breastfeeding. RP5 believed that this need for constant caloric and energy refueling was creating weight gain. RP explained, "Sometimes she is at the breast while I am eating. So I am just eating, eating. I am always hungry because as soon as I eat she sucks it from me…I have to eat and drink a lot." RP5 said weight gain was exacerbating her back problem. RP8 was hospitalized. She says exclusive breastfeeding was demanding and affected her health. She reported that her infant was constantly as the breast. RP8 said, "It was a little stressful. I am still trying to catch myself. I am not 100%." Another research participant who believed that infant appetite for breast milk can negatively impact the mother's health was RP2.

Discrepant case. One research participant was unable to identify risks.

Research Question 3

What factors do first-time Antiguan and Barbudan mother's views as barriers to and facilitators of breastfeeding? To determine the answer to this question, several themes were discovered in the data.

Disapproval of breastfeeding approach. Ten research participants responded that no individuals or groups disapproved of their approach to breastfeeding their infant. However, of that number, two reported experiencing disapproval with their breastfeeding approach in responding to previous questions. Three research participants categorically reported disapproval with their approach to breast feeding. RP3 indicated that her friend told her breastfeeding would cause her breast to become elongated, the friend sharing that she had herself ceased to breastfeed her infant at 2 months of age for that reason. She indicated that she accepted this risk of physical changes for the benefits of her child. Additionally, the research participant reported her mother's disapproval of milk expression using a pump.

RP4 explained her mother's disapproval of breastfeeding,

> "My mummy says because I have to go back to work, she tells me I must mix the breast milk with the feeding (formula) and that because I have small breast the baby will not get enough from me; so I must give her the Similac (formula)."

RP4 added that her mother's partner disapproved of her giving her baby formula. However RP4 said her mother reiterated the approach of formula feeding. RP10 indicated her parents disapproved of breastfeeding in public, RP10 said,

> "My parents mostly did not like the idea of having to breastfeed her in church. They said I should not, but I am like, if she is hungry I need to feed her. So what I use to do is try to make sure I have milk expressed in the bottle to bring to church, and for the most part she would take it; and sometimes she did not and I had to go to the car."

First-time mothers complied with the behavior modification requested and altered their breastfeeding patterns.

RP1 inadvertently recounted two incidents of disapproval. In the first instance, her mother asked her to include bush tea in the breast milk to clean her infant's stomach. She protested but later, after the infant had a bout of vomiting, she complied. The second incident occurred at the hospital where she took her infant to deal with a regurgitation problem; the nurses indicated that she was overfeeding her infant breast milk. RP1 stated,

> "I was confused. Others were telling me to freely breastfeed, the other doctor was telling me I could freely breastfeed, and she (the nurse) is telling the pediatrician no, I have to breastfeed every 3 hours. My mom is telling me 'you cannot feed like this because it is only breast milk. If it was formula I would understand.' So I am Like 'Oh my God'. It was confusing."

In recounting her mother's disapproval with breastfeeding RP2 said, "My mom did tell me that especially since how hot Antigua it is best to give him water. Because even though the breast milk has water and all the nutrition, they still need water." For RP13 her mother disapproved of her breastfeeding scheduled. RP13 stated "Well my mother

says once the breast is full you can give the child breast. But if your breast is not full, then…"

Institutional inconsistencies. Inconsistences in the application of the recommendations of exclusive breastfeeding among health institutions can also serve as a barrier to exclusive breastfeeding. RP3 noted while the nurses at the hospital insisted on exclusive breastfeeding for 6 months the nurses at the clinic were not so unrelenting. RP3 said,

> "When it came to my six weeks follow up she was already on formula. I told the nurse I was giving her formula. I brought it up. I thought they were going to tell me to stop. They asked me how much. I told them one ounce. She told me that is insufficient for her and that if I am going to give her formula give her 2 ounces which can full her until I am ready to give her the breast. So they did not tell me to stop so I said 'OK, maybe this can work'. So I did not stop."

Disapproval from nurse for early weaning. Research participants reported disapproval from nurses concerning premature weaning. RP6 stated, "When I went to the clinic I told the nurse I was giving him formula and she says I must try to get him to take the breast as much as possible…He was just over one month then." RP8 said, "Like when I came here (Clinic) and I explained to the nurses (I was giving the baby formula), they kept insisting that I breastfeed, breastfeed."

Public policy. Eight of the research participants are stay-at-home mothers and five are employed. All employed research participants introduced formula ahead of returning back to work. RP8 expressed some exasperation with inconsistencies between

the recommended period for exclusive breastfeeding and the length of maternity leave, as indicated earlier. According to RP8 “They say to exclusively breastfeed until 6 months but then you go back out to work after 3 months.” RP11 stated, “Transitioning from home to work I gave him the formula to take to day care and when he came home he got the breast milk. He was 4 months then but I had started introducing the formula gradually.”

Some research participants introduced strategies to facilitate extended infant access to breastfeeding. One first-time mother secured 5 ½ months leave which was a combination of maternity leave and annual vacation, another was able to work from home for a period, while another, who is self-employed and with a level of flexibility, extended her maternity leave to 5 months. One mother quit working as a self-employed to become a stay-at-home mother to attend to her infant. Stay-at-home mothers also reported introducing formula to their infants or thinking of introducing formula because they questioned whether their infants were feeling satiated with breast milk.

Professional and social support. All research participants reported getting support to breast feed their infant. The sources of support were nurses, friends, and family members, including the infants’ maternal grandmothers and partners. According to RP1 “My baby daddy, he is very strict with the breastfeeding. He don’t want no formula.” Additionally, PR10 stated, “I have a girlfriend who taught me how to feed the baby. She told me how to feed the baby, make him cover the nipple. She encouraged me to breastfeed.”

Research Question 4

What are the views of first-time Antiguan and Barbudans mothers on weaning infants prior to 6 months? To determine the answer to this question, several themes were discovered in the data.

Agreement with weaning recommendations. Research participants demonstrated general knowledge of and agreement with the weaning of infants at 6 months of age. According to RP5 "I think that is good timing." RP9 added, "Well, I don't think it should come earlier. So I think they are ok where they are because I think other than that they do not even understand what this is (chewing)." RP12 stated, "It is an alright recommendation for me I think. That is about the time their bodies can hold down certain things and they will be able to get it down properly."

Only one first-time mother. RP8 was firm in her conviction, and up front that 6 months was too long a waiting period to begin weaning an infant; she recommended 4 months as an alternative. One other mother reservedly indicated that it depended on the infant and how much the infant was satiated from consuming breast milk only. Notwithstanding, most of the mothers were in agreement with the recommendation by the Ministry of Health that solids should be introduced at 6 months, but many of the first-time mothers reported introducing solids ahead of 6 months. One mother chuckled noting that while she was advised by nurses that solids should be introduced at 6 months, she went ahead and did so at 3 months. This mother was not the only mother whose statements of support for weaning at 6 months contradicted her actions.

Rejection of weaning recommendations. RP10 while agreeing with the recommendation to begin weaning at 6 months, indicated that she would not be adhering to the recommendations. RP10 stated, "I will not wait until 6 months, because he is growing and he will want heavier food, so that his belly can be full."

While indicating the recommendations for weaning "can work", RP11 reported that when her infant was 5 months old she fed him breast milk mixed with rice cereal because he was not satisfied with breast milk only. RP13 does not agree with the recommendation on infant weaning, but she says she will wait until her infant is 6 months to introduce other foods to the formula and water she currently feeds her infant.

Research participants identified a variety of reasons to give infants solids ahead of 6 months. They are infant developmental and activity levels, child's interest in food, knowledge that other infants received solids earlier and they were fine, and that breast milk was not filling.

Infant interest in food. Infant interest in food was highlighted by some first-time mothers and another mother was experimenting with food with her infant. RP4 stated,

> "If I am eating, she will make noise and I will put a little in her mouth. She tastes it and if she wants more she will scream or make more noise and then I will continue and I know she likes it."

RP9 says her daughter is unsure how to process foods placed in her mouth. According to RP9 "She just has it (food) on her tongue, sticks out her tongue, probably trying to taste but she does not understand well yet how to chew."

Summary of Results

This chapter provided details of the recruitment of research participants as well as the demographics of the research participants, data collection procedure, and the results of the research. Quotations from research participants were used to present the research data. The trustworthiness of this research was also examined by detailing the steps taken to ensure credibility dependability, transferability, and conformability. I now present a summary of the key findings of my research based on each of the four research questions.

Research Question 1

1. There is little support for exclusive breastfeeding among first-time Antiguan and Barbuda mothers. Most mothers in this sample believe that exclusive breastfeeding is not practical. Consequently, exclusive breastfeeding was rare as only one mother had given her full support to exclusive breastfeeding. She was able to secure extended paid leave from work and the support of family to help meet her exclusive breastfeeding goals.
2. Research participants believe that the mixed feeding of infants prior to 6 months of age is inevitable and they practice that type of infant feeding. They report that mixed feeding – that is, the provision of foods other than breast milk, such as formula - is due to a number of challenging circumstances such as, increases in infant's appetite, inability of breast milk to satisfy infant, returning to work, short length of maternity leave, and concern for handling of breast milk at day care facilities.

3. Mothers who practiced mixed feeding expressed concern over constipation or reported that their infant experienced constipation. However, mothers viewed mixed feeding as being instrumental in soothing babies. Mixed feeding kept babies full longer and promoted longer sleep.
4. Maternity Leave is inadequate and determines the duration of exclusive breastfeeding. The time gap between the 6 months recommended for exclusive breastfeeding and the 3 months paid maternity leave is viewed by working mothers as a major deterrent to exclusively breastfeeding and a stimulus to premature weaning. For working mothers in the research sample, employment, and returning to work interrupted exclusive breastfeeding and facilitated the introduction of formula feeding and premature weaning.
5. Research participants believe that the current recommendation for mothers to exclusively breastfeed infants for the first 6 months of life should be shortened. Some recommended that exclusive breastfeeding be for a period of 4 months, because of the impracticability of exclusively breastfeeding for 6 months.
6. At least half of the participants did not breastfeed their infant for the first day or two after birth. Formula was introduced in these cases. Notwithstanding, all research participants reported initiating breastfeeding before leaving the hospital.
7. Maternity ward nurses informed all research participants of the WHO's breastfeeding recommendations but did not provide practical support. Nurses did not offer any guidance on the mechanics of breastfeeding newborns nor did they detail the full scope of this feeding option.

8. For many mothers breastfeeding was an emotional experience. It created joy and, when challenges were present, such as poor latching, the process became frustrating.
9. Most mothers reported experiencing physical discomfort but moving past it to continue exclusive breastfeeding for a period. Some mothers took short breaks from exclusive breastfeeding and fed their infants formula because of the physical demands of breastfeeding and the nipple pain experienced.
10. With time and growth of the baby, these first-time mothers began to question whether their infants were being satisfied with breast milk.
11. Three mothers weaned their babies at 4 and 5 months old. They introduced formula, water, teas, and solid foods ahead of 6 months.
12. Baby's interest in other foods encouraged mothers to introduce other foods into the infant's diet. Mothers experimented using other foods with baby as part of the natural and inevitable process of introducing new foods.
13. Grandmothers led in the introduction formula or other foods ahead of 6 months. Sometimes, grandmothers' influence on infant feeding decisions was a source of tension between some mothers and daughters.
14. Many of the participating mothers used the internet to gather guidance on infant feeding.
15. Mothers believe their sources of information on infant feeding to be accurate.

16. Research participants reported receiving follow up institutional support. This support is further to the instructions received at the hospital immediately following the birth of their infant.

Research Question 2

1. All research participants were knowledgeable of the benefits of exclusive breastfeeding and believed that exclusive breastfeeding is best because of the nutrients it provides infants, its ability to promote physical and cognitive growth, and its disease fighting properties.
2. All research participants reported challenges practicing exclusive breastfeeding. This included having to breastfeed every 2-3 hours and the insatiable appetite of infants for breast milk.
3. Infant's attachment to the breast was a risk of exclusive breastfeeding. and hindered mother's movement outside the home
4. Mothers says their schedule did not permit them to eat on time and to adequately focus on their nutrition which placed exclusive breastfeeding at risk in terms of supply. Frequent eating placed them at the risk of weight gain, compromising health.
5. Exclusive breastfeeding was demanding and took a toll on mother's health.

Research Question 3

1. Disapproval of mother's breastfeeding strategies by individuals in their social network, such as breastfeeding in public, hindered exclusive breastfeeding goals.

2. Maternal grandmothers have a strong influence in Antigua and Barbuda; their disapproval of breastfeeding practices has a significant influence on mother's introduction of formula and solids.
3. Some research participants reported institutional inconsistences among health professionals in enforcing exclusive breastfeeding recommendations. Some nurses at the clinics were lenient in enforcing exclusive breastfeeding recommendations and did not advise mothers to desist from giving infants formula.
4. Research participants reported that public policy is not supportive of the 6 months recommended for exclusive breastfeeding. Mothers had to engaged in their own negotiations with employers to facilitate extended time away from work to engage in breastfeeding.
5. Some stay-at-home mothers introduced formula and other foods because of concern over the ability of breast milk to satisfy their infants.
6. Mothers reported support from nurses, friends, family members – inclusive of infant's maternal grandmother and their partners to exclusively breastfeed.

Research Question 4

1. The majority of mothers agreed with exclusive breastfeeding and weaning recommendations, but many do not comply. They argue that infants are not satiated by breast milk and that infants respond positively to experimentations with other foods.
2. Before 6 months; those who had not yet initiated formula feeding had introduced water or teas, and some formula; either because the milk had not yet arrived or

because the baby was being observed for a few hours in the Neonatal Intensive Care Unit.

3. With growth infants are interested in other foods.

In Chapter 5, I provide my interpretation of the findings of the research. Details of the limitations of this research, implications for social change and recommendations for future research will also be provided in Chapter 5. Recommendations for practice are also described in that chapter.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this phenomenological qualitative research was to explore the perceptions of 13 first-time mothers in Antigua and Barbuda on exclusive breastfeeding and weaning. Similar to other countries globally, Antigua and Barbuda's exclusive breastfeeding rates are low (Victora et al., 2016). According to the Government of Antigua and Barbuda (2012), failure to comply with the recommendation to exclusively breastfeed potentially exposes infants to over- and under-nutrition and decreases immunity to disease. Understanding the facilitators and barriers to exclusive breastfeeding, as experienced by first-time mothers in Antigua and Barbuda, presents an opportunity for public health officials to address the challenges identified with a view to promoting exclusive breastfeeding. By being aware of the enablers of exclusive breastfeeding identified by the research participants, public health officials can be strategically use them to achieve improved national exclusive breastfeeding goals and delay weaning until after an infant has achieved 6 months of age. Building Antigua and Barbuda's capability to enhance exclusive breastfeeding rates improves the odds of achieving Victora et al.'s (2016) recommendation for tailor-made interventions that are specific to Antigua and Barbuda

Participants in this research were recruited from five urban public health centres using purposeful sampling. The research participants were first-time mothers, 18 years and older, with a single healthy infant between the ages of 1 and 6 six months, and not currently pregnant. The interviewing of new research participants stopped when

saturation –was achieved. Based on the literature review, there is limited information on exclusive breastfeeding pertaining to Antigua and Barbuda and generally for the English speaking Caribbean, making this study potentially very useful to the sub region. The analysis of the research results indicated a lack of adequate lactation education among mothers, limited lactation counselling services for mothers, minimal statutory maternity leave and low educational levels on breastfeeding among nurses. In the absence of critical social and technical support, mothers in the research engaged in premature weaning influenced by a perceived insufficiency of milk, early return to paid employment, and encouragement from their infant's grandmother to introduce other foods. The research findings are reflective of finding of other studies on breastfeeding and weaning.

Interpretation of the Findings

In this section, I present my general interpretation of the research. I also examine the themes that emerged in answering the four research questions and how the findings relate to existing research on breastfeeding.

Research participants were candid in the way they discussed their breastfeeding experiences. They were very willing to share their experiences and enjoyed talking about their infants. They were very expressive about the challenges faced in attempting to achieve their exclusive breastfeeding goals and were open in expressing some of their frustration with trying to exclusively breastfeed their infant. The effort and planning required to exclusively breastfeed and the unique circumstances and temperament of their infants compelled most first-time mothers in the research group to feed their infants a few ounces of formula daily while predominantly breastfeeding for the balance of the day.

Overall, first-time mothers wanted the best for their infants and recognized that breastfeeding offered that opportunity. The challenges expressed by first-time mothers highlighted the need for greater professional, peer, and family support to help them achieve their exclusive breastfeeding goals. An institutional framework that provides requisite financial support would be helpful.

The TPB was the theoretical framework for this research. This theory presents a basis to analyze perceptions towards exclusive breastfeeding and weaning. First-time mothers question the adequacy of breast milk to satisfy their infant up to 6 months. Moreover, family members–specifically the mother's partner and the infant's maternal grandmother–were viewed by research participants as influential both as facilitators and barriers towards exclusive breastfeeding. These subjective norms as described under the construct of the theory of planned behaviour impact exclusive breastfeeding. Added to that, infant cues indicating interest in food act as a behavioural control, motivating mothers to prematurely introduce other foods to infants. The research findings validate the suitability of the theory used in this research.

Research Question 1

1. There is little support for exclusive breastfeeding among first-time Antiguan and Barbuda mothers**.** The practice of exclusive breastfeeding was not common among research participants because the practice of this behavior for a period of 6 months was viewed as challenging. Wagner et al. (2013) conceded that breastfeeding challenges are to be expected. The key, as espoused by many researchers, including O'Sullivan, Farver, & Smilowitz (2015), is for supportive efforts to be in placed in the hospital and in the

community to help mothers achieve exclusive breastfeeding goals. Exclusive breastfeeding in Antigua and Barbuda is not commonly practiced, and this is consistent with other research such as in Mauritius where exclusive breastfeeding prevalence was approximately 18% (Motee, Ramasawmy, Pugo-Gunsam, & Jeewon, 2013).

One research participant gave unreserved support to exclusive breastfeeding. That research participant self-negotiated financial support through extended leave from work for 22 weeks, and a supportive family facilitated exclusive breastfeeding for 5 months with the exception of feeding water at 3 months when her infant developed hiccups. This limited support for exclusive breastfeeding among research participants lends support to reports by the government of Antigua and Barbuda that only 30% of mothers are exclusively breastfeeding by 6 weeks postpartum. That one participant who approved of exclusive breastfeeding introduced formula to her infant just prior to her return to work. The literature acknowledged the trade-off mothers make between exclusive breastfeeding and economic activity (Daly et al., 2014; Radzyminski & Callister, 2015). Mothers lack the requisite lactation support needed at the community level to support exclusive breastfeeding. Mothers need access to a lactation consultant to help them successfully devise an action plan to achieve exclusive breastfeeding goals. Additionally, mothers are not thoroughly educated on breastfeeding. More information sharing is required at both the hospital and community levels so that when challenges present themselves, mothers have the requisite knowledge to confidently address them in conjunction with the requisite lactation support. The availability of a lactation consultant in the community would provide mothers with the requisite support. To show mothers that exclusive

breastfeeding can be achieved, it would be useful to advertise the value of breastfeeding, including testimonies of mothers who have successful breastfed.

2. Research participants believe that the mixed feeding of infants is inevitable and practice that type of infant feeding**.** Mixed feeding is a preferred practice for participants in this study based on a number of challenges they experienced. According to O'Sullivan et al. (2015), mixed feeding is a common phenomenon. They blame the practice on hospitals for facilitating formula feeding, which they argued is not supportive of exclusive breastfeeding. Research participants reported that the hospital provided infant formula. Additionally, the fear of hypernatremia, which is a real threat associated with exclusive breastfeeding, according to Staub and Wilkins (2013), also encourages mixed feeding. When mothers have such fear, the recommended option is an immediate discussion with a pediatrician or a lactation consultant. However, the unavailability of lactation support in the community does not support such consultations; consequently, mothers self-determine that mixed feeding is the appropriate course of action. They fear their infants are starving. Accessible lactation support is, therefore, required for mothers to discuss their challenges and concerns. Moreover, it would be useful for lactation consultants and other healthcare providers to discuss with mothers during pregnancy, and after child birth, strategies to ensure continuation of exclusive breastfeeding when returning to work. Mothers should also be exposed to advertisements on the value of breastfeeding, including testimonies of mothers who have successful breastfed.

3. Mothers who practiced mixed feeding expressed concern over constipation or reported that their infant experienced constipation. However, mothers viewed mixed

feeding as being instrumental in soothing babies. Mixed feeding kept babies full longer and promoted longer sleep. Mothers should expect to breastfeed infants several times during the day. According to the American Academy of Pediatrics (n.d), some newborns feed as often as every 1.5 hours, while others feed about every 3 hours. New mothers should, therefore, expect babies to eat often. Mothers find the practice of frequent breastfeeding burdensome at times. As a result, Walsh et al. (2015) indicated that mothers gravitate to formula feeding because it makes infants sleep better. However, parentally-controlled feeding, such as through the use of formula, is believed to be a contributor to later childhood obesity. The Government of Antigua and Barbuda (2012) has supported this argument and has contended that the low adherence to exclusive breastfeeding and the resulting early introduction of complementary foods leading to early weaning contributes to overnutrition. Overnutrition can lead to obesity and give rise to chronic noncommunicable or lifestyle diseases. Mothers may be sacrificing initial comfort at the risk of diseases in the long term. Mothers are not adequately educated on the eating patterns of infants, an understanding of which would create greater readiness to comply with breastfeeding of infants every-one to three hours.

Researchers such as Vandenplas et al. (2017) reported that infant formula can result in constipation. They recommended breastfeeding. Motee et al. (2013) also agreed, based on their research in Mauritius, that constipation is one of several reactions by infants to formula feeding. The perception of mothers that infants respond more positively to formula and the reported incidents of constipation suggest that mothers lack sufficient information on feeding options

to make informed decisions. Thorough education on breastfeeding is required not only of mothers but it would be prudent to educate adolescent in schools on breastfeeding as well to ensure that the coning generation in well informed and can make educated decisions on infant feeding. Educate continuously via the National Breastfeeding Committee – to include talks on breastfeeding recommendations at workplaces, schools and with day-care workers; plus interventions with nurses about ways to appropriately approach mothers and provide the necessary support when mothers express concerns with perceived insufficiency of breast milk.

4. Maternity leave is inadequate and determines the duration of exclusive breastfeeding**.** Employment and returning to work interrupted exclusive breastfeeding and facilitated the introduction of formula feeding and premature weaning. Research participants argued that there is a fundamental incompatibility between their statutory 3 months paid maternity leave and the 6 months they are required to exclusively breastfeed. Skafida (2012) presented the Swedish model of 13 months of maternity leave with 80% pay as a viable recommendation to support exclusive breastfeeding. Countries such as Cuba have high exclusive breastfeeding rates due to the public policy of paid maternity leave for 18 weeks on full pay (ILO, 2013). Cuban mothers receive an additional 40 weeks leave at 60% pay with guaranteed job security. The maternity leave provision in Antigua and Barbuda is inadequate; an extended maternity leave to at least 6 months could delay the premature introduction of formula feeding.

Employment potentially interrupts breastfeeding especially when mothers return to full-time employment ahead of baby attaining 6 months of age. Many first-time

mothers make up the workforce in Antigua and Barbuda. The literature supports the contention of research participants that returning to work interrupted exclusive breastfeeding. A Scotland-based study found that employment and the early return to work are associated with a shorter duration of breastfeeding, and first-time mothers were found to be more likely to stop breastfeeding sooner (Skafida, 2012). Several studies have confirmed the connection between mothers returning to work and the introduction of infant formula (Motee et al., 2013). Daly et al. (2014) in their review of the Health Department of Western Australia triennial nutrition population survey, noted that women identified returning to work as a primary barrier to exclusive breastfeeding. Additionally, according to Radzyminski and Callister (2015), the resulting separation of mother and child interrupted the routine of breastfeeding on demand and the supply of breast milk. This results in low milk supply which can potentially trigger concerns of insufficiency of milk, discussed earlier in this section. The result is often mothers resorting to formula feeding. A review of the statutory maternity leave requirements, to extend it to 6months, can help alleviate the challenge that returning to work places on exclusive breastfeeding. There is a lack of appropriate consideration by policy makers between the conflicting demands of employment and exclusive breastfeeding. In any society like the US, where there is no paid maternity leave, there is no consideration given to supporting the lives and health of the new mother and baby (Burtle and Bezruchka, 2016). Supportive employment policies that are in line with company resources, such as, flexible hours, working from home options, and appropriate facilities to express milk or breaks to breastfeed babies are additional considerations to support exclusive breastfeeding among

working mothers (Dinour and Szaro, 2017). Recognition of employers who support breastfeeding mothers also helps to promote exclusive breastfeeding according to the Centre for Diseases Control and Prevention (n.d). Therefore, incentivize employers to be breastfeeding friendly; and recognize – perhaps by the National Breastfeeding Committee during their annual observance of breastfeeding week – those employers who made provisions for mothers to comfortably continue breastfeeding by providing flexible working hours, extended lunch breaks, breaks at work for expression of the milk, and lactation rooms.

5. Research participants believe that the current recommendation for mothers to exclusively breastfeed infants for the first 6 months of life should be shortened. Some recommended that exclusive breastfeeding be for a period of 4 months, because of the impracticability of exclusively breastfeeding for 6 months. Breastfeeding is a complex behavior, and, while additional investigation may be required, the vast volume of research on breastfeeding lauds its benefits. Even when inconsistencies with the research methodology and sample size are taken into consideration, Strong and Lee (2014) argued that the benefits of breastfeeding cannot be dismissed. Infant intestinal walls are not fully developed prior to 6 months of age and their eating reflexes are not sufficiently prepared for solids prior to 6 months (Rowland et al., 2013). Yet, Motee, Ramasawmy, Pugo-Gunsam, & Jeewon (2013) noted that mothers generally begin introducing solids by 4 months. A reduction of the exclusive breastfeeding age from 6 months to 4 months would legitimize what appears to be a global practice of early weaning. Notwithstanding, Victora, et al (2016), surmised that breast milk remains the optimal nutrition for infants

from births to 6 months of age - supporting optimal development and good health. By addressing inadequate social support in the community of mothers, calls for a shorter exclusive breastfeeding period would likely lessen. The implementation of supportive employment policies inclusive of extended maternity leave, flexible hours, working from home options, and appropriate facilities to express milk or breaks to breastfeed babies would also address concerns over the lengthy period of exclusive breastfeeding.

5. At least half of the participants did not breastfeed their infant for the first day or two after birth. Formula was introduced in these cases. Notwithstanding, all research participants reported initiating breastfeeding before leaving the hospital**.** The literature (UNICEF, 2016) on breastfeeding indicates that delayed breastfeeding is not uncommon and occurs often among first-time mothers. Dewey et al. (2003) noted a prevalence of delayed onset of copious milk production: 33% among first-time versus 5% among mothers with multiple children. The birthing process can also impact initial feeding of infants. According to Dewey et al. (2003), infants exposed to pain medication or epidural anesthesia during the labor process demonstrated fewer breast-seeking reflexes and reduced rooting and suckling scores, consuming less milk at initial feedings as a result. Some babies are fed formula initially while at the hospital, which can arguably be seen as medical intervention. Notwithstanding, the WHO's (2016) recommendation is for breastfeeding within the first hours after birth, an element of the 10-step Baby Friendly Hospital Initiative (BFHI).

Research participants received infant breastfeeding advice and information on exclusive breastfeeding recommendations from the nurses at the hospital, and initiated

breastfeeding at the hospital. Phillip (2011) found that first-time mothers saw hospital staff supports as crucial to breastfeeding success. Researchers such as Ma and Magnus (2012) argued that first-time mothers are more likely to exclusively breastfeed when supported by hospital staff and when breastfeeding is practiced in the hospital. Mothers who received the support of nurses and pediatricians, and who benefited from hospital staff counseling services, have a more positive attitude toward breastfeeding. The BFHI provides a comprehensive guide for hospitals to follow to ensure mothers receive the requisite support from hospital staff to successfully breastfeed. Among the several provisions of BFHI are to help mothers initiate breastfeeding within one half-hour of birth by showing mothers how to breastfeed and maintain lactation, even if they could be separated from their infants, and giving newborn infants no food or drink other than breast milk, unless medically indicated (UNICEF 2016). The implementation of BFHI status at the national hospital would also ensure adequate support for exclusive breastfeeding.

6. Maternity ward nurses informed all research participants of the WHO's breastfeeding recommendations but did not provide practical support. Nurses did not offer any guidance on the mechanics of breastfeeding newborns nor did they detail the full scope of this feeding option. Breastfeeding is a learned behavior. Mothers need to be educated on breastfeeding recommendations, including the reasons why, and taught how to breastfeed. Numerous researchers have shown that continuous breastfeeding is impacted by general knowledge of benefits and support from others (Dunn, Kalich, Hennin, & Fedrizzi, 2015; Inoue, Nurs, Binns, Katsuki & Ouchi, 2013; Walsh, Pincombe

& Henderson, 2011). Mothers in the research group say they were informed by hospital staff of breastfeeding recommendations but the effective practical application of breastfeeding mechanics was lacking. According to Phillip (2012), mothers considered hands-on help, patience, and the nurse's presence during feeding as essential components of a successful experience. First-time mothers also saw the involvement of hospital staff as being helpful in calming anxieties and increasing efficacy in breastfeeding (Phillip, 2011). Moreover, maternal perceptions of negative attitudes of hospital staff in a study by Radzyminski & Callister (2015), was found to be predictive of breastfeeding failure at 6 weeks postpartum. Radzyminski & Callister (2015) further asserted that nurses' knowledge about infant feeding tends to be deficient, specifically in areas such as lactation physiology and glucose feedings. This research finding by Radzyminski & Callister (2015) is based on mothers' reports that nurses appear uninformed and unsupportive, and that their advice appears superficial and inadequate. Nurses must be trained to adequately assist mothers and help them to easily solve breastfeeding issues such as failure to latch, physiology of breastfeeding, and perceived insufficiency of milk. Additionally, the availability of lactation consultants in the community with whom mothers can discuss their concerns would help promote exclusive breastfeeding. These consultants should have the capacity to conduct follow up visits and telephone calls during the first 6 months of infancy. The implementation of BFHI status at the national hospital would also ensure adequate support for exclusive breastfeeding.

7. For many mothers breastfeeding was an emotional experience. It created joy and, when challenges were present, such as poor latching, the process became frustrating. The

literature confirms that the post-partum period can be one of anxiety. Fu et al. (2014) confirmed from their research that the immediate postnatal period is often overwhelming for first-time mothers. In particular, the milk supply is usually not well established until day 3 or 4 (Fu et al., 2014). This can create frustration and challenge maternal confidence in breastfeeding. Strong maternal confidence has been shown to overshadow vulnerabilities and positively impact a mother's breastfeeding success. If a mother has confidence in her ability to feed her baby, she is more likely to exclusively breastfeed. Fu et al. (2014) argued that professional lactation support should be initiated soon after birth and continued for a minimum of 1 month postpartum. While breastfeeding is seen a natural act, it is also a behavior that is learnt (WHO, 2016). Although the research participants were willing to breastfeed, mothers lack practical social support in the community. These lactation consultants are required in the community to help mothers effectively address breastfeeding challenges such as latching. These consultants should have the capacity to conduct follow up visits and telephone calls during the first 6 months of infancy.

8. Most of these mothers reported experiencing physical discomfort but moving past it to continue exclusive breastfeeding. Some mothers took short breaks from exclusive breastfeeding and fed their infants formula because of the physical demands of breastfeeding and the nipple pain experienced**.** Nipple soreness is a common complaint of first-time mothers and has the potential to jeopardize exclusive breastfeeding. Brown et al. (2014) and Phillips (2011) argued that physiological difficulties while breastfeeding impact perceptions towards breastfeeding. Ultimately, exclusive breastfeeding duration

and weaning is impacted by physical discomfort such as nipple pain. The pain also undermines a mother's breastfeeding confidence, and by extension, her perceptions towards exclusive breastfeeding (Williamson, Leeming, Lyttle, & Johnson, 2012). The 500 participants in Williamson et al.'s (2012) research reported difficulties interpreting the pain they experienced during feeding. These mothers reported that the pain they experienced threatened their emerging maternal identities (Williamson et al., 2012). They also reported that those emotions often fluctuated considerably from feed to feed and were not permanent. The fact that many research participants experienced nipple pain for an extended period following the infant's birth is an indication that latching was not properly established. When mothers experience nipple pain for extended periods it suggests a lack of social support in the form of lactation consultancy. Adequate lactation consultants – with the capacity to conduct follow up visits and telephone calls during the first 6 months of infancy – are required at the community level to support the breastfeeding goals of mothers.

Mothers reported that they turn to formula feeding to get relief from the physical demands and pain of breastfeeding. First-time mothers in a research conducted by Walsh.et al (2015) reported several breastfeeding challenges and confirmed that they feed their infants other foods to reduce their personal time breastfeeding. According to Walsh et al. (2015) these mothers viewed it as 'sharing the load'. O'Sullivan et al. (2015) do not advise the introduction of formula on the basis of not having the time to exclusively breastfeed. A better option would be for first-time mothers to have the support of a

lactation consultant to assist with latching challenges to reduce nipple pain, and family support with infant care.

9. With time and growth of the baby, first-time mothers began to question whether their infants were satisfied with breast milk. Mothers perceived an insufficiency of breast milk as their infants develop. Research participants identified a lack of baby satisfaction with breast milk as a main reason for not exclusively breastfeeding and for engaging in premature weaning. A major concern of first-time mothers is their perception that their infants are not getting enough during milk breastfeeding; so they supplement breastfeeding with formula. The insecurities expressed by mothers over the sufficiency of their breast milk are well documented in the literature (Robert, Coppieters, Swennen,& Dramaix, 2014) and is identified as a leading reason for cessation of breastfeeding and weaning. Based on the findings of a national research on infant feeding half of the participating mothers identified insufficient milk as the reason they stopped breastfeeding, The United States Surgeon General Report (2011) attributed a lack of confidence in breastfeeding and a poor understanding of the composition of lactation for perceived insufficiency of milk. The phenomenon of insufficiency of breast milk is a common concern of new mothers and concerned mothers are advised to seek help from a lactation consultant or pediatrician. Mothers are also encouraged to monitor the number of wet diapers, weight gain, and skin appearance to determine if baby is getting sufficient milk (Ahmed, et al., 2014). This recommendation should help alleviate mother's anxiety concerning the sufficiency of breast milk to nourish her infant. Mothers in the research sample did not receive extensive information on potential challenges associated with

breastfeeding and hence did not have the requisite skills to effectively establish insufficiency of milk. They relied instead on frequency of eating, which the literature has established is normal for infants. It means therefore, in the absence of signs of dehydration exclusive breastfeeding should continue. However, mothers lack adequate education on breastfeeding to make that determination. A revamp of the existing pre and post natal education program on breastfeeding is required. A reengineered national breastfeeding educational program must be comprehensive, provide full disclosure on the challenges of breastfeeding and present strategies to address them. Nurses must also be fully educated to achieve that objective.

Notwithstanding, health organizations, including the World Health Organization (2016), have consistently asserted that breast milk is sufficient for infants and, as an optimal source of nutrition for infants between birth and 6 months. Based on the research of Roberts, Coppieters, Swennen, and Dramaix (2014), the literature shows that the real lack of milk only affects 1–5% of mothers. Research participants genuinely perceive that their infants are not satisfied with breastfeeding and cite frequent infant crying after feeding, short periods of sleep, and extended sucking at the breast. When mothers become anxious by these infant behaviors, premature weaning appears to them to be a viable solution. Babies breastfeed less when fed other foods and so less milk is produced (Gunnell, Neher, Guthmann, 2016). Perceived insufficiency of milk explains why many stay-at-home mothers in the research group engaged in mixed feeding. According to RP10, “I gave him the formula when he was 2 months. I started the formula because the breast milk did not full him enough, because every time he wants the bubby (breast); he

wanted more food." Mothers require comprehensive education on breastfeeding and social support specifically in the form of lactation consultants to address concerns and anxiety. Lactation consultants are required throughout the public health system inclusive of the hospital and clinics. These consultants should have the capacity to conduct follow up visits and telephone calls during the first 6 months of infancy.

10. Three mothers weaned their babies at 4 and 5 months old. They introduced formula, water, teas, and solid foods ahead of 6 months. The ignoring of weaning recommendations, as indicated by the sample in this research, is consistent with the literature. Research by Motee et al. (2013) and Walsh et al. (2015) supports this assertion of early weaning among first time mothers in this research. Gunnell, Neher, Safranek, & Guthmann (2015) concluded that parental knowledge of breastfeeding recommendations was not sufficient to delay introduction of solids. According to Tuan, Nguyen, Hajeebhoy, and Frongillo (2014), more research is also needed to understand the likely complex pathways between the awareness of the benefits of breastfeeding and the actual practice of breastfeeding. Instead, sustained discussion with and support of mothers to engage in optimal breastfeeding is the preferred strategy for delaying premature introduction of other foods. This support can be executed through continuous education via the National Breastfeeding Committee – to include talks on breastfeeding recommendations at workplaces, schools (where adolescents can be reached), and with day-care workers; plus interventions with nurses about ways to appropriately approach mothers and provide the necessary support when mothers express concerns with perceived insufficiency of breast milk, with a view to achieving the desired outcome.

11. Baby's interest in other foods encouraged mothers to introduce other foods into infant diet. Mothers experimented using other foods with baby as part of the natural and inevitable process of introducing new foods. foods. There some debate on the veracity of infant led weaning but Walsh et al. (2015) found that infants actually had to be prodded to eat food, as they often did not know what to do with it. This raises questions of the validity of baby-led weaning prior to 6 months of age. One research participant, RP9, did confirm that her 5 month old infant seemed unsure what to do with food in her mouth. RP9 concluded the recommended age for weaning should be 6 months. Just because the baby is showing an interest in food does not mean he/she is actually ready to eat. There are questions: whether baby is physically ready to chew and swallow. Mothers in the research conducted by Walsh et al. (2015) raised that issue and, also, noted that they were occupied with concerns of allergic reactions when introducing solids prematurely.

Mother's experimentation with new foods is a natural way of dealing with the inevitability of weaning. Mothers appear eager to engage their infant in sampling other foods. According to the US Surgeon General Report (2011), breastfeeding education is sometimes not easily understood by mothers. This may hold true in some instances but mothers in this research group admitted to knowing the guidelines for weaning while doing the contrary. Arguably, mothers may not fully understand the recommendations. Walsh et al. (2015) concluded from their research that some mothers like the idea of their infant being 'first' and developmentally advanced. Additionally, some mothers see experimentation with other foods as a fun activity for their baby. Moreover, mothers experiment with new foods because they have to wean their infants to return to paid

employment and because they deem breastfeeding to be insufficient. Experimenting with new foods is a natural exploration of ways to deal with the inevitable. Notwithstanding mothers lack education on the full ramification of early weaning from the breasts. The comprehensive education of mothers on breastfeeding is required.

12. Grandmothers led in the introduction formula or other foods ahead of 6 months. Sometimes, grandmothers' influence on infant feeding decisions was a source of tension between some mothers and daughters. A woman's mother plays an influential role in the continuation of breastfeeding (Joshi, Trout, Aguirre & Wilhelm 2014). Notwithstanding, when grandmothers seek to influence infant feeding decisions, sometimes it could be a source of tension between mother and daughter. Agunbiade and Ogunleyein (2012) found in their research that some infants' grandmothers pressured their daughters to prematurely stop exclusive breastfeeding. Some research participants encountered similar experiences with their infant's grandmother. These grandmothers wanted their daughter to introduce other foods into the infant's diet prematurely. This was sometimes a source of contention, especially when mothers wanted to comply, as much as possible, with exclusive breastfeeding recommendations. Agunbiade and Ogunleyein (2012) reported that the grandmothers in their research were concerned more about their daughter's health - recuperating from childbirth and getting enough sleep - rather than dealing with the seemingly demanding feeding schedule of exclusive breastfeeding. Susin et al (2005) concluded that the abandonment of exclusive breastfeeding 4 weeks postpartum was strongly linked with daily contact with maternal grandmothers. These grandmothers recommended early weaning with the introduction of solids and water along with

breastfeeding. Early weaning, these grandmothers argued, supported rapid child growth to allow mothers to resume work outside the home (Agunbiade and Ogunleyein, 2012). Susiloretni, Hadi, Prabandari, Soenarto, and Wilopo (2015) also confirmed that grandmothers negatively impact exclusive breastfeeding and encourage the use of foods other than breast milk. A more recent study, conducted by Negin, Coffman, Vizintin, and Raynes-Greenow (2016), which reviewed existing research on breastfeeding, affirmed the capacity of grandmothers to influence exclusive breastfeeding. Moreover, they concluded that the negative views of grandmothers reduced the likelihood of breastfeeding by 70%, while positive views encouraged breastfeeding by 12%. Arguably, in instances where mothers do not want to breastfeed, the negative view of the infant's grandmother toward breastfeeding would be highly influential.

The literature also confirms that first-time mothers cited tension caused by differences in the advice they received from different people. The research of Hong Lee, Durham, Boot, & Sychareun, (2013) provided corroboration. While grandmothers may view breastfeeding as essential, they do not emphasize exclusive breastfeeding (Agunbiade, and Ogunleyein, 2012). The inclusion of grandmothers in educational discussions on breastfeeding may be helpful in encouraging exclusive breastfeeding. It may be necessary to develop programs to educate grandmothers, fathers, and significant family members on breastfeeding.

13. Many of the participating mothers used the internet to gather guidance on infant feeding. Internet-based breastfeeding interventions have highlighted the value of this medium in promoting exclusive breastfeeding. The research of Giglia, Cox, Zhao, &

Binns (2015) underscored the profound impact of the teaching and support capacities of the Internet to help mothers achieve their exclusive breastfeeding goals. These researchers concluded that the Internet may be a useful media to promote exclusive breastfeeding. They recorded that Internet-based, breastfeeding support intervention extended the breastfeeding period. The pervasiveness of the Internet and the interest of mothers in seeking breastfeeding information online present an invaluable opportunity for Antigua and Barbuda to promote exclusive breastfeeding via this medium. Ahmed, Roumani, Szucs, Zhang, & King (2015) also agreed that the Internet is promising as an avenue to promote exclusive breastfeeding. Walsh et al. (2015) offered a different perspective and found that first-time mothers had a preference for information from peers even while utilizing the internet. Fu et al. (2014) also asserted the influence of peers in face-to-face conversation or on the telephone. Notwithstanding, the use of social media platforms where mothers can share breastfeeding experiences can potentially serve as a useful vehicle to promote breastfeeding.

14. Mothers believe their sources of information on infant feeding to be accurate. First-time mothers in this research identified a number of sources providing information on breastfeeding - the Internet, family, friends, and healthcare providers were their preferred choices, Researchers like Walsh (2015) indicate that mothers utilize the internet and trust the views of peers.

15. Research participants reported receiving follow up institutional support, further to the instructions received at the hospital, immediately following the birth of their infant**.** First-time mothers need the support of health care officials to achieve success in

exclusive breastfeeding. Researchers such as Ma and Magnus (2012) argued that first-time mothers are more likely to exclusively breastfeed when supported and supervised by hospital staff. Mothers lack the requisite social support to adequately practice exclusive breastfeeding. The provision of lactation consultants throughout the public health system, inclusive of the hospital and clinics, would provide the requisite support. These consultants should have the capacity to conduct follow up visits and telephone calls during the first 6 months of infancy.

Research Question 2

1. All research participants were knowledgeable of the benefits of exclusive breastfeeding, and believed that exclusive breastfeeding is best because of the nutrients it provides infants, its ability to promote physical and cognitive growth, and its disease fighting properties. Knowledgeable of the benefits of exclusive breastfeeding, research participants believe the breast is best because of its nutrients, ability to promote physical and cognitive growth, and its immunity and antibiotic properties**.** The literature confirms that breast is best – offering protection against morbidity and mortality. Further, the literature confirms that mothers are generally knowledgeable about the benefits of exclusive breastfeeding, (Hong Lee, et al., 2013). The participants in this research focused mostly on the short term and did not recall long-term benefits. Positive outcomes for IQ, educational attainment, and income-earning power into adulthood are among the long-term benefits associated with exclusive breastfeeding (Victora et al., 2016). Mothers lack comprehensive education on breastfeeding. Educating mothers on the far-reaching benefits of exclusive breastfeeding can help in promoting compliance. To realistically

achieve the comprehensive education of mothers, there is a need to revamp pre- and post-natal education on breastfeeding; making lessons comprehensive, frank, open, and free of judgment. Healthcare personnel providing prenatal breastfeeding classes should provide full disclosure on the wide ranging short, medium, and long-term benefits of breastfeeding. Equally, nurses must be fully educated in breastfeeding to adequately support mothers.

2. All these mothers also reported challenges practicing exclusive breastfeeding. This included having to breastfeed every 2-3 hours and the insatiable appetite of infants for breast milk. The literature is filled with the accounts of mothers speaking to the challenges of breastfeeding. When mothers encounter difficulties with breastfeeding, inclusive of the burden of having to breastfeed infants on average every 2 to 3 hours, they may cease breastfeeding. This leads to early weaning. First-time mothers in this research appeared unprepared and possibly never fathomed breastfeeding being anything but easy and natural. Phillips (2011) appeared to come to the same conclusion; in her phenomenological research with first-time mothers. She determined there was clearly a need for full disclosure of breastfeeding challenges by healthcare professionals. Nurses, according to Radzyminski and Callister (2015), are conflicted about how much information they should share with mothers. By not sharing, nurses leave mothers unsure about what questions to ask health care providers, leading to reliance on family and friends who may not provide accurate information. Health care providers must provide full disclosure on breastfeeding to mothers. There is clear need for nurses who attend to women and children to be fully educated on breastfeeding including the full benefits of

breastfeeding and how to effectively address breastfeeding challenges experienced by mothers, especially first-time mothers.

3. Infant's attachment to the breast was a risk of exclusive breastfeeding. and hindered mother's movement outside the home**.** Infants enjoy breastfeeding and, as a result, develop an attachment to the breast. Research participants identified infant attachment to the breast as a major deterrent to exclusive breastfeeding.

The literature indicates that breastfeeding promotes bonding between mother and infant which is necessary to establish exclusive breastfeeding. It is for this reason that UNICEF (2016) recommended skin-to-skin contact between mother and child just after birth to promote exclusive breastfeeding. It is also the reason why WHO (2015) and UNICEF (2016) have encouraged joint rooming of mothers and infants in hospital rooms after delivery under the Baby Friendly Hospitals Initiative (BFHI).

However, the Office of the Surgeon General (2011) echoed the concerns of participants in this research when it reported that mothers believed their freedom and independence were threatened by the commitment to breastfeeding. This concern is contradictory to the spirit of exclusive breastfeeding. Mothers' education on breastfeeding is lacking and can benefit from a nationally revamped pre- and post-natal educational classes. Educated nurses are required to address mothers' concerns, and discuss upfront the implications and expected commitments of exclusive breastfeeding. To achieve this, the education of all nurses who attend to women and children on the mechanics of breastfeeding, the full benefits of breastfeeding, and how to effectively

address breastfeeding challenges experienced by mothers, especially first-time mothers, is necessary.

4. Mothers says their schedule did not permit them to eat on time and to adequately focus on their nutrition which placed exclusive breastfeeding at risk in terms of supply. Frequent eating placed them at the risk of weight gain, compromising their health. The literature does not highlight a special diet for mothers who are exclusively breastfeeding. Lactating mothers are expected to eat healthy and balanced meals like the rest of the population. The literature has, also, established that it is the amount of sucking that the baby does that determines the breast milk supply. The more the baby breastfeeds, the more milk is produced. Breast milk is produced even when mothers are not eating properly. But contrary to the belief of research participants that there is no association between a mother's nutrition and breastfeeding. Lactating mothers need to keep hydrated and eat a balanced diet to maintain optimal health. Ongoing discussion with a lactation consultant post-partum is necessary to address mother's questions on breastfeeding as the need arises. Adequate and comprehensive education on breastfeeding is also required for mothers.

5. Exclusive breastfeeding was demanding and took a toll on mother's health. Motee et al. (2013) affirmed the concerns of research participants by noting that frequent breastfeeding every 2 hours on a daily basis can lead to fatigue and back pain. Such experiences have been noted to undermine a mother's self-efficacy with regard to breastfeeding, and promote early cessation. Family support with household chores and caring for baby can help reduce the strain on mothers. Additional social support via

lactation consultations would also be beneficial. These lactation consultants should be provided throughout the public health system inclusive of the hospital and clinics. These consultants should be accessible to mothers during the first 6 months postpartum.

Research Question 3

1. Disapproval of mother's breastfeeding strategies by individuals in their social network, such as breastfeeding in public hindered exclusive breastfeeding goals. The disapproval of family and friends of mother's breastfeeding approach can also present a challenge to exclusive breastfeeding. Easily accessible postpartum lactation consultation is essential to minimizing the influence of disapproval from family and friends. This suggestion finds added currency based on Scott et al. (2015) warning that perceived social norms have the potential to be a strong influence on breastfeeding outcomes, even more so than a woman's attitude and knowledge.

2. Some research participants reported institutional inconsistences among health professionals in enforcing exclusive breastfeeding recommendations. Some nurses at the clinics were lenient in enforcing exclusive breastfeeding recommendations and did not advise mothers to desist from giving infants formula**.** Some mothers reported that some nurses at the community clinics were lenient in enforcing exclusive breastfeeding recommendations. Not only did they not advise mothers to desist from giving infants formula, they advised them to introduce water to reduce the risk of constipation. Of note, some nurses at the community clinics caution mothers on early weaning. Whenever nurses acquiesce to formula feeding, except when medically required as in cases when mother has HIV (UNICEF, 2011), they are subtly communicating to mothers that

exclusive breastfeeding is inadequate. O'Sullivan et al. (2013) concurred. They noted that, when trying to address mothers' concerns about milk supply, suggesting the use of infant formula as a temporary substitute sends the wrong message to mothers and their family. O'Sullivan et al. (2013) asserted that health care providers in recommending formula are indicating that the biological process of breastfeeding is inadequate to nourish infants. To ensure nurses have the requisite knowledge to support mothers they must be fully educated on breastfeeding. Nurses, by disapproving of and discouraging formula feeding, can send a clear and consistent message that breastfeeding is the optimal nutrition for infants except when there are medical exceptions. To do otherwise is to create doubt in the minds of mothers. Shifraw et al. (2015) found an association with antenatal and postnatal counseling and better exclusive breastfeeding practice. Adequate social support for mothers through the provision of lactation consultants throughout the public health system inclusive of the hospital and clinics is necessary. These consultants should have the capacity to conduct follow up visits and telephone calls during the first 6 months of infancy.

3. Mothers report support from nurses, friends, family members – inclusive of infant's maternal grandmother and their partners to exclusively breastfeed**.** A mother's social network can be formidable in encouraging exclusive breastfeeding. Moreover, Hongo, Nanishi, Shibanuma, and Jimba (2015) argued that multiple layers of support to mothers provided support to breastfeeding. They concluded that breastfeeding without formula at 1 month was positively associated with the number of persons in social contact supporting breastfeeding. Close to half of the Nigerian mothers participating in

Agunbiade and Ogunleyein's (2012) research credited their infant's grandmother with encouraging breastfeeding. Additionally, 84% of mothers credit their mothers as an influential factor in their breastfeeding decision (Agunbiade and Ogunleyein, 2012). That same research, though, noted that grandmothers did not emphasize exclusive breastfeeding, although the grandmothers viewed breastfeeding as necessary for an infant's overall health and for bonding between mother and child. When grandmothers shared their confidence in breastfeeding and their practical knowledge, this actively increased the likelihood that their daughters would breastfeed exclusively**.** To ensure that family members provide adequate and effective support to secure exclusive breastfeeding outcomes, the family must also be exposed to breastfeeding education. Currently, the extended family is not routinely included in breastfeeding classes and are lacking in breastfeeding education. It is, therefore, necessary to engage the extended family, inclusive of infant's father and grandparents, in prenatal clinic discussions on infant feeding; clearly identifying the negative impact of bush teas, porridge, and cereal in the fight against chronic diseases – including obesity.

Research Question 4

1. The majority of mothers agree with exclusive breastfeeding and weaning recommendations, but many do not comply. They argue that infants are not satiated by breast milk and that infants respond positively to experimentations with other foods. Some research participants agree with the recommendation of health officials that weaning should start after a baby is 6 months of age. Some place qualifications on their agreement due to challenges expereinced. At 6 months of age, the WHO (2016) advised

that breast milk alone is no longer nutritionally sufficient for infants. WHO (2016) has asserted that this is the beginning of a vulnerable period for many children as they are at risk of not receiving adequate nutrition, setting the stage for malnutrition. Research by Walsh et al. (2015) corroborates rejection of weaning recommendations by first-time mothers. They noted that mothers who waited to introduce solids spoke of an easy transition to solids. This could be an interesting selling point to present to mothers in revamped comprehensive and candid national pre and post-natal breastfeeding educational programs. Moreover, a revised maternity leave period which is at least 6 months in duration would create an environment to facilitate exclusive breastfeeding

Limitations of the Study

The goal of this qualitative phenomenological study was to provide detail-rich information to understand the human experience of exclusive breastfeeding and weaning. Based on the small size of the sample, the data results lacked significant frequency therefore, the findings cannot be used to generalize the entire population in Antigua and Barbuda. Another inherent limitation is that the research focused only on first-time Antiguan and Barbudan mothers who utilized the public health facilities. Excluded from this research are the infant feeding practices of first-time mother who utilise the offices of private physicians for child wellness and immunization. Although, Onah, et al. (2014) concurred that affluent mothers have low exclusive breastfeeding rates, the breastfeeding experiences of that group would have provided further context to the exclusive breastfeeding practices and weaning of first-time mothers in Antigua and Barbuda.

Additionally, all the research participants had an uncomplicated vaginal delivery. The experiences of mothers who had their babies via caesarean section was not part of the scope of this research. That group of mothers because of the level of pain experienced may not readily be physically able to breastfeed in the first few days immediately after birth. When breastfeeding is delayed after birth, the possibility of not continuing is strong.

Implications and Recommendations

This qualitative, phenomenological research focused on the perceptions of 13 first-time mothers to exclusive breastfeeding and weaning. Out of these 13 mothers, none met the classical definition of exclusive breastfeeding, whereby infants receive breast milk only and no other liquids except medication or vitamins. Either formula was introduced for a brief period following birth or thereafter, or water or teas were also given in addition to breast milk. Notwithstanding, two mothers indicated they exclusively breastfed for a period, and one indicated that she was at the time of questioning her decision. She had intention to introduce formula and other foods shortly. Only a few mothers in the research engaged in exclusive breastfeeding. Research participants lacked adequate education on exclusive breastfeeding including the long-term benefits of that practice and how to overcome some of its inherent challenges. Therefore, educational interventions designed to address the reasons for not exclusively breastfeeding, such as insufficiency of milk, infant led weaning, returning to work could help reduce the low compliance with exclusive breastfeeding. Determining a more accurate current rate of exclusive breastfeeding and weaning in Antigua and Barbuda and establishing the key

facilitators and barriers to exclusive breastfeeding would help with crafting national breastfeeding promotion policies. These policies would factor key impediments to exclusively breastfeeding and promote the key facilitators. The results of this study showed the key role played by nurses at the hospital and the clinics in influencing breastfeeding patterns. A greater understanding of that their supporting role is required.

Positive Social Change

This research points to the need for greater social support for first-time mother at the community level particularly via the availability of lactation consultants. In addition, mothers require more education on breastfeeding. Nurses must be trained to adequately assist mothers and help them to easily solve breastfeeding issues such as failure to latch and perceived insufficiency of milk. Establishing BFHI would be a natural progressing to the training of nurses. An extension of the maternity leave period is also necessary to support national excusive breastfeeding outcomes. Recommendations in keeping with the theory of planned behaviour using two of its key constructs - perceived behavioural control, and subjective norms – can positively influence the perception of first time mothers on exclusive breastfeeding and weaning.

Perceived Behavioral Control

1. Revise the maternity leave period with a view towards extending it to at least 6 months.
2. Implement supportive employment policies inclusive of extended maternity leave. flexible hours, working from home options, and appropriate facilities to express milk or breaks to breastfeed babies.

3. Initiate the BFHI status at the national hospital to ensure adequate support for exclusive breastfeeding.

Subjective Norms

1. Revamp the national pre- and post-natal education of mothers on breastfeeding, making it comprehensive, frank, open, and free of judgment. Healthcare personnel providing prenatal breastfeeding classes should provide full disclosure on the challenges of breastfeeding and present strategies to address them. For example, nurses should openly indicate poor latching will bring about nipple pain and that the initial feeding of infant may feel weird. Nurses should adequately address mothers concern on the perceived insufficiency of breast milk and the need to resist infant led weaning.
2. Educate all nurses who attend to women and children on the mechanics of breastfeeding, the full benefits of breastfeeding, and how to effectively address breastfeeding challenges experienced by mothers, especially first-time mothers.
3. Provide lactation consultants throughout the public health system inclusive of the hospital and clinics. These consultants should have the capacity to conduct follow up visits and telephone calls during the first 6 months of infancy.
4. Engage the extended family, inclusive of infant's father and grandparents in prenatal clinic discussions on infant feeding; clearly identifying the impact of bush teas, porridge and cereal in the fight against chronic diseases – including obesity.

5. Discuss with mothers during pregnancy and after child birth strategies to ensure continuation of exclusive breastfeeding when returning to work.
6. Advertise the value of breastfeeding, including the use of testimonies of mothers who have successful breastfed.
7. Provide social media support with peers using these online platforms to share their successes and strategies for overcoming breastfeeding challenges.
8. Educate continuously via the National Breastfeeding Committee – to include talks on breastfeeding recommendations at workplaces, schools (where adolescents can be reached), and with day-care workers; plus interventions with nurses about ways to appropriately approach mothers and provide the necessary support when mothers express concerns with a perceived insufficiency of breast milk, with a view to achieving the desired outcome.
9. Incentivize employers to be breastfeeding friendly; and recognize – perhaps by the National Breastfeeding Committee during their annual observance of breastfeeding week – those employers who made provisions for mothers to comfortably continue. breastfeeding by providing flexible working hours, extended lunch breaks, breaks at work for expression of the milk, and lactation rooms.

Conclusion

Based on the research findings mothers want to give their children the best. The research participants recognized the optimal protection and nutrition provided to their babies via breastfeeding. However, they questioned the sufficiency of their milk for their

baby and they worry that the milk they express from their bodies will not be enough to satisfy their child. Additionally, research participants indicated and they receive little guidance within the public health system on how to maintain exclusive breast feeding for the recommended duration of time. The length of paid maternity leave, which is 3 months in Antigua and Barbuda, is incompatible with the recommended period of exclusive breastfeeding. Consequently, the research participants prematurely weaned their child off of the breast – and introduce other forms of nourishment. Better education and guidance is needed on how breast milk provides – literally, with some exceptions, everything the child needs, and how the intricate and dynamic make-up of breast milk makes it the infant's ultimate superfood. This includes a better understanding of the nutritional requirements of an infant between birth and 6 months. Mothers need to be more education on breastfeeding; linking bottle feeding to poor health outcomes in the long term (e.g. obesity) could potentially be a persuasive argument. They also need adequate professional and social support, inclusive of lactation consultant and nurses educated on breastfeeding. Including infants' grandmothers and significant family members such as infant's father in educational interventions could positively influence exclusive breastfeeding outcome. The education should begin before young people become young mothers. Early education of adolescents on breastfeeding could help introduce a culture of breastfeeding. Additionally, first-time mothers in Antigua and Barbuda need greater breastfeeding support. The days' support from the hospital immediately postpartum or during the visits to the clinics for child's immunization are not sufficient. Not if the goal of exclusive breastfeeding among mothers in Antigua and Barbuda for up to 6 months is

to be achieved. There needs to be more sustained breastfeeding interventions focussed on lactational and nutritional counselling for mothers during their post-partum hospitalization and shortly after they are discharged.

Moreover, public health organization in Antigua and Barbuda such as the Ministry of Health must introduce policies supportive of exclusive breastfeeding to effect change. It could start with the extension of the statutory maternity leave period, to at least match the recommended 6 months of exclusive breastfeeding. Moreover, the introduction into law the International Code of Marketing of Breast-milk Substitutes and the implementation of the Baby Friendly Hospital Initiative could send a clear message of the national importance of breastfeeding considering the positive effects on exclusive breastfeeding of these two policies in countries such Cuba and Peru. Antigua and Barbuda's adherence to international health policies on breastfeeding could strengthen exclusive breastfeeding rates and provide a strong framework to support infant and young childhood feeding (WHO, 2013). Countries in Latin American, e.g. Peru, that have fully implemented the Code are reporting elevated rates of exclusive breastfeeding as high as 75%. Among key elements of the Code are initiatives to reduce the use of breast milk substitutes. This means, at the retail level, no point-of-sale advertising, no giving of samples, no promotion device to induce sales directly to the consumer, no special displays, no discount coupons, no premiums, no special sales, no loss-leaders, no tie-in sales; effectively, a prohibition on free or low-cost supplies of breast milk substitutes. They are not even given as gifts to health workers and health facilities (WHO, 2013). This is critical given that bottle feeding is associated with higher rates of gastro-intestinal,

respiratory and dermal infections as well as obesity later in childhood and all the chronic diseases associated with that condition, (Horta et al., 2015; Li et al., 2012). Premature weaning will continue in Antigua and Barbuda if mothers do not receive adequate lactation support after leaving the hospital and if working mothers have to return to work ahead of baby being 6 months – the recommended age to introduce other food into the infant's diet.

References

Adhikari, M., Khanal, V., Karkee R., & Gavidia T. (2014). Factors associated with early initiation of breastfeeding among Nepalese mothers: Further analysis of Nepal Demographic and Health Survey, 2011. *International Breastfeeding Journal*, *9*(21), 2-9. doi:10.1186/s13006-014-0021-6

Agampodi, S. B., Fernando, S., Dharmaratne, S. D., & Agampodi, T. C. (2011). Duration of exclusive breastfeeding; validity of retrospective assessment at nine months of age. *BioMed Central Pediatrics, 11*(80), 2-5. doi:10.1186/1471-2431-11-80

Agunbiade, O. M., & Ogunleye, O. V. (2012). Constraints to exclusive breastfeeding practice among breastfeeding mothers in Southwest Nigeria: Implications for scaling up. *International Breastfeeding Journal*, *7*(5), 2-10. doi.org/10.1186/1746-4358-7-5

Ahmed, A., Iqbal, J., Ahmad, I., Charoo, B. A., Ahmad, Q. I., & Ahmad, S. M. (2014). Complications due to breastfeeding associated hypernatremic dehydration. *Journal Clin Neonatol, 2014*, 3,153-7. doi: 10.4103/2249-4847.140402

Ahmed, A. H., Roumani, A. M, Szucs, K., Zhang, L., & King, D. (2015). The effect of interactive web-based monitoring on breastfeeding exclusivity, intensity, and duration in healthy, term infants after hospital discharge. *Journal of Obstetric Gynaecology Neonatal Nurse,45*(2), 143-54. doi: 10.1016/j.jogn.2015.12.001.

Ajzen, I. (1991). Theory of planned behavior. *Organizational Behavior and Human Decision Processes,* 50, 179-211. doi: org/10.1016/0749-5978(91)90020-T

Ajzen, I. (2006). The TPB diagram. Retrieved from http://people.umass.edu/aizen/tpb.diag.html

Al-Binali, A. M. (2012). Breastfeeding knowledge, attitude and practice among school teachers in Abha female educational district, southwestern Saudi Arabia. *International Breastfeeding Journal*, *7*(10), 2-6. doi:10.1186/1746-4358-7-10

American Academy of Pediatricans. (2005). Pediatrics, 115(2) 496-506. http://pediatrics.aappublications.org/

Aschengrau, A., & Seage, G. (2008). *Essentials of epidemiology in public health*. Sudbury, MA: Jones and Bartlett Publishers.

Ayton, J., Howes, F., Hansen, E., and Nelson, M. (2014). Evaluating the prevention of premature cessation of exclusive breastfeeding in the general practice setting during the scheduled child immunization consultation: a pilot study. *Australian Journal of Primary Health* 21(3) 299-304. doi: 10.1071/PY13152

Bai, D. L., & Fong, D. Y., (2014). Associated with breastfeeding duration and exclusivity in mothers returning to paid employment postpartum. *Maternal Child Health Journal, 19.* 990-999. doi:10.1007/s10995-014-1596-7

Ballard, O., & Morrow, A. L. (2013). Human milk composition: Nutrients and bioactive factors. *Pediatric Clinics North America*, *60*(1),49-74. doi: 10.1016/j.pcl.2012.10.002.

Bartick, M., & Reinhold A. (2010). The burden of suboptimal breastfeeding in the United States: A pediatric cost analysis. *Pediatrics*, *125*(5), 1048-1056. doi: 10.1542/peds.2009-1616

Bener, A., Ehlayel, M. S., & Abdulrahman, H. M. (2011). Exclusive breast feeding and prevention of diarrheal diseases: A study in Qatar. *Revista Brasileira de Saúde Materno Infantil,11*(1), 83-87. doi: 10.1590/S1519-38292011000100009

doi:10.1177/156482651303400205

Black, R. E., Victora, C. G., Walker, S. P., & the Maternal and Child Nutrition Study Group. (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet, 382*(9890), 427 – 451. doi:10.1016/S0140-6736(13)60937-X

Bobinski, R., Mikulska, M., Mojska, H., & Simon, M. (2013). Comparison of the fatty acid composition of transitional and mature milk of mothers who delivered healthy full-term babies, pre-term babies and full-term small for gestational age infants. *European Journal of Clinical Nutrition, I*, 966–971. doi: 10.1038/ejcn.2013.96

Bocanegra, H. T. D. (1998). Breast-feeding in immigrant women: The role of social support and acculturation. *Hispanic Journal of Behavioral Sciences, 20*(4), 448-467. doi:10.1177/07399863980204003

Brewer, N. T., & Rimer, B. K. (2008) Perspectives on health theories that focus on individuals. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behaviour and health education* :*Theory, research, and practice (pp. 149-165)*. San Francisco, CA: Jossey-Bass.

Brown, C. L., Dodds, L., Legge, A., Bryanton, J., & Semenic, S. (2014). Factors influencing the reasons why mothers stop breastfeeding. *Canadian Journal of*

Public Health, 105(3), 179-185. https://pdfs.semanticscholar.org/b00d/ff9f6233fd19b96b7b39943d26833a5e8d6f.pdf

Brown, A. (2014) Maternal trait personality and breastfeeding duration: The importance of confidence and social support. *Journal of Advanced Nursing, 70* (3), 587–598. doi:10.1111/jan.12219.

Brown, A., Jones, S. W., & Rowan, H. (2017). Baby-Led Weaning: The Evidence to Date. *Current Nutrition Reports, 6*(2), 148–156. doi:10.1007/s13668-017-0201-2

Burtle, A., & Bezruchka, S. (2016). Population health and paid parental leave: What the United States can learn from two decades of research. *Healthcare, 4*(2), 30. doi: 10.3390/healthcare4020030

Cai, X., Wardlaw, T., Brown. D.W. (2012). Global trends in exclusive breastfeeding. *International Breastfeed Journal 7(12), 2-5*. doi: 10.1186/1746-4358-7-12.

Center for Disease Control and Prevention. (n.d.). Support for Breastfeeding in the Workplace. Retrieved from https://www.cdc.gov/breastfeeding/pdf/bf_guide_2.pdf

Chang, S., Rowe, J., & Goopy, S. (2014). Non-family support for breastfeeding maintenance among career women in Taiwan: A qualitative study. *International Journal of Nursing Practice, 20*, 293–301. doi: 10.1111/ijn.12148

Charlick, S. J., McKellar, L., Fielder, A., & Pincombe, J. (2015). Interpretative phenomenological analysis: Implementing research to influence breastfeeding

education. *International Journal of Childbirth Education,* 30(2), 49-54. http://www.informingscience.org/Publications/3486

CIA World Factbook. (2015). Antigua and Barbuda. Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/ac.html

Condon, L., Ingram, J., Hamid, N., & Hussein, A. (2003). Cultural influences on breastfeeding and weaning. *Community Practitioner, 76*(9), 344-349. http://eprints.uwe.ac.uk/7837

Cooklin, A. R., Rowe, H. J., Fisher, J.R.W. (2012). Paid parental leave supports breastfeeding and mother□infant relationship: a prospective investigation of maternal postpartum employment. *Australia and New Zealand Journal of Public Health, 36* (3), 249-256. doi: 10.1111/j.1753-6405.2012.00846.x.

Cope, D. G. (2014). Methods and meanings: Credibility and trustworthiness of qualitative research. *Oncology Nursing Forum*, *41*(1), 89. doi: 10.1188/14.ONF.89-91

Coutinho S. B., de Lira P. I., de Carvalho Lima M., & Ashworth, A. (2005). Comparison of the effect of two systems for the promotion of exclusive breastfeeding. *The Lancet, 366*(9491), 1094–100. doi: 10.1016/S0140-6736(05)67421-1

Creswell, J. W. (2009) *Research design*. (3rd ed.). Los Angeles, CA: Sage.

Cricco-Lizza, R. (2005.) The milk of human kindness: Environmental and human interactions in a WIC clinic that influence infant-feeding decisions of Black women. *Qualitative Health Research, 15* (4), 525 - 538. doi: 10.1177/1049732304273030.

Da-Silva, V. A., Moraes-Santos, A. R., Carvalho, M. S., Martins, M. L. P., & Teixeira, N. A.(1998). Prenatal and postnatal depression among low-income Brazilian women. *Brazilian Journal of Medical and Biological Research, 31*,799-804. doi: 10.1590/S0100-879X1998000600012

Daly A., Pollard, C. M., Phillips, M., & Binns, C. W. (2014). Benefits, barriers and enablers of breastfeeding: Factor analysis of population perceptions in Western Australia. *PLoS ONE, 9*(2), 88204. doi: 10.1371/journal.pone.0088204

Datta, J., Graham, B., & Wellings, K. (2012). The role of fathers in breastfeeding: Decision-making and support. *British Journal of Midwifery*, *20*(3), 159-167. http://researchonline.lshtm.ac.uk/146729/

Davy, G. M. (2013). Cultural understanding and interpretation of postpartum depression in a Caribbean immigrant community in the United States (Unpublished doctoral dissertation). Walden University. Minneapolis, Minnesota.

de Jager, E., Skouteris, H., Broadbent, J., Amir L, Mellor, K. (2013). Psychosocial correlates of exclusive breastfeeding: a systematic review. *Midwifery*, *29*(5), 506-518. doi: 10.1016/j.midw.2012.04.009

de Morais Alves, T. R., Nunes de Miranda, F. A., Santos Silva, G. W., Bittencourt Leite de Carvalho, J., Nogueira Valenca, C., & Diniz Cavalcante, R. (2016). The female imagery and its invisibility in exclusive breastfeeding: An exploratory study. *Online Brazilian Journal Of Nursing*, *15*(2), 325-335. doi: 10.17665/1676-4285.20165230

Declercq, E., Labbok, M. H., Sakala C. & O'Hara M. (2009). Hospital practices and women's likelihood of fulfilling their intention to exclusively breastfeed. *American Journal of Public Health, 99*(5), 929–35. doi: 10.2105/AJPH.2008.135236

Dewey, K. G., Nommsen-Rivers, L.A., Heinig, M.J., Cohen, R.J. (2003). Risk factors for suboptimal infant breastfeeding behavior, delayed onset of lactation, and excess neonatal weight loss. *Pediatrics. 112* (3 Pt 1), 607-619. doi: 10.1542/peds.112.3.607

Dinour, L. M., & Szaro, J. M .(2017). Employer-based programs to support breastfeeding among workingaMothers: A systematic review. *Breastfeeding Medicine*, 12,131-141. doi: 10.1089/bfm.2016.0182.

Dunn, R. L., Kalich, K. A., Henning, M. J., & Fedrizzi, R. (2015). Engaging field-based professionals in a qualitative assessment of barriers and positive contributors to breastfeeding using the social ecological model. *Maternal Child Health Journal, 19*, 6–16. doi: 10.1007/s10995-014-1488-x

Eisenhardt, K. M, (2017). Building theories from case study research. *The Academy of Management Review*, 14 (4), 532-550. https://journals.aom.org/doi/abs/10.5465/amr.1989.4308385

Faridvand, F., Mirghafourvand, M., Malakouti, J., & Mohammad-Alizadeh-Charandabi, S. (2017). Relationship between social support and breastfeeding self-efficacy among women in Tabriz, Iran. *British Journal of Midwifery, 25*(2), 103-109. doi: 10.12968/bjom.2017.25.2.103

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley., I. (1975). MA: Addison-Wesley.

Food and Agriculture Organization of the United Nations. (2015). Nutrition Assessment, Antigua and Barbuda. Retrieved from http://www.fao.org/countryprofiles/index/en/?iso3=ATG

Francis, J., Eccles, M. P., Johnston, M., Walker, A. E., Grimshaw, J. M., Foy, R., Kaner, E. F. S., Smith, L., & Bonetti, D. (2004). *Constructing questionnaires based on the theory of planned behaviour: A manual for health services researchers*. Newcastle upon Tyne, UK: Centre for Health Services Research, University of Newcastle upon Tyne.

Fu, I. Y., Fong, D. T., Heys, M., Lee, I. Y., Sham, A., & Tarrant, M. (2014). Professional breastfeeding support for first-time mothers: A multicentre cluster randomised controlled trial. BJOG: *An International Journal of Obstetrics and Gynaecology, 121*(13), 1673-1683. doi: 10.1111/1471-0528.12884

Gage, H., Williams, P., Von Rosen-Von Hoewel, J., Laitinen, K., Jakobik, V., Martin-Bautista, E. …, & Raats,M, (2012). Influences on infant feeding decisions of first-time mothers in five European countries. *European Journal of Clinical Nutrition, 66*, 914-919. doi: 10.1038/ejcn.2012.56

Galtry, J. (2015). Strengthening the human rights framework to protect breastfeeding: A focus on CEDAW. *International Breastfeeding Journal, 10*(29). doi: 10.1186/s13006-015-0054-5.

Gallegos, D., Vicca, N, & Streiner, S. (2015). Breastfeeding beliefs and practices of African women living in Brisbane and Perth, Australia. *Maternal and Child Nutrition, 11*, 727–736. doi: 10.1111/mcn.1203

Giglia, R., Cox, K., Zhao, Y., Binns, C.W. (2015). Exclusive breastfeeding increased by an internet intervention. *Breastfeed Medical, 10*(1):20-25. doi: 10.1089/bfm.2014.0093.

Giles, M., McClenahan, C., Cairns, E., Mallet, J. (2004). An application of the theory of planned behavior to blood donation: the importance of self-efficacy. *Health Education Research*, 19 (4), 380–391. doi: 10.1093/her/cyg063

Godin, G., & Kok, G. (1996). The theory of planned behavior: A review of its applications to health-related behaviors. *American Journal of Health Promotion*, *11*(2), 87-98. doi: 10.4278/0890-1171-11.2.87

Government of Antigua and Barbuda. (2012). A food and nutrition security policy for Antigua and Barbuda. Retrieved from https://extranet.who.int/nutrition/gina/sites/default/files/ATG%202012%20FoodNutritionSecurityPolicyAG.pdf

Grant, R. W., & Sugarman, J. (2010). Ethics in human subjects research: Do incentives matter? *Journal of Medicine and Philosophy*, *29*(6), 717–738. doi: 10.1080/03605310490883046

Grassley, J. S. and Eschi, V. S . (2008). Grandmother breastfeeding support: What do mothers need and want? *Birth, 35*(4), 330–335. doi: 10.1111/j.1523-536X.2008.00260.x

Greaux, K., Schwiebbe, L ., Renders, C. M., Doak, C. M., Visser R., Kist-van Holthe, J, & HiraSing., R. A. (2013). Breastfeeding and food pattern in overweight among children in the Caribbean. *Pediatrics International Child Health*, *33*(1), 18-22. doi: 10.1179/2046905512Y.0000000048.

Gross, R. S., Fierman, A. H., Mendelsohn, A. L., Chiasson, M. A., Rosenberg, T. J., Scheinmann, R., & Messito, M. J. (2010). Maternal perceptions of infant hunger, satiety, and pressuring feeding styles in an urban Latina WIC population. *Academic Pediatrics*, *10*(1), 29-35. doi: 10.1016/j.acap.2009.08.001

Gunnell, L,, Neher, J., Safranek, S. (2016). Clinical Inquiries: Does breastfeeding affect the risk of childhood obesity? *Journal of Family Practice., 65*(12):931-932. https://www.mdedge.com/jfponline/article/119002/pediatrics/does-breastfeeding-affect-risk-childhood-obesity

Haile, D., & Biadgilign, S. (2015). Higher breastfeeding performance index is associated with lower risk of illness in infants under 6 months in Ethiopia. *International Breastfeeding Journal*, *10*(32). doi: 10.1186/s13006-015-0057-2

Hansstein, F. V. (2016). The impact of breastfeeding on early childhood obesity: Evidence from the national survey of children's health. *American Journal of Health Promotion*, *30*(4), 250-258. doi: 10.1177/0890117116639564

Haschke, F., Haiden, N., Detzel, P., Yarnoff, B., Allaire, B., & Haschke-Becher, E. (2013). Feeding patterns during the first 2 Years and health outcome. *Annals of Nutrition and Metabolism* , *62*(3),16–25. doi: 10.1159/000351575

Hasselmann, M. H., Werneck, G. L., & Silva, C. (2008). Symptoms of postpartum depression and early interruption of exclusive breastfeeding in the first two months of life. *Cadernos de Saúde Pública, 24*(Suppl. 2), 341-352. doi: 10.1590/S0102-311X2008001400019

Heymann, J., Rauba, A., & Earleb, A. (2013). Breastfeeding policy: a globally comparative analysis. *Bulletin of World Health Organization*, *91*,398–406. Doi: 10.2471/BLT.12.109363

Hong Lee, H. M., Durham, J., Boot, J., & Sychareun, V. (2013). A qualitative study on the breastfeeding experiences of first-time mothers in Vientiane, Lao PDR. *BioMed Central Pregnancy Childbirth*, *13*, 223. doi: 10.1186/1471-2393-13-223.

Hongo , H., Nanishi, K., Shibanuma, A., & Jimba, M. (2015). Is baby-friendly breastfeeding support in maternity hospitals associated with breastfeeding satisfaction among Japanese mothers? *Maternal Child Health Journal, 19*,1252–1262. doi: 10.1007/s10995-014-1631-8

Horta, B .L., de Mola, C. L.,. & Victora, C. G. (2015). Long-term consequences of breastfeeding on cholesterol, obesity, systolic blood pressure and type 2 diabetes: A systematic review and meta-analysis. *Acta Pædiatrica*, 104, 30–37. doi: 10.1111/apa.13133

Houghton, C., Murphy, K., Shaw, D., & Casey, D. (2015). Qualitative case study data analysis: An example from practice. *Nurse Researcher, 22*(5), 8-12. doi: 10.7748/nr.22.5.8.e1307

Inoue, M., Binns, C.W., Katsuki,, Y., and Ouchi, M. (2013). Japanese mothers' breastfeeding knowledge and attitudes assessed by the Iowa infant feeding attitudes scale *Asia Pacific Journal of Clinical Nutrition, 22* (2) 261-265. https://search.informit.com.au/documentSummary;dn=304223077747507;res=IELAPA> ISSN: 0964-7058.

International Labour Organization. (2016). C183 - Maternity Protection Convention, 2000 (No. 183) Retrieved from http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312328

International Labor Organization. (2013). Working Conditions Laws Database. Retrieved from http://www.ilo.org/dyn/travail

Jaldin, M., Pinheiro, F., Santos, A., & Muniz, N. (2013). Child growth compared with the NCHS reference and WHO/2006 standard. *Revista de Nutrição*, *26*,17–26. http://www.scielo.br/pdf/rn/v26n1/02.pdf

Jackson-Best, F. (2016). A narrative review of maternal depression research focusing on women of Caribbean descent in the diaspora and Caribbean women in the region. *Journal of International Women's Studies, 17*(3), 32-44. http://vc.bridgew.edu/jiws/vol17/iss3/4

Janesick, V.J. (2011). "*Stretching" Exercises for Qualitative Researchers*. Third Edition. Thousand Oaks: Sage Publications.

Jolly, K., Ingram, L., Khan, K. S., Deeks, J. J., Freemantle, N., & MacArthur, C. (2012) Systematic review of peer support for breastfeeding continuation: Metaregression

analysis of the effect of setting, intensity and timing. *British Medical Journal*, *344*. doi: d8287-10.1136/bmj.d8287.

Joshi, A., Trout, K. E., Aguirre, T., & Wilhelm, S. (2014). Exploration of factors influencing initiation and continuation of breastfeeding among Hispanic women living in rural settings: a multi-methods study. *Rural and Remote Health 14*, 2955 – 2964. https://www.rrh.org.au/journal/article/2955

Kaufman, L., Deenadayalan, S., & Karpati, A. (2010). Breastfeeding ambivalence among low-income African American and Puerto Rican women in north and central Brooklyn. *Maternal and Child Health Journal*, *14*(5), 696-704. doi: 10.1007/s10995-009-0499-5

Krishnamurthy, S., Debnath, S., & Gupta, P. (2011). Breast feeding-associated hypernatremic dehydration: A preventable tragedy in newborn infants. *JCR, 1*,1-5 doi: 10.17659/01.2011.0001

Kuo, A.A., Inkelas, M., Slusser, W.M., Maidenberg, M., & Halfon,N. (2011). Introduction of solid food to young infants. *Maternal Child Health Journal*, *15*(8), 1185–1194. doi: 10.1007/s10995-010-0669-5

Lavagno, C., Camozzi, P., Renzi, S., Lava, S.A.G., Simonetti, C.D., Bianchetti, M.G., & Milani, G.P. (2016). Breastfeeding-associated hypernatremia: A systematic review of the literature. *Journal of Human Lactation*, *32*,(1), 67-74. doi: 10.1177/0890334415613079

Lawton, R., Ashley, L., Dawson, S., Waiblinger, D., & Conner, M. (2012). Employing an extended Theory of Planned Behaviour to predict breastfeeding intention,

initiation, and maintenance in White British and South-Asian mothers living in Bradford. *British Journal Health Psychology*, *17*(4), 854-71. doi: 10.1111/j.2044-8287.2012.02083

Li, R., Magadia J., Fein, S. B., & Grummer-Strawn, L. M. (2012). Risk of bottle-feeding for rapid weight gain during the first year of life. *Arch Pediatric Adolescent Medicine, 166*, 431–436. doi: 10.1001/archpediatrics.2011.1665

Li, R., Darling, N., Maurice, E., Barker, L., & Grummer-Strawn, L. M. (2005). Breastfeeding rates in the United States by characteristics of the child, mother, or family: the 2002 National Immunization Survey. *Pediatrics*, *115*(1), e31-e37. https://www.ncbi.nlm.nih.gov/pubmed/15579667

Liu, J., Shi, Z., Spatz, D., Loh, R., Sun, G., & Grisso, J. (2013). Social and demographic determinants for breastfeeding in a rural, suburban and city area of South East China. *Contemporary Nurse, 45*(2), 234–243. doi: org/10.5172/conu.2013.45.2.234

Livingood, W. C., Allegrante, J. P., Airhihenbuwa, C. O., Clark, N.M., Windsor, R.C.,. Zimmerman, M. A., & Green, L.W. (2011). Applied social and behavioral science to address complex health problems. *American Journal of Preventive Medicine*, 41(5), 525–531. doi: 10.1016/j.amepre.2011.07.021

Lutte, C. K. (2016). The Baby Friendly Hospital Initiative in Latin America and the Caribbean: Current status, challenges, and opportunities. Retrieved from http://www.paho.org/hq/index.php?option=com_content&view=article&id=11764&Itemid=41768&lang=en

Lutter, C. K., Chaparro, C. M., Grummer-Strawn, L., & Victora, C. G. (2011). Backsliding on a key health investment in Latin America and the Caribbean: The case of breastfeeding promotion. *American Journal of Public Health*, *101*(11), 2130-2136. doi: 10.2105/AJPH.2011.300244

Lutter, C.K., Perez-Escamilla, R., Segall A., Sanghvi, T., Teruya, K., & Wickham, C. (1997) The effectiveness of a hospital-based program to promote exclusive breast-feeding among low-income women in Brazil. *American Journal of Public Health, 87*(4), 659–63. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1380850/

Ma, P., & Magnus, J. H. (2012). Exploring the concept of positive deviance related to breastfeeding initiation in Black and White WIC enrolled first-time mothers. *Maternal and Child Health Journal*, *16*(8), 1583-1593. doi: 10.1007/s10995-011-0852-3

MacKean, G., & Spragins, W. (2012). The challenges of breastfeeding in a complex world. A critical review of the qualitative literature on women and their partners'/supporters' perceptions about breastfeeding. Retrieved from http://www.albertahealthservices.ca/ps-1029951-pregnancy-2012-breastfeeding-lit-review.pdf

Marchione, T.J. (1980). A history of breast-feeding practices in the English-speaking Caribbean in the twentieth century. *Food and Nutrition Bulletin*, *2* (2). https://www.popline.org/node/499249

Marques R. de F., Taddei, J. A., Konstantyner, T., Lopez., F. A., Marques, A. C., de Oliveira C. S., & Braga, J. A. (2015). Anthropometric indices and exclusive

breastfeeding in the first 6 months of life: A comparison with reference standards NCHS, 1977 and WHO, 2006. *International Breastfeeding*, *10*(20). doi: 10.1186/s13006-015-0045-6

Mason, F., Rawe, K., Wright, S., Crosby, L., McNair, D., Hall, A., Sibson, V., Maclaine, A., Rees, A. (2013). Superfood for Babies. Retrieved from https://www.savethechildren.org.uk/sites/default/files/images/Superfood_for_Babies_UK_version.pdf

Mason, M. (2010). Sample size and waturation in PhD studies using qualitative interviews. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research, 11*(3). Retrieved from http://www.qualitative-research.net/index.php/fqs/article/view/1428/3027

Matheson, M. C., Allen, J. K., & Tang, L. K. (2012). Understanding the evidence for and against the role of breastfeeding in allergy prevention. *Clinical & Experimental Allergy*, 42, 827–851. doi: 10.1111/j.1365-2222.2011.03925.x

McCrory, C., Layte, R. (2012). Breastfeeding and risk of overweight and obesity at nine-years of age. *Social Sciences and Medicine*, *75*(2), 323-30. doi: 10.1016/j.socscimed.2012.02.048.

Mujawar, N. S., Jaiswal A.N. (2017). lHypernatremia in the neonate: Neonatal hypernatremia and hypernatremic dehydration in neonates receiving exclusive breastfeeding. *Indian Journal of Critical Care Medicine*, *21*(1). 30-33. doi: 10.4103/0972-5229.198323

Miles, M.B., Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook.* Thousand Oaks, CA: SAGE.

Moss, B.G., Yeaton, W.H (2014). Early childhood healthy and obese weight status: Potentially protective benefits of breastfeeding and delaying solid foods. *Maternal Child Health Journal, 18,*1224–1232. doi: 0.1007/s10995-013-1357-z

Morse, J.M. (Ed). (1994). *Critical Issues in Qualitative Research Methods* Thousand Oaks: Sage Publications.

Motee, A., Ramasawmy, D., Pugo-Gunsam, P., Jeewon, R. (2013). An assessment of the breastfeeding practices and infant feeding pattern among mothers in Mauritius. *Journal of Nutrition Metabolism.,*2013,243852. doi: 10.1155/2013/243852.

Mujawar, N. S., & Jaiswal, A. N. (2017). Hypernatremia in the neonate: Neonatal hypernatremia and hypernatremic dehydration in neonates receiving exclusive breastfeeding. *Indian Journal of Critical Care Medicine, 21*, 30-33. doi: 10.4103/0972-5229.198323

National WIC Association. (2016). National WIC Association statement on infant formula manufacturers. Retrieved from https://www.nwica.org/blog/press-release-national-wic-association-statement-on-infant-formula-manufacturers#.WE4RyYWcHIU

Negin, J., Coffman, J., Vizintin, P.,& Raynes-Greenow, C. (2016). The influence of grandmothers on breastfeeding rates: A systematic review. *BioMed Central Pregnancy and Childbirth*, *16*(91) 1-10. doi: 10.1186/s12884-016-0880-5

Nursan, C., Dilek, K., & Sevin, A. (2014). Breastfeeding self-efficacy of mothers and the affecting factors. *Aquichan*; 14(3): 327-335. doi: 10.5294/aqui.2014.14.3.5

O'Hara, M.W., Zekoski, E. M., Philipps, L. H., & Wright, E. J. (1990). Controlled prospective study of postpartum mood disorders: Comparison of childbearing and non-childbearing women. *Journal of Abnormal Psychology*, *99* 1), 3-15. https://www.ncbi.nlm.nih.gov/pubmed/2307763

O'Sullivan, A., Farver, M., & Smilowitz, J. T. (2015). The Influence of Early Infant-Feeding Practices on the Intestinal Microbiome and Body Composition in Infants. *Nutrition and Metabolic Insights, 8(Supp*l 1), 1–9. doi: org/10.4137/NMI.S29530

Oddie S. (2009). The British paediatric surveillance unit. Severe neonatal hypernatremia. 2009. Retrieved from: http://www.rcpch.ac.uk/ what-we-do/bpsu/current-studies/severe-neonatal-hypernatraemia/ severe-neonatal-hypernatraemia

Office for Human Research Protections. (2016). The Belmont Report. Retrieved from http://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/#xethical

Office of the Surgeon General (US); Centers for Disease Control and Prevention (US); Office on Women's Health (US). (2011). The surgeon general's call to action to support breastfeeding; 2011. *Breastfeeding from the Public Health Perspective*. Rockville: MD Office of the Surgeon General (US)

Oliveira, V., Frazão, E., & Smallwood, D. (2013). Trends in infant formula rebate contracts: Implications for the WIC program. Retrieved from https://www.ers.usda.gov/webdocs/publications/eib119/41312_eib119_summary.pdf

Onah, S., Osuorah, D.I., Ebenebe, J., Ezechukwu, C., Ekwochi, U. and Ndukwu, I. (2014). Infant Feeding Practices and Maternal Socio-Demographic Factors That Influence Practice of Exclusive Breastfeeding among Mothers in Nnewi South-East Nigeria: A Cross-Sectional and Analytical Study. *International Breastfeeding Journal*, 9, 6. doi: org/10.1186/1746-4358-9-6

Pan American Health Organization & World Health Orgnaization. (2016). Exclusive Breastfeeding (% of infants under 6 months of age), Region of the Americas. Retrieved from http://www.paho.org/hq/index.php?option=com_content&view=article&id=11580&Itemid=41164&lang=en

Papp, L. M. (2014). Longitudinal associations between breastfeeding and observed mother-child interaction qualities in early childhood. *Child: Care, Health Development,* 40(5):740-6. doi: 10.1111/cch.12106

Patelarou, E., Girvalaki, C., Brokalaki, H., Patelarou, A., Androulaki, Z., & Vardavas, (2012) Current evidence on the associations of breastfeeding, infant formula, and cow's milk introduction with type 1 diabetes mellitus: A systematic review. Nutrition Review. 70(9):509-19. doi: 10.1111/j.1753-4887.2012.00513.x.

Patton. M.Q. (2002). *Qualitative research and Evaluation Methods*. Thousand Oaks: Sage Publications.

Patton, M. Q. (2012). *Essentials of Utilization-Focused Evaluation*. Thousand Oaks: Sage Publications.

Pearce, J., Taylor, M. A, & Langley-Evans, S.C (2013). Timing of the introduction of complementary feeding and risk of childhood obesity: A systematic review. *International Journal of Obesity* ,37, 1295–1306. doi: 10.1038/ijo.2013.99

Parry, O., Mauthner, N.S. (2004). Whose data are they anyway? Practical, legal and ethical issues in archiving qualitative research data. *Sociology, 38*(1), 139–152. doi: 10.1177/0038038504039366]

Patton, M.Q.(2002) *Qualitative research & evaluation methods*. (3rd ed.). Thousand Oaks, CA: Sage.

Pérez-Escamilla, R., Martinez, J.L., & Segura-Pérez, S. (2016).Impact of the Baby-friendly Hospital Initiative on breastfeeding and child health outcomes: A systematic review. *Maternal and Child Nutrition*, *12*(3), 402–417. doi: 10.1111/mcn.12294

Perez-Escamilla, R. (1994). Breastfeeding in Africa and the Latin American and Caribbean region: The potential role of urbanization. *Journal of Tropical Pediatrics, 40*(3), 137-143. https://www.ncbi.nlm.nih.gov/pubmed/8078111

Phillips, K. F. (2011). First-time breastfeeding mothers: Perceptions and lived experiences with breastfeeding. *International Journal of Childbirth Education*, *26*(3), 17-20. https://www.researchgate.net/publication/246545867_First-Time_Breastfeeding_Mothers_Perceptions_and_Lived_Experiences_With_Breast feeding

Prell, C., & Koletzko, B. (2016). Breastfeeding and Complementary Feeding. *Deutsches Aerzteblatt International, 113*(25), 435-444. doi: 10.3238/arztebl.2016.0435

Radzyminski, S., & Callister, L.C. (2015). Health Professionals' Attitudes and Beliefs About Breastfeeding. *The Journal of Perinatal Education*, *24*(2), 102–109. doi: 10.1891/1058-1243.24.2.102

Renfrew, M.J,, McCormick, F. M., Wade, A., Quinn, B., & Dowswell, T. (2012). Support for healthy breastfeeding mothers with healthy term babies. *Cochrane Database System Review, 16*(5). doi: 10.1002/14651858.CD001141.pub4

Reyes, M., Hoyos, V., Martinez, S. M., Lozoff, B., Castillo, M., Burrows, R., Blanco, E., & Gahagan, S. (2014). Satiety responsiveness and eating behavior among Chilean adolescents and the role of breastfeeding. *International Journal on Obesity*, *38*(4), 552-7. doi:10.1038/ijo.2013.191

Rice, P. L. (1999) Infant weaning practices among Hmong women in Melbourne. *Australian Journal of Public Health, 5*(2), 27-37. doi: 10.1071/PY99017

Ritchie, J., Lewis, J., & Elam, G. (2003). Designing and Selecting Samples. In J. Richie & J. Lewis (Eds.), *Qualitative research practice: A guide for social science students and researchers* (pp. 77-108). Thousand Oaks, CA: Sage.

Rao, V. S. P. & Narayana, P. S. (1998). *Organisation theory and behaviour*, Delhi, India: Konark Publishing Company.

Robert, E., Coppieters, Y., Swennen, B., & M Dramaix, M. (2014), The Reasons for Early Weaning, Perceived Insufficient Breast Milk, and Maternal Dissatisfaction: Comparative Studies in Two Belgian Regions. *International Scholarly Research Notices,* 2014(678564) 1- 12. doi:n10.1155/2014/678564

Rowland, K. J., Choi, P. M., & Warner, B. W. (2013). The role of growth factors in intestinal regeneration and repair in necrotizing enterocolitis. *Seminars in Pediatric Surgery*, *22*(2), 101–111. Doi: 10.1053/j.sempedsurg.2013.01.007

Saavedra, J. M., Deming, D., Dattilo, A, Reidy, K. (2013). Lessons from the feeding infants and toddlers study in North America: What children eat, and implications for obesity prevention. *Annual of Nutrition Metabolism, 62*(3), 27–36. doi:m10.1159/000351538

Sanjari, M., Bahramnezhad, F., Fomani, F. K., Shoghi, M., & Cheraghi, M. A. (2014). Ethical challenges of researchers in qualitative studies: The necessity to develop a specific guideline. J*ournal of Medical Ethics and History of Medicine, 7,* 14. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4263394/

Schwab, M. (1996). Mechanical Milk: An essay on the social history of infant formula. *Childhood* 3(4), 479-497. doi: 10.1177/0907568296003004005

Scott, J. A., Kwok, Y. Y., Synnott, K., Bogue, J., Amarri, S., Norin, E., & Edwards, C. A. (2015). A comparison of maternal attitudes to breastfeeding in public and the association with breastfeeding duration in four European countries: Results of a cohort study. *Birth: Issues In Perinatal Care*, *42*(1), 78-85. doi: 10.1111/birt.12138

Sherriff, N., & Hall, V. (2011). Engaging and supporting fathers to promote breastfeeding: A new role for Health Visitors. *Scandinavian Journal Of Caring Sciences, 25*(3), 467-475. doi: 10.1111/j.1471-6712.2010.00850.x

Shifraw, T., Worku, A., and Berhane, Y. (2015). Factors associated exclusive breastfeeding practices of urban women in Addis Ababa public health centers, Ethiopia: A cross sectional study. *International Breastfeeding Journa*l 10 (22) 1-6. doi: 10.1186/s13006-015-0047-4

Silva, C.S, , Lima, M. C,, Sequeira-de-Andrade, L.A, , Oliveira. J.S,, Monteiro, J.S,, Lima, N/ M, et al. Association between postpartum depression and the practice of exclusive breastfeeding in the first three months of life. *Journal of Pediatric (Rio Jenerio). 93*:356-64. doi: 10.1016/j.jped.2016.08.005

Silva, M.B.D., Albernaz, E. P., Mascarenhas, M. L. W. and Silveira R.B.D. (2008) Influence of breastfeeding support on the exclusive breastfeeding of babies in the first month of life and born in the city of Pelotas, State of Rio Grande do Sul, Brazil. *Revista Brasileira de Saude Materno Infantil, 8* (3), 275–284. http://www.scielo.br/pdf/rbsmi/v8n3/a06v8n3.pdf

Simmonds, M., Llewellyn, A., Owen, C. G., & Woolacott, N. (2016). Predicting adult obesity from childhood obesity: a systematic review and meta-analysis. *Obesity Reviews: An Official Journal Of The International Association For The Study Of Obesity*, *17*(2), 95-107. doi: 10.1111/obr.12334

Skafida, V. (2012). Juggling work and motherhood: the impact of employment and maternity leave on breastfeeding duration: A survival analysis on Growing Up in Scotland data. *Maternal and Child Health Journal, 16*(2), 519-527. doi: 10.1007/s10995-011-0743-7

Smith, J., Blake, M. (2013). Infant food marketing strategies undermine effective regulation of breast milk substitutes: trends in print advertising in Australia, 1950–2010. *Australian and New Zealand Journal of Public Health*, *37*(4), 337-44 doi: 10.1111/1753-6405.12081

Staub, E., & Wilkins, B. (2013). A fatal case of hypernatraemic dehydration in a neonate. *Journal of Paediatrics and Child Health*, *48*(9), 859-862. doi: 10.1111/j.1440-1754.2012.02529.x

Strong, G., Lee, S., (2014). Breastfeeding to reduce the risks of childhood obesity: Recommendations for childbirth educators. *International Journal of Childbirth Education, 29* (2) 26-30. https://search.proquest.com/openview/bab3b31db5b153d67ee0e7b9cda00eff/1?pq-origsite=gscholar&cbl=32235

Susiloretni, K., Hadi, H., Prabandari, Y., Soenarto, Y., & Wilopo, S. (2015). What works to improve duration of exclusive breastfeeding: lessons from the exclusive breastfeeding promotion program in rural Indonesia. *Maternal & Child Health Journal*, 19(7), 1515-1525. doi: 10.1007/s10995-014-1656-z

Susin, L., Giugliani, E. ,& Kimmer. S. (2005). Influence of grandmothers on breastfeeding practices. *Rev Saude Publication* 39 (2), 1-6. doi: /S0034-89102005000200001

Tawai, S. (2012). Iron and exclusive breastfeeding. *Breastfeeding Review*, 20(1), 35-47. https://search.informit.com.au/documentSummary;dn=360835730620053;res=IELHEA

Thomas, E., Magilvy, J. K. (2011). Qualitative rigor or R\research validity in qualitative research. *Journal Specializing in Pediatric Nursing* 16 (2). doi: 10.1111/j.1744-6155.2011.00283.x

Thomson, G., Crossland, N., Dykes, F. (2012). Giving me hope: Women's reflections on a breastfeeding peer support service. *Maternal and Child Nutrition*, *8*, (3), 340–353. doi: 10.1111/j.1740-8709.2011.00358.x

Todres, L., & Holloway, I. (2004). Descriptive phenomenology: Life world as evidence. In F. Rapport, (Ed.), *New qualitative methodologies in health & social care research*. London, England: Routledge.

Trotman, H., Antoine, M., & Barton , M. (2006). Hypernatraemic dehydration in exclusively breastfed infants: A potentially fatal complication. *West Indian Medical Journal,55*(4), 282-285. doi: 10.1590/S0043-31442006000400012

Tuan, N.T., Nguyen, P.H., Hajeebhoy, N., Frongillo, E.A. (2014). Gaps between breastfeeding awareness and practices in Vietnamese mothers result from inadequate support in health facilities and social norms. Journal of Nutrition,144(11):1811-1817. doi: 10.3945/jn.114.198226.

United Nations Children Education Fund. (2005). International Code of Marketing of Breast milk Substitutes. Retrieved from http://www.unicef.org/nutrition/index_24805.html

United Nations Children Education Fund. (2010). National implementation of the international code of marketing of breast milk. Retrieved from https://www.unicef.org/nutrition/index_24805.html

United Nations Children Education Fund. (2011). National Implementation of the International Code of Marketing of Breast milk Substitutes (April 2011) Retrieved from https://www.unicef.org/nutrition/files/State_of_the_Code_by_Country_April2011.pdf

United Nations Children Education Fund. (2011). Infant and Young Feeding. Retrieved from https://www.unicef.org/nutrition/files/Final_IYCF_programming_guide_2011.pdf

United Nations Children Education Fund. (2014). Adopting optimal feeding practices is fundamental to a child's survival, growth and development, but too few children benefit. Retrieved from http://data.unicef.org/nutrition/iycf#sthash.4m58PEA7.dpuf

United Nations Children Education Fund. (2015). Breastfeeding. Retrieved from http://www.unicef.org/nutrition/index_24824.html

United Nations Children Education Fund. (2016). 77 million newborns globally not breastfed within first hour of life – UNICEF. Retrieved from https://www.unicef.org/media/media_92038.html

United Nations Children Education Fund. (2016). The Baby-Friendly Hospital Initiative. Retrieved from http://www.unicef.org/programme/breastfeeding/baby.htm

United Nations Children Education Fund. (2016). Health Benefits of Breastfeeding. Retrieved from http://www.unicef.org.uk/BabyFriendly/About-Baby-Friendly/Breastfeeding-in-the-UK/Health-benefits/

United Nations Children Education Fund. (2017). Complementary Foods and Feeding: Nutritional companion to breastfeeding after 6 months. Retrieved from https://www.unicef.org/programme/breastfeeding/food.htm

United States Department of Agriculture Food and Nutrition Service. (2001). Infant Feeding: A Guide for Use in the Child Nutrition Programs. Retrieved from http://www.fns.usda.gov/sites/default/files/feeding_infants.pdf

United States Department of Health and Human Services. (2011). *The Surgeon General's Call to Action to Support Breastfeeding*. Washington, DC: U.S. Department of Health and Human Services. http://www.surgeongeneral.gov.

United States Department of Health and Human Services Office for Human Research Protections (2016). *The Belmont Report.* Retrieved from http://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/#xethical

United States Department of Health and Human Services. (n.d.). Participant Recruitment for Research. Retrieved from https://healthit.ahrq.gov/ahrq-funded-projects/emerging-lessons/participant-recruitment-research

Valdes V., Perez A., Labbok M., Pugin E., Zambrano I. & Catalan S. (1993) The impact of a hospital and clinic-based breastfeeding promotion programme in a middle class urban environment. *Journal of Tropical Pediatrics, 39* (3), 142–51 https://www.popline.org/node/331632.

Vandenplas, Y., Steenhout, P., Järvi, A., Garreau, A.-S., & Mukherjee, R. (2017). Pooled Analysis of the Cow's Milk-related-Symptom-Score (CoMiSSTM) as a Predictor

for Cow's Milk Related Symptoms. *Pediatric Gastroenterology, Hepatology & Nutrition*, 20(1), 22–26. /doi: 10.5223/pghn.2017.20.1.22

Venancio, S. I., Saldiva, S. R., Escuder, M. M., & Giugliani, E. R. (2012). The Baby-Friendly Hospital Initiative shows positive effects on breastfeeding indicators in Brazil. *Journal of Epidemiology & Community Health, 66*(10), 914–8. doi: 10.1136/jech-2011-200332

Verret-Chalifour, J., Giguère, Y., Forest, J., Croteau, J., Zhang, P., & Marc, I. (2015). Breastfeeding initiation: Impact of obesity in a large Canadian perinatal cohort study. *PLoS One*, *10*(2). doi: 10.1371/journal.pone.0117512

Victora, C.G., Wagstaff, A., Schellenberg, J.A., Gwatkin, D., Claeson, M., Habicht, J. (2003). Applying an equity lens to child health and mortality: more of the same is not enough. *The Lancet,* 362, 222-241

Victora, C. G., Bah, R., Barros, A. J. , França, G. V., Horton, S., Krasevec, J… & Lancet Breastfeeding Series Group. (2016). Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect. *The Lancet*. 387(10017):475-490. doi: 10.1016/S0140-6736(15)01024-7.

Victora, C. G., Horta, B. L., de Mola, C. L., Quevedo, L., Pinheiro, R. T., Gigante, D. P., … & Barros, F. C. (2015). Association between breastfeeding and intelligence, educational attainment, and income at 30 years of age: A prospective birth cohort study from Brazil. *The Lancet, Global Health*, *3*(4), 199–205. doi: 10.1016/S2214-109X(15)70002-1

Wagner, E. A., Chantry, C. J., Dewey, K. G. Nommsen-Rivers, L.A. (2013). Breastfeeding Concerns at 3 and 7 Days Postpartum and Feeding Status at 2 Months. *Pediatrics 132* (4), e865- e875 doi: 10.1542/peds.2013-0724

Walden University Institutional Review Board. (2015). Standard Application for Research Ethics Review. Retrieved from http://academicguides.waldenu.edu/researchcenter/orec/application

Walker, J. L. (2012). The use of saturation in qualitative research. *Canadian Journal of Cardiovascular Nursing, 22*(2), 37–41 https://www.ncbi.nlm.nih.gov/pubmed/22803288.

Walsh, A., Kearney, L., Dennis, N. (2015). Three Factors influencing first-time mothers' introduction of complementary foods: A qualitative exploration. *BMC Public Health (2015), 15*(939) .doi: 10.1186/s12889-015-2250-z

Walsh, A.D., Pincombe, J., & Henderson, A. (2011). An examination of maternity staff attitudes towards implementing Baby Friendly Health Initiative (BFHI) accreditation in Australia. *Maternal Child Health Journal, 15*, 597–609. doi: 10.1007/s10995-010-0628-1

Watkins, S., Meltzer-Brody, S., Zolnoun, D., Stuebe, (2011). A. Early Breastfeeding Experiences and Postpartum Depression. *Obstetrics and Gynecology, 118* (2), 214-221. doi: 10.1097/AOG.0b013e3182260a2d

Willumsen, J. (2013). Breastfeeding education for increased breastfeeding duration. Retrieved from http://www.who.int/elena/bbc/breastfeeding_education/en/

World Bank. (2016). Urban population. Retrieved from http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=AU

World Health Organization. (2011). Exclusive breastfeeding for 6 months best for babies everywhere. Retrieved from http://www.who.int/mediacentre/news/statements/2011/breastfeeding_20110115/en/

World Health Organization. (2013). Country implementation of the International Code of Marketing of Breast milk Substitutes: Status report 2011. Geneva, World Health Organization, 2013 (revised).

World Health Organization. (2016). Exclusive Breastfeeding. Retrieved from http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/

World Health Organization. (2016). Infant and young child feeding data by country. Retrieved from http://www.who.int/nutrition/databases/infantfeeding/countries/en/

World Health Organization. (2017). Facts and figures on childhood obesity. Retrieved from http://www.who.int/end-childhood-obesity/facts/en/

World Health Organization. (n.d). 10 Facts on Breastfeeding. Retrieved from http://www.who.int/features/factfiles/breastfeeding

Williamson, I., Leeming, D., Lyttle, S. and Johnson, S. (2012). 'It should be the most natural thing in the world': Exploring first-time mothers' breastfeeding difficulties in the UK using audio-diaries and interviews. *Maternal and Child Nutrition*,*8*, 434–447. doi: 10.1111/j.1740-8709.2011.00328.x

Wright, A., Rice S. & Wells S. (1996) Changing hospital practices to increase the duration of breastfeeding. *Pediatrics, 97*(5), 669–75.

Zaki, S. A., Mondkar ,J., Shanbag, P., & Verma, R. (2012). Hypernatremic dehydration due to lactation failure in an exclusively breastfed neonate. *Saudi Journal of Kidney Diseases Transplantation*, *23*,125-128.

Zamawe, F. C. (2015). The Implication of Using NVivo Software in Qualitative Data Analysis: Evidence-Based Reflections. *Malawi Medical Journal*, *27*(1), 13–15.

Zaidi, F. (2014). Challenges and practices in infant feeding in Islam. *British Journal Of Midwifery, 22*(3), 167-172.

Appendix A: Recruitment Flyer

Infant feeding is an important issue for first-time mothers. I am conducting research to find out more about mothers' infant feeding practices in Antigua & Barbuda.

Who is eligible to participate?

- You are a first-time mothers 18 years and older and not pregnant; and
- You have a healthy single baby between the ages of 1 and 6 months old; and
- You are currently breastfeeding, or have breastfed your baby (even for one day) or have never breastfed your baby

What is involved?

- A face to face interview lasting 60-90 minutes
- A follow-up phone call or email to clarify interview responses
- A second follow-up phone call or email to share the research findings with you
- A US$ 11 gift voucher for you
- Confidential treatment of information shared
- Voluntary participation and freedom to leave whenever you want
- Flexible scheduling including late afternoons and weekends

Benefits of this study to your community

- An understanding of the challenges faced by first-time mothers regarding infant feeding
- Inform public policy to support healthy infant feeding.

Researcher's contact

To volunteer or to request additional information on this research please contact Janelle Charles Williams at telephone# XXX or XXX or email XXX@gmail.com

Appendix B: Request for Letter of Cooperation

Dear Dr xxx (Chief Medical Officer, Ministry of Health)

I am a Ph.D. candidate at Walden University. My study is entitled 'The perceptions of first-time mothers in Antigua and Barbuda towards breastfeeding'. This research seeks to understand the facilitators of and barriers to exclusive breastfeeding to provide an understanding of low exclusive breastfeeding rates in the country. Further to our previous conversations, I am seeking permission for the attached flyer to be distributed to mothers utilizing the child health clinic in xxx. It will be distributed during the period December 2016 to January 2017. Beyond passing out the flyers, the clinics will not participate in the study. A copy of the recruitment flyer is attached for your review. It contains information about the study. Participation in the study is strictly voluntary and confidential.

Sincerely
Janelle Charles Williams

Appendix C: Interview Guide

Thank you for agreeing to participate in this research to discover the perceptions of first-time mothers in Antigua and Barbuda on exclusive breastfeeding and weaning.

Tell me a about you and your baby:
What is his/her name?
What is his/her age?
What type of delivery did you have?
What feeding advice were you given on the birth of your child?
Do you believe you have sufficient milk to breastfeed your infant?
What other factors influenced how you feed your baby?
What type of employment are you involved in?

Behavior

1. Please tell me how your baby was fed, starting with directly after the birth. (Use prompts to ask 'how did that go?', 'how old was the baby when you did that?' etc.)

Behavioral Beliefs

The next questions are about exclusive breastfeeding, which means the feeding of your baby for 6 months with only human milk. It means during that period the baby did not receive water, formula or cereals.

2. What do you believe are the advantages or benefits of exclusive breastfeeding?
3. What do you believe are the disadvantages or risks of exclusive breastfeeding?
4. Is there anything else you associate with exclusive breastfeeding?

Social referents and sources of information

5. Now I want you to think back to when you were deciding how to feed your baby. Tell me about the individuals or groups and what they said to help you to decide on your approach to feeding your infant.
6. Tell me about any individuals or groups that disapproved or discouraged your approach to breastfeeding your infant?
7. Where do you go for information about feeding your baby**?**

Weaning…

8. What information influenced your decision to introduce other foods such as cereals, water, pureed fruits and vegetables to your infant?
9. What were the sources of information on when to introduce other foods to your infant?
10. How did you know the sources were accurate?

Perceived behavioral control beliefs

11. What factors or circumstances influenced your decision when to breastfeed, when to bottle feed and when to introduce other foods?

12. Are there any other issues that come to mind when you think about breastfeeding?
13. Current recommendations are for babies to be exclusively breastfed for the first 6 months of life. What do you know about this current recommendation for the age at which babies should be exclusively breastfeed? How do you feel about this recommendation?
14. Current recommendations are for babies to be given solid foods such as cereals and fruits after 6 months of life. How do you feel about these recommendations?
Thank you for sharing your experiences with me.

Appendix D: Demographic Data

Are you a first-time mother?
Are you currently pregnant?
Is your baby healthy?
Did you have a full term baby?
Was your baby's birth weight within the normal range at birth?
Is your baby a singleton?
What is your age range?
- 18 to 25
- 26 - 29
- Over 30

What is the highest degree or level of school you have completed?
- Primary School
- Middle School
- High School
- University or higher

Are you currently employed?
- Self-employed
- Full time employed
- Part time
- Unemployed/ housewife
- Student

Unable to work
What is your total household income?
- Less than $20,000
- $20,000 to less than $40,000
- $40,000 to less than $60,000
- $60,000 to less than $80,000
- $80,000 or more
- Don't Know

Appendix E: Permission Grant to Use Research Instrument

Anne Walsh Apr 26

Dear Janelle,

Thank you for your interest in our research.

We are happy to give approval for you to use the tool as long as:

- It is used only for the purposes of data collection for your research project as outlined below;
- Full acknowledgement is given to our research team in the referencing of the tool in your study; and
- An electronic copy of any articles that are produced using the data from the tool are forwarded to me upon publication.

There are no fees involved for you to use this tool.

All the very best with your research project.

Kind regards

Anne

Dr. Anne Walsh PhD

School of Nursing

Queensland University of Technology

Email: XXX@qut.edu.au