Mothers' decision-making about, and experiences of, weaning in Ambala City, Haryana, India: A qualitative study

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Abstract

Evidence-based studies in India suggest that support from family members and health care professionals help mothers to make decisions about infant-feeding. However, early initiation of weaning and introduction of pre-lacteal food are common practices in India, and there is limited literature exploring factors influencing mothers' decisions about weaning. Therefore, the aims of the present study were to explore first-time mothers' experiences of weaning, and to identify the factors influencing their decision-making about weaning.

A qualitative research methodology was used incorporating semi-structured interviews and observations with 30 mothers of young infants, in Ambala City, Haryana, India. A thematic analysis of the data was undertaken.

Two themes were abstracted from the data: d*eciphering the signals and weaning as a reciprocal and cooperative process*. The findings of the study suggested that, in response to *deciphering the signals,* the mothers commenced weaning initially with spoon-feeding, then as a transitional and overlapping process between spoon- and self-feeding. Weaning was depicted as a *reciprocal and cooperative process* between the mother and infant. It entailed the cooperative and progressively active and autonomous participation of the infant. At the same time, it entailed the adoption of an active and controlling approach by the mother initially, shifting increasingly to a less active and monitoring approach.

Overall, the study provides a valuable insight into how weaning commenced and progressed with a group of first-time mothers, and the factors influencing their decision-making about weaning, in India.

Master of Nursing by Research Declaration

“I, Deepika Sharma, declare that the Master of Nursing by Research thesis entitled ‘Mothers’ decision-making about, and experiences of, weaning in Ambala City, Haryana, India: A qualitative study’ is no more than 60,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work”.

Signed: Deepika Sharma

Date

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This study has allowed me to understand motherhood and being a mother myself, I feel the study has helped me a lot to mature.

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List of Abbreviations

Categories	All categories and subcategories are written in italics
Direct quotations	Direct quotations from the literature are presented in inverted commas with page numbers
Exemplars	All exemplars are presented in italics
Pseudonyms	Pseudonyms are used to refer study participants as participant numbers in exemplars and discussions
…	Words omitted from a single sentence
….	Words omitted for one or more consecutive sentences

Chapter 1 Introduction

1.1 Introduction

This qualitative study explores the experience of, and the infant weaning process adopted by, first-time mothers of infants in Ambala City, Haryana, India. The chapter begins with the justification for the study. Then, the research questions, aims of the study and the operational definitions are presented. Finally, the structure of the thesis is described.

1.2 Justification for the study

Adequate feeding practices are essential for optimum growth and development of infants, especially during the first few vulnerable years of life (Patel et al., 2015). Along with exclusive breastfeeding, timing, content and consistency of weaning food plays an important role in sustaining adequate nutrition in infants (WHO, 2018). Many researchers claim that mothers' inability to maintain exclusive breastfeeding and inappropriate weaning practices are a concern in India (Aggarwal, Verma, Faridi, & Dayachand, 2008; Engle, 2002; Sethi, Kashyap, & Seth, 2003). Current evidence-based studies in India suggest that support from family members and health care professionals, and accurate information about weaning, help mothers to make decisions about infant-feeding (Eidelman & Schanler, 2012; Patel et al., 2015). However, early initiation of weaning and introduction of pre-lacteal food are common practices in India. There is also limited literature exploring the factors influencing the mothers' decisions about weaning. Therefore, the present study was undertaken to explore the experiences and decision-making of mothers about weaning, and the factors influencing their decision-making.

Mothers may choose different methods to commence weaning, such as spoon-feeding, baby-led weaning or a combination of spoon and self-feeding. Baby-led weaning is an alternative approach to introducing solid foods, in which infants hold soft solid food in their hands and learn to feed themselves (Cameron, Heath,

& Taylor, 2012b). For example, a descriptive study, conducted by Akpor, Oluwadare, Taiwo, Aladenika, and Akpor (2020) in Nigeria, concluded that the majority of the mothers commenced infant weaning using spoon-feeding. Similarly, a qualitative study by Collison et al. (2015), in Bihar, India, concluded that mothers adopted the cultural practice of including sweet food as the first food used in the commencement of the weaning process in infants, and continued weaning using a spoon to feed purees or liquids such as lentil water.

Spoon-feeding is the most common approach used for weaning in India, where mothers initiate weaning with purees, such as vegetable and fruit purees, around the age of six months (Deshpande, 2016). They slowly progress to finger foods by the age of around eight to nine months, as the mothers believe that infants are able to hold food firmly by this age (Deshpande, 2016). The common factors influencing mothers to follow spoon-feeding are cultural influences, maternal knowledge, and guidance from family members (Mahmood, Srivastava, Shrotriya, & Mishra, 2012; Meshram, Laxmaiah, Venkaiah, & Brahmam, 2012). Maternal education also plays a crucial role in the receptivity of mothers to follow appropriate weaning practices (Aggarwal et al., 2008; Rahman et al., 2012; Rao, Swathi, Unnikrishnan, & Hegde, 2011). In addition, peer group guidance about weaning helps the mothers in the decision-making process (Rao et al., 2011).

1.3 Research questions and aims

The initial aims of the study were to explore the experiences and decision-making of mothers in respect to baby-led weaning. However, after interviewing several mothers it soon became apparent that none of them were clear about the concept of baby-led weaning. While they claimed that they were following baby-led weaning, they were, in fact, using a combination of spoon and self-feeding to feed their infants. After discussion with my thesis supervisors, it was agreed that the research question and aims of the study should be revised and focus, instead, on weaning in general and the factors influencing the process.

1.3.1 Research questions

What are mothers' experiences about infant weaning and what factors influence their decision-making about the process of weaning?

1.4 Research aims

The aims of the study are to:

1. Explore mothers' experiences about weaning.
2. Identify the factors influencing mothers' decision-making about weaning.

1.5 Operational definitions

- **Solid food**

Solid food, in the context of the study, includes food items other than breast/formula milk, such as vegetable purees, mashed banana, boiled egg and potato (Potts & Mandleco, 2012).

- **Weaning**

The process of introducing semi-solid/solid food to infants and progressively replacing breast/bottle feeding around the age of six months (Bewket Zeleke, Welday Gebremichael, Mehretie Adinew, & Abebe Gelaw, 2017).

- **Spoon-feeding**

The use of a spoon by a mother or other person to feed an infant puree and mashed solid food.

- **Self-feeding**

When infants independently hold and eat food unaided (Ripton & Potock, 2016).

- **Baby-led weaning (BLW)**

An alternative method of introducing solid foods in which infants hold soft solid food in their hands and learn to feed themselves (Cameron et al., 2012b).

1.6 Structure of the thesis

The remainder of this thesis is presented in six chapters. In Chapter, Two, a review of literature on infant growth and development, feeding and weaning practices, and practices followed globally and in India, is presented. In Chapter Three, the methodological framework employed in the study is discussed. In Chapter Four, the methods of study, including the selection and recruitment of participants and ethical considerations, are outlined and discussed. In chapter Five, the result of the study is outlined and presented. Finally, in Chapter Six, the findings of the study are discussed. In addition, the strengths and limitations of the study and the implications of the findings, are considered.

Chapter 2 Literature review

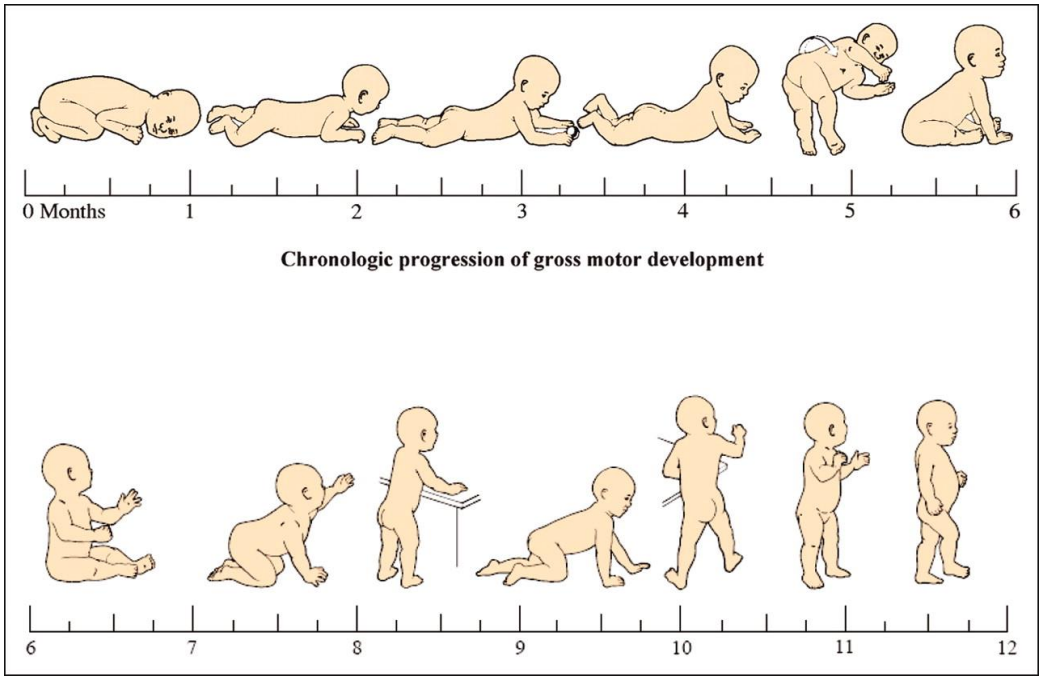
2.1 Introduction

This chapter serves as an introduction to the study, presenting a review of literature about infant feeding practices. It begins with a summary of infant growth and development during the first year of life. This is followed by an overview of weaning and approaches used for weaning. Next, feeding practices followed world-wide and then in India, are discussed. Finally, the effects of education and empowerment of mothers on weaning practices is discussed.

2.2 Infant growth and development during first year of life

Infant development occurs in a predictable way. It moves from cephalic to caudal[1]; proximal to distal[2]. Overall, infants grow rapidly during the first year of life and the phases of development are illustrated below (Figure 2.1).

Figure 2.1 Infants growth during first year of life



Source: (Shelov & American Academy of Pediatrics, 2010). *Your baby's first year*. American Academy of Paediatrics. Press: Bantam books, New York, United States of America.

[1] Growth from head to toe, in a longitudinal direction (Mangal & Mangal, 2019).
[2] Growth from centre to periphery (Mangal & Mangal, 2019).

Parallel with the physical growth of height and weight, an infant attains developmental milestones that can be assessed by observation (Kleinman & American Academy of Pediatrics, 2009), for example, sitting, grasping objects, throwing objects and rolling, crawling and walking. These developmental milestones can be classified into three categories (Petty, 2015; Shelov & American Academy of Pediatrics, 2010):

- Motor development
- Oral/Language development
- Social development

Some developmental milestones of an infant are described in Table 2.1 below.

Table 2.1 Monthly developmental milestones of an infant

Age of the infant	Motor	Oral/Language	Social
One – three months	Lifts head Follows sound Eyes follow objects	Sounds like “ooh” Strong sucking and swallowing reflex	Social smile Recognises mother
Four –six months	Rolls onto his/her back Puts toys in his/her mouth	Laughs aloud Squeaks	Interested in own mirror image Interested in family members
Six – nine months	Able to sit Can hold two objects at a time	Makes sounds, like “oo-haa” Responds to his/her name	Gets upset when left alone Self-play
Nine – twelve months	May start to stand with support or walk with support	Says two-to-three words all together, like “aa-baa-daa”	Waves bye-bye

Source: Shelov and American Academy of Pediatrics (2010). *Your baby’s first year*. American Academy of Pediatrics. New York, United States of America: Bantam Books, and Petty (2015). *Developmental Milestones of Young Children*. Minnesota, United States of America: Redleaf Press.

Naylor and Morrow (2001), suggest that infants also show internal and external signs of readiness to eat solids by the age of six months. The sucking reflex becomes more mature, and similarly the ability of the infant to hold up their head and trunk independently is also considered signs of readiness to eat solids. Hand eye coordination such as holding the food and bringing it towards the mouth indicates readiness of the infant to feed him/herself (Naylor & Morrow, 2001). For example, from six to eight months the feeding pattern changes from breast/bottle feeding in a semi flexed position to spoon-feeding in an upright position (Kliegman, Stanton, Geme, & Schor, 2015). Further, around nine to twelve months of age, infants may try to hold the cup or bottle by themselves which encourages parents to introduce finger foods, and infants slowly proceed from purees to munching dissolvable solids (Kliegman et al., 2015).

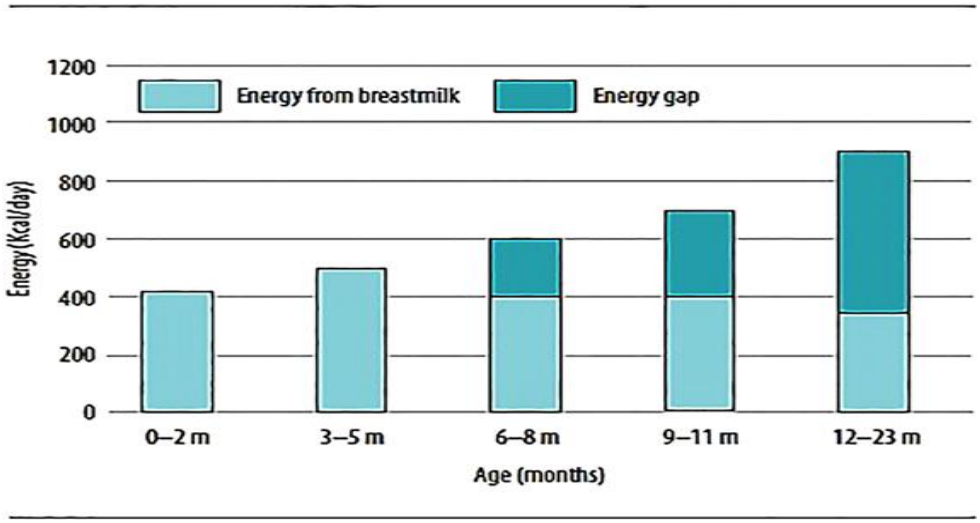
2.3 Weaning

Weaning is the process of introducing semi-solid/solid food to infants and progressively replacing breast/bottle feeding, commencing around the age of six months (Bewket Zeleke et al., 2017). The process starts when breast milk alone is no longer sufficient to meet the nutritional requirements of the infant (WHO, 2018). The World Health Organization (WHO) recommends exclusive breast feeding for the first six months of life with solid foods being introduced progressively after this time (WHO, 2018). Many countries, including the United Kingdom, New Zealand and Australia, recommend these guidelines, while other countries are making slow progress towards this goal (Cattaneo et al., 2010). Introducing solid food at six months is a relatively recent recommendation and before 2001, the WHO recommended introducing solid food between the ages of four and six months (WHO, 2001). Traditionally, at around four months, infants were introduced to purees by spoon because they were too young to sit up or self-feed (WHO, 2001). The reason for the current recommendation of delaying solid food introduction until after six months is because the infant's digestive tract is more mature at this age and infants are less likely to develop allergies and food intolerance such as gluten intolerance (Kuo, Inkelas, Slusser, Maidenberg, & Halfon, 2011; The Department of Health Australia, 2011).

Diet plays a crucial role in child growth and development and should be age appropriate. The timing of commencement of weaning plays a critical role in infants' health because early or delayed initiation can lead to adverse effects (Saleem, Mahmud, Baig-Ansari, & Zaidi, 2014). It may also lead to oral and motor skill delay in areas including chewing and speaking (Kuo et al., 2011). As mentioned previously, after six months, breast milk alone is not sufficient for infants' increasing nutritional demands (WHO, 2018) and nutrients, including iron and zinc, are slowly depleted after six months of age and cannot be sufficiently supplied by breast milk. Therefore, the introduction of other foods helps to restore these nutrients (The Department of Health Australia, 2019).

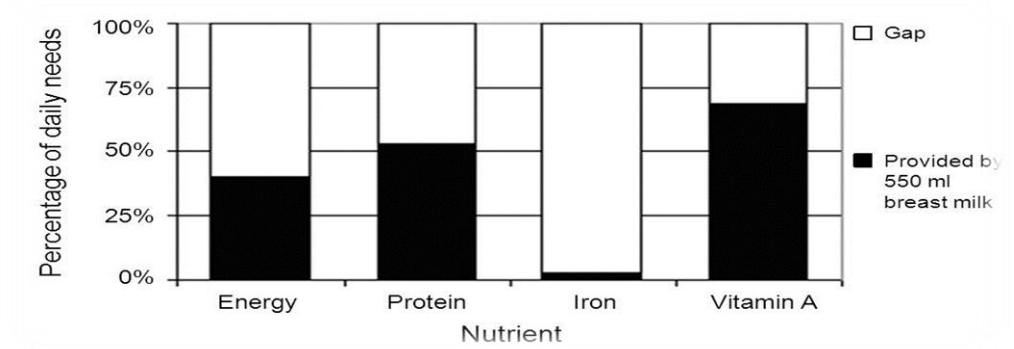
Figures 2.2 and 2.3 illustrate the energy requirement and deficits related to breast milk alone for an infant over six months. Because of these deficits, the introduction of other foods becomes important to meet the required kilocalories and nutrients, such as Vitamin A, iron and protein, for the growing infant. The total amount of energy required for a six-month-old infant, in addition to breast milk, is 200 kilocalories per day, and increases to 300 kilocalories at nine to eleven months of age, and to 550 kilocalories at 12 to 23 months of age. Weaning and the introduction of solids helps to meet this gap.

Figure 2. 2 Energy required by age and amount provided by amount of breast milk



Source: World Health Organization (2009) Infant and young child feeding: model chapter for textbooks for medical students and allied health professionals. WHO, Switzerland, p. 21.

Figure 2.3 Gaps to be filled by complementary food



Source: World Health Organization (2009) Infant and young child feeding: model chapter for textbooks for medical students and allied health professionals. WHO, Switzerland, p. 22.

The first 1,000 days of an infant's life, from conception to the infant's second birthday, are considered a vulnerable time nutritionally (Beluska-Turkan et al., 2019), when critical neural and physical development occurs (Kattula et al., 2014). If infants are undernourished during this critical period, it may lead to irreversible physical and mental impairment (Bewket Zeleke et al., 2017). However, introducing solids too early can also lead to health problems in infants (The Department of Health Australia, 2019). If solids are introduced at the age of four months, the infant's digestive and renal systems may be too immature to process the food (Kuo et al., 2011). Early introduction can also lead to other problems such as reduced milk production for mothers because infants spend less time on the breast, which interferes with the hormone regulatory feedback loop[3] (Australian Breastfeeding Association, 2018). In addition, exposure to pathogens in introduced foods can increase the risk of diarrhoea and other gastrointestinal problems in infants (Department of Health & National Health and Medical Research Council Australia, 2012), particularly in low-resource settings. Similarly, the late introduction of solids also affects infants' health, with issues such as developmental delay of fine and gross motor skills like chewing and

[3] Suckling action of the infant lead to more production of prolactin hormone and ultimately more milk is produced, but if infant does not suckle the breast then the hormone cycle of milk production is impaired, and thus, leading to insufficient production of milk (Dahl, 2015).

grasping food (WHO, 2009). Thus, it is clear that timely introduction of solids is important for infants' health and development.

The age at which weaning starts plays an important role in infants learning about and developing interest in food, which can lead to the promotion of healthy eating habits (Mura Paroche, Caton, Vereijken, Weenen, & Houston-Price, 2017). Mothers are generally keenly aware of weaning timelines related to development. An exploratory study conducted by Ntouva, Rogers, MacAdam, and Emmett (2011) in the United Kingdom (n=20) found that most mothers (61%) were aware of the importance of the timing and commenced weaning when their infants were about six months old. Reasons for early/late weaning include misjudging infants' cues for initiation of solids, resuming work, and acting on advice given by the peer group and family members (Begley, Ringrose, Giglia, & Scott, 2019; Tarrant et al., 2010). For example, in a qualitative study by Walsh, Kearney, and Dennis (2015), primiparous[4] mothers enquired about timing and type of weaning foods from their peer group and family members, including other mothers and their maternal grandmothers, believing they were knowledgeable about weaning. Another qualitative study by Begley et al. (2019) found that parents sometimes misjudged their infant's cues, such as staring at the parents while they were eating, and this misinterpretation resulted in the early introduction of solids. In addition to misinterpretation and misjudgement about timing of weaning, another reason highlighted in the literature was insufficient milk supply. Tarrant et al. (2010) in Hong Kong (n=1417) found that most mothers started weaning before the age of six months. The most common reasons given by the mothers were insufficient milk supply and the need to return to work.

2.3.1 Methods of weaning

When an infant is of the age to start solid foods, parents begin the process of weaning. The most commonly practiced method of weaning is to commence with spoon-feeding then progressively transition to self-feeding (Department of Health

[4] Women who have given birth for the first time (Moisio & Moisio, 2015).

& National Health and Medical Research Council Australia, 2012). An alternative and less commonly practiced method of weaning is baby-led weaning.

2.3.1.1 Spoon- progressing to self-feeding

When commencing weaning by spoon-feeding, parents choose the amount and type of food given to the infant. There are several common recommendations about this form of weaning, for example, by the Department of Health and National Health and Medical Research Council Australia (2012) and WHO (2018). Recommendations include introducing iron-rich purees to the infant two to three times a day from the age of six to eight months. From nine to twelve months of age, infants can have chopped-up food or finger food which they can hold in their hands, about three to four times a day. The next step is to progress to eating family food (See Table 2.2).

Table 2.2 Recommendations for weaning

Age	Texture	Example
0–6 months	Liquid	Breast milk
6–8 months	Purees	Porridge and vegetable purees
9–12 months	Chopped foods	Well-cooked food, chopped fruit and vegetables
12 months onwards	Family foods[5]	Rice, boiled eggs

Source: Department of Health and National Health and Medical Research Council Australia (2012); WHO (2018).

In spoon-feeding, the first foods fed to infants are purees, which help infants to swallow and accept solids (Durvasula, O'Neill, & Richter, 2014). Solids are often introduced with a spoon followed by self-feeding, but even though infants self-feed, mothers continue to feed them from a spoon to manage and control their

[5]Family foods are food items eaten by the whole family in their routine diet.

diet (Steinman et al., 2010). Mothers believe self-feeding creates more mess, and infants cannot achieve satiety with self-feeding (Steinman et al., 2010). There are advantages of spoon-feeding. Spoon-fed infants are exposed to more iron fortified cereals and these lead to increased height and weight gain (Roess et al., 2018). Support for this approach to weaning is also evident in literature. After conducting a cohort study, Diana et al. (2017) concluded that iron fortified cereals were linked to increased length-for-age among infants of twelve months of age. In addition, mothers believed that self-feeding infants would be unable to consume an adequate amount of food by themselves, because they were too young to self-feed for sufficiently long periods of time (Cameron, Taylor, & Heath, 2013). Spoon-feeding is sometimes considered to be a healthier approach to weaning than baby-led weaning, because mothers believe that in the latter approach infants are offered more crisps and biscuits, which can lead to inadequate nutritional intake in infants (Rowan, Lee, & Brown, 2019).

2.3.1.2 Baby-led weaning

In baby-led weaning (BLW) infants are offered a variety of food items to pick, touch and choose, to encourage their interest in food (Brown & Lee, 2011). For example, in a study by Brown and Lee (2013), mothers used BLW to introduce around 50 new foods to their infants at the age of six months because they showed signs of hunger and readiness to eat. The literature cited above signifies that the underlying philosophy of BLW is that infants are able to respond to hunger and eat to satiety (Morison et al., 2016). While there are some advantages of following BLW, there are also concerns that may influence mothers' decision to follow it. A major concern is the risk of choking, because infants may attempt to eat a bigger piece of food than they are capable of swallowing (Cameron et al., 2012b; D'Auria et al., 2018). A survey in Canada by D'Andrea, Jenkins, Mathews, and Roebothan (2016) explored the experience and perceptions of mothers and health workers about BLW. The findings indicated that health professionals expressed more concerns than mothers about the risk of choking and about low energy intake by babies following the BLW method (D'Andrea et al., 2016).

The proponents of baby-led weaning have always suggested this style of weaning is better than spoon-feeding, because it encourages infants to hold food and eat independently which enhances their development of fine motor skills (Brown & Lee, 2013). It was also suggested that baby-led weaning helps infants to control appetite by reaching satiety. Some advocates suggested that baby-led weaning allows the infants to eat a wider range of food such as variety of vegetables and fruit (Cameron et al., 2012b). Anecdotally, the most common concern about baby-led weaning to emerge is choking (Brown & Lee, 2013; Cameron, Heath, & Taylor, 2012a; Rapley, 2011). When infants are introduced to solids for the first-time it is a new experience for them to chew, and swallow (Perry, Hockenberry, Lowdermilk, & Wilson, 2013). D'Auria et al. (2018), adds that as baby-led weaning starts at six months of age not all babies have developed the oral motor skills of chewing and swallowing and hence could mistakenly ingest large pieces of food. Furthermore, Cameron et al. (2012b) suggested that following baby-led weaning, infants are offered slices of food such as, carrots or apple rather than purees, and thus choking is a danger. Concern about choking was also indicated by the mothers in a study conducted by Cameron et al. (2013), with 30% of the sample reporting at least one choking episode with whole food.

Another problem associated with baby-led weaning was nutritional adequacy which was a common concern for mothers. For example, an observational study conducted by Townsend and Pitchford (2012), concluded that infants who were self-feeding were more interested in carbohydrates than other nutrients. Infants in the baby-led weaning group were exposed to more fruits and vegetables but not meat, than the spoon-feeding group. They therefore lacked in iron-rich food such as, meat, reducing their intake of iron which is required in the early phase of weaning (Cameron et al., 2013). But Morison et al. (2016), suggested that there was no difference between the energy intake of the infants following baby-led weaning or spoon-feeding. Overall, there is still insufficient literature to draw conclusions about baby-led weaning, and while some researchers reported a risk of choking and inadequate nutritional intake others such as, Brown (2018); Townsend and Pitchford (2012), suggested no difference in choking episodes

and nutrient intake among infants following baby-led weaning compared to spoon feeding.

2.4 Global infant weaning practices

Appropriate weaning is a major determinant of infants' nutritional status (WHO, 2018), and untimely introduction of solids can lead to a risk of infants developing health related problems such as allergies and imbalanced nutritional status (Department of Health & National Health and Medical Research Council Australia, 2012). Even though recommendations for timely commencement of solids are strongly supported by health professionals, there is a considerable difference in timing between high- and low-income countries (Campoy, Campos, Cerdó, Diéguez, & García-Santos, 2018). For example, a recent survey by Campoy et al. (2018) on weaning practices among mothers in Europe found that infants in low-income countries were introduced to weaning before six months of age more often than those in high-income countries.

According to World Health Organisation (2020), by the age of six months, infants are developmentally ready for solids. If they are not introduced to solids at this age, it can lead to impaired growth and development. Also, the digestive tract of infants is more mature by 6 months, which ensures adequate digestion of solid food (Kuo et al., 2011). However, in developing countries many mothers do not understand the timing, and type of food to be given to infants during weaning. Inoue and Binns (2014), for example, reviewed some observational studies on the introduction of solid-food in the Asia Pacific region and concluded that in-spite of recommendations by the WHO, mothers in countries like, China, Vietnam and Maldives were introducing solid-food to their infants before the age of six months. A lack of education among mothers may have contributed to these findings (Inoue & Binns, 2014).

Appropriate weaning is not just limited to timing but also to the type of food used. In a quantitative study conducted by Yu, Binns, and Lee (2019) in China (n=845), the majority (94%) of infants were given semi-solid or solid food items, such as noodles, cereals, and fruit paste before the age of six months. This is contrary to WHO (2009) recommendations that young infants should not be given solid food

before six months of age because their immature gastrointestinal mucosa may result in the development of allergies (WHO, 2009).

Literature indicates that mothers from all over the world provide various health-related reasons for early introduction of weaning in infants. For example, in a qualitative study in Australia exploring factors influencing decisions of first-time mothers about weaning Walsh et al. (2015), concluded that the mothers believed early weaning would help their infants gain weight and improve their sleeping pattern. Similar results were found in a systematic review by Harrison, Brodribb, and Hepworth (2017) of studies conducted in the United States of America, United Kingdom, and Australia, which found mothers believed that early weaning would have positive effect on infants' sleep and growth. Overall, mothers' perceptions and beliefs about weaning play an important role in the decision-making process about commencement of weaning.

Untimely and inadequate weaning can cause under-nutrition, stunting[6] and risk of infection in infants. It can also have adverse effects on health later in life (Przyrembel, 2012). In a recent report by UNICEF and WHO (2019), 49 million children under five years of age were diagnosed with stunting in resource-poor settings. Malnutrition is also one major complication of poor weaning practices in infants and can lead to impaired immunity and exposure to various infectious diseases (Selvakumar & Bhat, 2007). This demonstrates how crucial it is to follow the correct form of weaning for the optimal growth and development of infants, especially up to the age of two years (UNICEF, 2019).

Globally, many health agencies have collaborated to decrease the rate of infant morbidity and to promote safe weaning guidelines. For example, the WHO, in collaboration with UNICEF, released infant feeding guidelines in 2018 (WHO, 2018), and the WHO (2009) released a teaching guide for healthcare professionals about safe weaning practices.

[6] A form of malnutrition in which a child's growth pattern is seriously impacted and can lead to short stature and irreversible cognitive and physical effects (UNICEF & WHO, 2019).

2.5 Infant weaning practices in India

As a developing country, India is making progress in promoting optimum breast feeding and infant weaning practices and, overall, has achieved a good ratio of mothers achieving exclusive breast feeding for the first six months (A. Gupta & Thakur, 2018). Nonetheless, weaning still remains a challenge in India. Various programmes, such as Integrated Child Development Services (ICDS), have been organised in India to improve weaning practices. However, this programme was only marginally successful, because of gaps in knowledge and awareness about infant-feeding practices, especially in rural areas (Cacodkar, Joglekar, & Dubhashi, 2017). Mothers in urban areas of India tend to have higher socio-economic status and education, factors that are associated with improvements in the health status of infants (Vikram, Vanneman, & Desai, 2012).

Inadequate, unsafe, and improper weaning are common in India and threaten infants' health (Mehlawat, Rekhi, Puri, & Yadav, 2018). A number of inappropriate feeding practices persist in India, such as giving pre-lacteal foods (Kaur, Kaur, & Devgun, 2015), discarding colostrum (Cacodkar et al., 2017) and early introduction of solids (Javalkar & Aras, 2018). Kaur et al. (2015) conducted a community-based study (n=257) of mothers with infants aged less than one year of age and concluded that infant weaning and breastfeeding practices were influenced by socio-cultural factors and advice from family members. These factors included giving pre-lacteal honey and jaggery[7] (Kaur et al., 2015). The impact of family members on decision-making about infant feeding was also evident in a survey of rural mothers (n=307) with children under two years (Cacodkar et al. (2017). The authors concluded that mothers' decisions were greatly influenced by grandmothers and mothers-in-law. In addition to encouraging mothers to discard colostrum and give pre-lacteal food, from six to eight months of age a mixture of boiled rice and pulses (*khichdi*) was given to infants, instead of giving fruit and vegetables.

[7] Giving jaggery (brown sugar from sugarcane) is a ritual and considered auspicious for the infant (McKenna & Shankar, 2009).

Cultural beliefs and myths play important role in decision-making about commencement of weaning in infants (Sabharwal, 2014). These beliefs are transmitted from one generation to the next through family and community members. For example, a qualitative study by Lodha and Bharti (2013), in Madhya Pradesh, India with 100 mothers of infants between 6-12 months of age, concluded that mothers have many erroneous beliefs about the type of food to be fed to infants. They believed that banana, rice, and curd caused colds and coughs to infants so they should not be given, they also believed that wheat and pulses could cause indigestion (Lodha & Bharti, 2013). Furthermore, decisions about the age of weaning was also influenced by family traditions. Most mothers in India start weaning their infants before the age of six months because of inadequate knowledge about weaning, and family traditions (Vyas, Kandpal, Semwal, Chauhan, & Nautiyal, 2014). Studies conducted in various regions in India, concluded that the age of weaning differs from one region to other depending upon maternal knowledge, socioeconomic status and cultural beliefs (Das, Chattopadhyay, Chakraborty, & Dasgupta, 2013; A. M. Khan, P. Kayina, P. Agrawal, A. Gupta, & A. T. Kannan, 2012). Along with India in other countries such as, Bangladesh, Belgium, and Saudi Arabia, most infants were weaned before the age of six months (Alzaheb, 2016; Saleh, Ara, Hoque, & Alam, 2014). Similarly, maternal decisions about how and when to introduce solid foods depended upon family traditions (Chellaiyan, Liaquathali, & Marudupandiyan, 2020).

Despite the fact that timely introduction of solids and exclusive breastfeeding are well promoted, there appears to be considerable confusion about appropriate timing for the introduction of weaning. For example, a community based cross-sectional study conducted with 186 mothers by Javalkar and Aras (2018), in urban and rural areas of Mangalore city, concluded that 45.3% of mothers commenced weaning before six months of age after being advised by family members, friends, and because of their own misinterpretation of their infants' cues. Similar suggestions by family members were also found in an observational study of 275 mothers and infants by Rathaur et al. (2018) in Uttarakhand. The results indicated that just over half the mothers (53%)

commenced weaning around the age of six months. In addition, 33% of infants received pre-lacteal foods,[8] such as honey, which could be harmful (Rathaur et al., 2018).

A wide range of variations to weaning were found in different regions of India (Dhami, Ogbo, Osuagwu, & Agho, 2019). Socio-economic status and cultural practices were the most common related factors (Dhami et al., 2019; Malhotra & Do, 2012). Cultural practices such as, giving cow's milk as the first weaning food occurred in most parts of India (Joseph et al., 2013). Colostrum was considered as 'cursed milk' and mothers were asked to discard it and only allowed to breastfeed the infants after having a ritual bath which generally delayed the breastfeeding for two to three days (Raina, Mengi, & Singh, 2012). Infants were often given pre-lacteal feed such as, ghuthi[9] or honey after birth which was the most common practice in North India (Mahmood et al., 2012). Sugar water was also considered as an important pre-lacteal food in some parts of India, it was believed that sugar water (sugar dissolved in water) would keep baby happy its whole life (Jenifer & Benjamin, 2019). Introduction of weaning foods before the age of six months such as, formula milk and home-made purees were common among mothers in parts of South India, as outlined by Maiti, Sarangi, Sahu, and Mohanty (2015). Infants were not given eggs, mangoes and jaggery as they were considered as hot food as mothers believed they could cause diarrhoea to infants (Bhanderi & Choudhary, 2010). Overall, myths and cultural beliefs about weaning are firmly rooted in Indian communities (Chellaiyan et al., 2020).

Some traditional weaning practices are also unsafe and could have an adverse effect on infants' health. For example, a survey conducted by A. Khan, P. Kayina, P. Agrawal, A. Gupta, and A. Kannan (2012) in Delhi found many unsafe practices, such as giving a mixture of water and honey along with breast milk before six months, which can cause diarrhoea in infants. Mothers indicated that they gave this mixture to help with infants' digestion, as advised by their family members and as a longstanding practice in their families (A. Khan et al., 2012).

[8] Foods given to newborns prior to the establishment of breastfeeding.
[9] Mixture of water, honey and herbs (Mahmood et al., 2012).

Aside from evidence of inappropriate infant-feeding practices, there is evidence that some mothers are aware of, and follow, current recommendations. For example, a cross-sectional study by Pradhan and Arora (2015) in Chandigarh City found that 87.6% of mothers followed exclusive breastfeeding and 81.7% commenced weaning after six months. In addition, 66.7% of mothers considered physicians and primary care givers as vital sources of information about infant feeding (Pradhan & Arora, 2015).

2.6 Role of education and empowerment of mothers in weaning

Maternal education plays a crucial role in appropriate weaning practices, and some studies have concluded that higher maternal education has a positive impact on infants' health (Kumar, Arora, Midha, & Gupta, 2015; Radzyminski & Callister, 2016). Optimal feeding practices are usually seen among educated mothers. For example, a study conducted by Alderman and Headey (2017) in 56 developing countries to assess the impact of parental education on infant feeding concluded that parental education has a positive impact on infants' nutrition. The effect of maternal education was also evident in a study by Vyas et al. (2014), who assessed the relationship between weaning practices of mothers and level of maternal education, and found that 41% of mothers who were not educated did not follow adequate feeding practices (Vyas et al., 2014). In a similar vein, Mahmood et al. (2012) conducted a study of mothers (n=123) in a rural Uttar Pradesh, India and concluded that a lack of postnatal education led to confusion about the timing of the commencement of weaning, with 25% of mothers initiating weaning before the age of six months (Mahmood et al., 2012).

Maternal education classes on infant feeding also improve outcomes. Saleem et al. (2014) conducted a randomised trial of 212 infants and their mothers in Karachi, Pakistan, to evaluate the impact of maternal education about appropriate complementary feeding on infants' nutritional status. The intervention was delivered for 30 weeks by trained community health workers. Findings showed that infants in the intervention group had larger weight gain and fewer nutritional problems than those in the control group. Similarly, Gonah and Mutambara (2016) in Masvingo, Zimbabwe, explored the effects of improved

maternal preparation by health workers on feeding practices. They concluded that mothers started feeding solids to their infants at around the age of six months after receiving instructions by health workers (Gonah & Mutambara, 2016).

Empowerment of mothers also has a positive effect on autonomous decision making leading to healthy infant feeding practices because mothers feel free to follow recommendations by health professionals (Shroff et al., 2011). Shroff et al. (2011) conducted a cross-sectional study (n=600), in Andhra Pradesh, India, and concluded that better maternal financial situation and higher participation in household decisions had a positive impact on infant feeding practices (Shroff et al., 2011). Moreover, mothers' ability to discuss their infants' nutrition with their husbands may also be related to infants' good health (Heckert, Olney, & Ruel, 2019). Similarly, Heckert et al. (2019); Sinharoy et al. (2018), also found that when mothers communicated with their husbands and contributed to decision making about infant feeding, a positive association was found between mothers' autonomy and infants' health. Therefore, participation of mothers in decision making elevates their role within the household and ultimately increases their autonomy to make decisions for their infants, such as what food should be fed to the infant (Bhagowalia, Menon, Quisumbing, & Soundararajan, 2012).

2.7 Conclusion

In conclusion, weaning plays an important role in infant growth and development. Most mothers are aware of this and commence weaning appropriately and at the recommended time. The majority of mothers commence weaning using a spoon, followed by encouraging the infant to self-feed. They considered spoon-feeding to be a convenient method of weaning, but decisions about weaning and what foods to be given were influenced by advice from family members and friends. In India, mothers considered family members, especially grandmothers and mothers-in-law, as experienced in weaning. Early initiation of weaning and introduction of pre lacteal food were found to be common practices in India. Overall, however, the literature suggests there were considerable differences in the weaning practices of highly educated and empowered women compared with rural women with less education.

Chapter 3 Methodology

3.1 Introduction

This chapter presents an overview of the research methodology adopted in the present study. An overview of qualitative research and its elements, including ontology, epistemology, methodology and theoretical perspective, is also undertaken. This is followed by an introduction to, and justification for using, the Theory of Planned Behaviour, the theoretical framework adopted in this thesis.

3.2 Qualitative research

An inductive[10] qualitative research approach was chosen for the current study. This is a good way to explore an area where little research has been undertaken previously. Qualitative research is centrally focused on human behaviour and experience and allows the researcher to explore individuals' experiences within their own social framework (Flick, Kardoff, Steinke, & Jenner, 2004). In addition, it explores how a society and individuals interact with each other and give meaning to these experiences. For these reasons, a qualitative approach was particularly suited to this study, which explored the experiences and decision making of mothers concerning baby-led weaning. Another appealing aspect of qualitative research is its in-depth and detailed approach. Miles, Huberman, and Saldaña (2013) explain that data obtained from qualitative research are the "source of well-grounded, rich descriptions and explanations of human processes" (p. 4) which shed light on a particular phenomenon. These authors also describe another useful element of qualitative data, the ability to preserve chronological flow[11] (Miles et al., 2013). Therefore, by using a qualitative research approach this researcher can gain an understanding of the various factors influencing mothers' decision making about baby-led weaning.

[10] An inductive approach is defined as the process in which the researcher gathers data without having any impact from earlier assumptions and beliefs (Holloway, 2008; Holloway & Galvin, 2016). The approach aims to help generate meanings from the data and to identify themes or categories.

[11] Ordering the series of events according to their time of occurrence, what led to what, and when (Miles et al., 2013).

Qualitative research approaches incorporate, most frequently, interviews, observations and focus group discussions (Moser & Korstjens, 2017). The number of participants involved in this type of research is not predetermined and is usually small (approximately 20-40) in comparison to quantitative studies (Sargeant, 2012). A small sample size enables the researcher to explore issues in depth, generating copious data for each participant and helping to increase the credibility and value of the findings (Moser & Korstjens, 2017). Many researchers claim that there are no rules for determining sample size in a qualitative study; however, achieving theme or category saturation is important (Malterud, Siersma, & Guassora, 2015; McCann & Lubman, 2017; Pietkiewicz & Smith, 2014) , and the sample size should be sufficiently large to explore the aims of the study. Data saturation is facilitated by sampling, including recruitment of adequate numbers of participants for replication to occur and who are experts in the research phenomenon of interest (Morse, 2015). Data saturation is achieved when sufficient amounts of data have been collected to support the themes and no new concepts or ideas are emerging (Walker, 2012). Saturation is dependent on the intensity of the analysis and richness of data (Pietkiewicz & Smith, 2014). Along with overlapping of the themes/categories and richness of the data, data saturation also depends on the skills of the researcher to collect and interpret the data (Morse, 2015).

To gain a broader picture of a particular phenomenon, interviews and observations conducted during a study should have a wide perspective. Qualitative approaches offer this broad perspective and a way to explore meaning and experience (Fain, 2009). One reason for choosing a qualitative approach in the present study is the need to obtain a deeper understanding of social behaviours that explain why some mothers may choose to allow their infants to self-feed while others may be hesitant to do so. In contrast, quantitative research methods have an emphasis on a predominantly deductive process that is often used to test pre-determined hypotheses (Bourgeault, Dingwall, & de Vries, 2010), an approach unsuited to the current study. In addition, information derived from participants through quantitative research is more superficial and less in depth. Questions are generally pre-determined, and participants have to choose

answers from limited options. While quantitative approaches are useful in quantifying attitudes, opinions and behaviours, and for establishing relationships between variables, such as cause and effect, they are much less useful for in-depth exploration of experiences and complex human behaviours. Although qualitative research is considered time-consuming to conduct (Yin, 2011), it enables the examination of new phenomena and in-depth examination of events, such as how and why things happen, incorporated with participants' emotions and feelings, and yields rich data (Charmaz, 2014). Thus, qualitative research allows the researcher to describe a phenomenon in a comprehensive manner, and to investigate the culture, society and behaviour of people through observation and analysis of their actions. For all these reasons, qualitative research was considered to be the best suited approach for the present study.

According to Denzin and Lincoln (2005), there are eight overlapping phases in the development of qualitative research.

a) The 'traditional' phase started in the early 1900s and continued until the end of World War II. In this period, the researcher entered the research field with the aim to gather data objectively, unbiased and without any personal influence on the data. Here, the emphasis was placed on positivism[12] (Denzin & Lincoln, 2005).

b) Following this phase, the 'modernist' or 'golden' phase occurred (1950-1970) in which emphasis was placed on important social processes used to explore deviation and control in social underclasses. This period introduced many new interpretative approaches which continue to be used today, including ethnomethodology, phenomenology, critical theory and feminism (Denzin & Lincoln, 2005). During data analysis in this phase, researchers looked for frequency and probabilities to support their arguments (Denzin & Lincoln, 2005).

c) Next came the 'blurred genres' phase (1970-1986) in which many interpretative perspectives emerged, such as symbolic interactionism, hermeneutics,

[12] In positivism the researcher believes in universal laws and tries to present objective reality. The role of the researcher is limited to data collection and interpretation using facts and findings (Holloway & Galvin, 2016).

phenomenology, ethnomethodology and feminism (Denzin & Lincoln, 2005). Researchers became bricoleur[13] in this phase, with those from the social sciences, for example, moving towards humanities to explore the models and methods used in their analyses, and humanities moving towards social sciences to do the same (Denzin & Lincoln, 2005).

d) The next phase was the 'crisis of representation' phase (1986-1990) during which there was a need to again address re-emerging issues of validity, generalisability and reliability in qualitative research and a renewed concern about researchers' ability to represent lived experiences accurately (Denzin & Lincoln, 2005).

e) This was followed by the 'postmodern period' (1990-1995) in which theories were perceived in more accessible terms. The idea of the unbiased researcher was undermined during this phase, and focus was placed on mid-range rather than grand theories (Denzin & Lincoln, 2005).

f) Next came 'post experimental inquiry' (1995-2000) in which researchers expanded their boundaries to represent lived experiences, including poetic representations, autobiography, literary forms and multimedia presentations (Denzin & Lincoln, 2005).

g) The following phase was the 'methodologically contested present' (2000-2005), which was considered a phase of conflict, stress and shortcomings in qualitative research. In this phase, qualitative researchers struggled to provide evidence-based approaches to practice.

h) Finally, in the 'the fractured future' phase (2005 to the present), qualitative researchers faced a methodological backlash related to evidence-based social movements and revisited critical conversations about race, gender and democracy (Denzin & Lincoln, 2005).

[13] Interchanging ideas and materials with the other research texts available (Wibberley, 2017).

A discussion of the elements of qualitative research is provided below. When qualitative research elements are positioned in order, they are as follows: ontology, epistemology, methodology, and theoretical perspective.

3.2.1 Ontology

According to Schwandt (2007), ontology refers to "the study of reality, of being, of the real nature of whatever is, of first principles. It is thus concerned with understanding the kind of things that constitute the world'' (p. 191). Hence, ontology is associated with the variety of phenomena that comprise the social world. Every person has a different understanding of a phenomenon and a different perception of reality. Realities in qualitative research are considered subjective, based on personal experiences and beliefs. An essential question in health research that researchers ask themselves is whether to consider the research phenomena as a group of ideas about things (idealism) or things that are real (realism) (Bourgeault et al., 2010). Empirical researchers believe that a single reality exists and can be studied and measured, and this is known as ontological realism (Denzin & Lincoln, 2011). Therefore, quantitative researchers believe that if an appropriate research methodology is used, the data collected will be without bias (Bourgeault et al., 2010). An underlying premise of ontological realism is that some qualities in the natural world are measurable without bias and one's own perception, but some are not. For example, experiences are not measurable without bias (Bourgeault et al., 2010). When ontology is concerned with social relativism[14], claims about reality are related to social processes, the social lives of people and how they relate to each other (Blaikie & Priest, 2017). In this view, realities are constructed individually and there are as many realities as individuals. Thus, beliefs about reality in qualitative research are dependent on individual perceptions (Saunders, Lewis, & Thornhill, 2009).

3.2.2 Epistemology

[14]Social relativism consists of the social practices and the interaction between people, of how they live and exist within their social world (King & Horrocks, 2010).

Epistemology is defined as the process of thinking about the connection between what is known to the researcher and what the researcher sees (Denzin & Lincoln, 2005). It helps the researcher to classify what is and what is not knowledge. Epistemology is concerned with the origin or source of knowledge. It explores the nature, possibilities and limitations of knowledge in the field of study (Hallebone & Priest, 2008). With the progressive development in research over time, several epistemologies have emerged; for example, objectivism, subjectivism and constructivism. Objectivism is related to the factual knowledge achieved by observation that is usually measurable and quantifiable (Collins, 2010). The researcher is objective and does not interact with participants, focusing only on the scientific authenticity of the project, as in quantitative research (Yilmaz, 2013). In subjectivism, researchers derive their own meaning about an event by exploring it (Crotty, 1998). Researcher and participants work together and findings are based on the interaction between the two parties (Guba, 1990). In constructivism, the researcher believes that reality exists and is a product of the human mind; therefore, it is subjective (Andrew, Pedersen, & McEvoy, 2011).

Epistemology raises many questions; for example, how can the researcher know reality; the connection between the researcher and the research; the principles and the characteristics that guide the researcher during analysis; the possibility of the procedure being repeated by others and, hence, the study findings being assessed for their reliability. Epistemology questions what is acceptable as knowledge and what constitutes acceptable knowledge in a field of study (Saunders et al., 2009). For a study to be successful, Crotty (1998) indicates that there should be a connection between epistemology and ontology.

3.2.3 Methodology

Methodology is concerned with the approach that a researcher takes to carry out a study. It has also been described as an organised theoretical investigation or the methods applied to research (Ishak & Alias, 2005). Methodology can, therefore, be described as a system of broad principles or rules from which a specific set of procedures and methods are derived to investigate or explore problems within a discipline or a phenomena (Gray, 2013). A theoretical

framework or philosophical underpinning influences the manner in which the research is conducted (Sapsford & Jupp, 2006). For example, a researcher using a feminist theoretical approach would embrace the underpinning idea that women's achievements are undervalued in a male dominated world. Methodology is thus based on theoretical and philosophical ideas that help the researcher to focus on the aims of the study, decide about the method to be employed, and help to clarify the role of the researcher (Finlay & Ballinger, 2006). There should be a consistency between epistemology and methodology, as in the present study, where the researcher explores mothers' experiences of decision making for weaning; hence, a qualitative research approach is best suited to accomplish these aims. It is necessary to delineate between the theoretical underpinnings or perspectives of methodologies and research methods because the distinction is often confused (Denzin & Lincoln, 2005). In the following section, the theoretical perspective of the current study is described.

3.2.4 Theoretical perspective

Hansen (2006) defined theoretical perspective as the "conceptual underpinning of a research study" (p. 182) or the foundation upon which all knowledge is constructed for the study (Grant & Osanloo, 2015). Thus, a theoretical perspective provides a context for examining a problem, consists of significant information about the literature (Abend, 2008), and describes the theories and concepts related to the research (Swanson & Chermack, 2013). A theoretical perspective assists the researcher to understand the factors that should be explored. In this way, it gives direction to the researcher during collection and interpretation of data (Hansen, 2006).

The theoretical framework adopted in the current study is Ajzen's (1991) Theory of Planned Behaviour (TPB), which has been used widely to examine psychosocial influences on human behaviours (Hamilton, Daniels, White, Murray, & Walsh, 2011). The underlying premise of the theory is that beliefs and behaviour of individuals are influenced by behavioural attitudes, subjective norms and behavioural control (Yean, Johari, & Sukery, 2015). The TPB is an extension of the Theory of Reasoned Action (TRA) developed by Ajzen and Fishbein (1980)

and both theories propose that individuals make logical decisions to perform a specific behaviour after evaluating the information available to them (S. Ryan & Carr, 2010). Below, an overview of the TRA is presented. This is followed by a synopsis the TPB, the theory that underpins the present study.

3.2.4.1 Theory of Reasoned Action

The TRA originated in the field of social psychology and explains the link between beliefs, attitudes, norms, intentions and behaviours of individuals. According to this theory, three factors determine an individual's behavioural intention (Ajzen & Fishbein, 1980):

1. **Attitude towards the behaviour.** This determines a person's opinion about a particular behaviour, whether it is good or bad, doubtful or believable. There is a direct relationship between the individual's attitude and the outcome of the behaviour (Fishbein & Middlestadt, 1987). For example, if a person believes that a certain behaviour will lead to an unfavourable outcome, then that individual will have a negative attitude towards the behaviour.
2. **Subjective norms.** These relate to anticipated social pressure and the response anticipated from close family members and friends and cultural norms, which may affect the person's behaviour. Subjective norms have two components: a) the individual's normative beliefs, what the person feels, including a component of what others anticipate or expect, and b) Individual motivation, which includes either performing the act as acceptable by all or alternatively resisting social pressure and performing the act in an unacceptable way (Fishbein & Middlestadt, 1987).
3. **Perceived behavioural control.** This refers to the ability of the person to perform a behaviour in a specific manner. It plays an important role in the assessment of behavioural intentions and helps predict behaviour (Yzer, 2012).

Theorists have criticised the concept of attitude as an underlying factor influencing a behavioural outcome (Wicker, 1969). However, Fishbein and Ajzen (1975) proposed that attitude towards a behaviour was the best predictor of a

behavioural outcome. The TRA also suggests that individuals' behaviour is not only influenced by their attitude but also by their expectations (Trafimow, 2009). This theory is used to predict a person's behaviour based on pre-existing attitudes and behavioural intentions. A person's decision to get involved in a particular behaviour depends on what the person expects to gain from performing the action (Albarracín, Johnson, Fishbein, & Muellerleile, 2001).

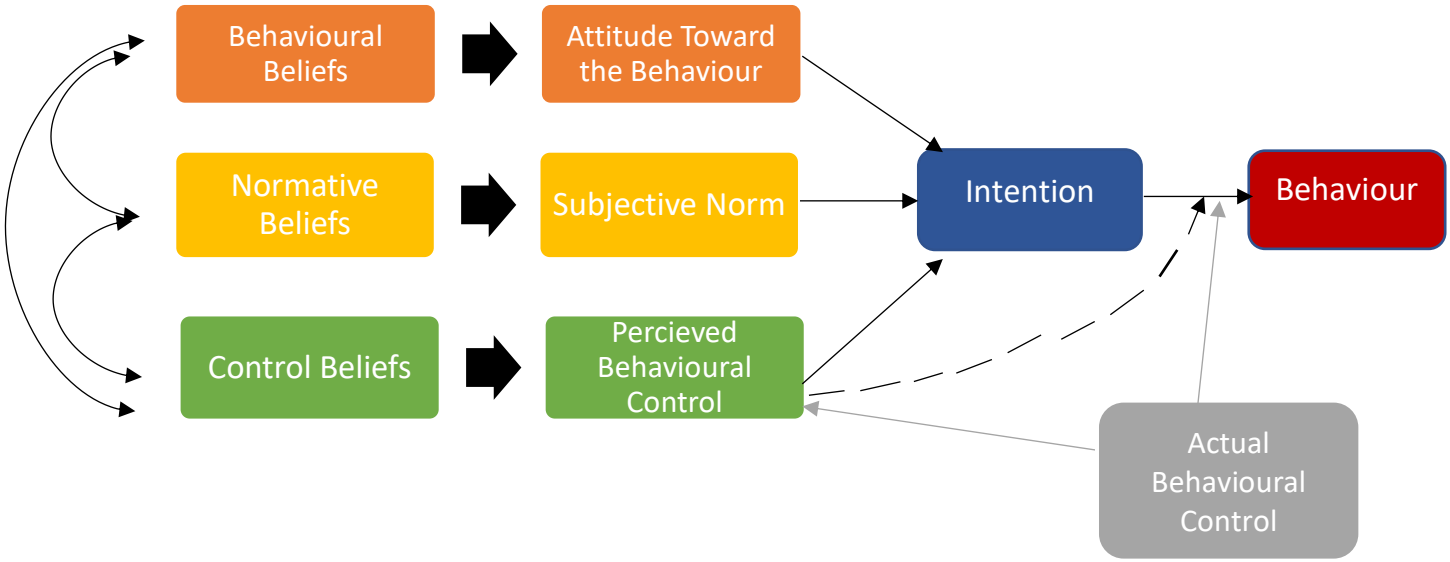
The behaviour of a person can be best predicted by her/his intentions. Behavioural intentions are the guidelines that individuals have for themselves, to perform in a specific manner (Triandis, 1980). Strong personal attitudes and positive social norms can enhance the chances of performing a given behaviour. However, sometimes social norms may contradict the attitude of a person, which may lead to a completely different behaviour (Manstead, Proffitt, & Smart, 1983). Both attitude and social norms are used to predict behaviour intention, which may not always result in an action (Fang, Ng, Wang, & Hsu, 2017). Although the TRA has interesting features it has been criticised for not focusing on important factors such as personality characteristics and demographic variables, which are both likely to promote certain behaviours (Al-Suqri & Al-Kharusi, 2015). It has also been criticised for lacking accuracy and reliability in understanding a person's attitude (Jonas & Doll, 1996).

3.2.4.2 Theory of Planned Behaviour

The TPB depicts the association between a person's beliefs and behaviour. It anticipates the individual's intention to be involved in a behaviour at a specific time and place (Ajzen, 1991). TPB is considered as one of the best social psychological theories (Lutz, 2011). It is an extension of, and was developed to overcome earlier limitations of, the TRA in explaining behavioural control. The core factor in TPB is the intention of an individual to perform a behaviour. Intention is considered as a motivational factor which may influence an individual's behaviour and indicates whether a person is interested in performing that behaviour or not (Ajzen, 1991). A stronger intention will lead to the actual performance of a behaviour (Ajzen, 1991). According to the theory, the possibility of performing a specific behaviour (behavioural intention) is guided by three kinds

of belief-based constructs (Figure 3.1): 1) a person's own belief about the consequences of the behaviour (behavioural beliefs), 2) belief about whether other people will like or dislike the behaviour (normative beliefs), and 3) belief that one can control the performance of the behaviour (control beliefs) (Ajzen, 1991). Beliefs are based on many background factors, including personal factors, social factors, and information gained over time. Personal factors include a person's general attitude, identity traits such as introvert or extrovert nature, values and emotions, and level of intelligence. Social factors include the person's age, gender, race, ethnicity, education level, and religion. A final factor includes information gained by the individual from previous experience, knowledge and exposure to media (Lutz Sommer, 2011). These social and personal factors, along with beliefs about intentions to perform a behaviour, have led to the theory's adoption in many fields other than social psychology, such as health, social science and marketing (Norman & Conner, 2017). In the following section (Figure 3.1), a brief description of the three beliefs involved in building a behavioural intention is presented.

Figure 3.1 Diagram of the Theory of Planned Behaviour (Saunders-Goldson & Edwards, 2004)



1. *Behavioural beliefs*: A person's beliefs serve as a direct link to the behavioural outcome. Individuals behave according to their beliefs. If one has a positive belief about something, then it is likely that she/he will have a positive attitude

towards the behaviour. This, in turn, eventually increases the possibility of actually performing the behaviour. Behavioural beliefs encompass beliefs about the probable consequences of the behaviour (Ajzen, 1991; Horodynski et al., 2007).

2. *Normative beliefs:* Refers to expectations of key people in one's life, particularly regarding approval or disapproval of one's behaviours. Normative beliefs are closely linked to others, such as what other people think. This approval/disapproval creates social pressure on the person to perform or not perform a behaviour. The resulting outcome is referred to as a subjective norm. Some researchers suggest that subjective norms have a significant relationship with intention and, hence, can produce an effect on intention and behaviour (Gopi & Ramayah, 2007; Ramayah, Nasurdin, Mohd. Noor, & Beng, 2017; Teo & Pok, 2003; Venkatesh & Davis, 2000).
3. *Control beliefs:* The idea of perceived control is not new; earlier a similar concept was proposed by Rosenstock (1974) in the health belief model. Personal beliefs are considered to influence health behaviour. Self-efficacy is a part of this view and refers to individuals' beliefs about controlling their own level of functioning. It involves events that affect their lives and the belief that they can accomplish the behaviour (Bandura, 1994). Perceived behavioural controls are, thus, defined as a person's belief that she/he can control and influence her/his behaviour. Altogether, a combination of a positive attitudes, subjective norms and behavioural control can lead to the development of a behavioural intention which precedes the performance of a behaviour (Ajzen, 1991; Horodynski et al., 2007).

3.3 Critique of the Theory of Planned Behaviour

TPB has been widely used by researchers in health-related studies, but despite its popularity and applicability it does have limitations. Strengths of TPB include its applicability to a wide range of studies. For example, an extended TPB was used to predict smoking behaviour among a sample of Iranian medical students (Karimy, Zareban, Araban, & Montazeri, 2015), and healthy eating intention and adherence to dietary recommendations during pregnancy in Australia (Malek, Umberger, Makrides, and ShaoJia (2017). The TPB has been found very useful

in the prediction of health-related behaviour (Ajzen, 1989). It enables researchers to determine the particular beliefs of a specific population; for example, the beliefs of pregnant women about healthy pregnancy, and resulting easier labour and delivery (Hausenblas, Giacobbi, Cook, Rhodes, & Cruz, 2011). TPB has also been used in studies related to breastfeeding practices and infant feeding (Dick et al., 2002; Hamilton et al., 2011; Horodynski et al., 2007).

Researchers have criticised TPB claiming that, along with normative beliefs, behavioural beliefs and control beliefs, other important factors may influence individuals' behaviour. These include past experiences, cultural beliefs, environmental factors, and economic factors (Lutz, 2011). For example, if a person had a bad experience in the recent past, it can be predicted that it may be not possible for the person to perform the same behaviour in the near future (Lutz, 2011). Regarding cultural beliefs, a mother who is fully aware of the benefits of colostrum and intends to feed her new born may be reluctant to do so because of a cultural practice that the colostrum should be discarded. Some researchers also claim that TPB does not include emotions, habits and moral values which are considered crucial factors in building attitudes and performance for a behaviour (Manstead, 2000).

3.4 Justification for choosing the Theory of Planned Behaviour

The TPB was selected for the present study because it provides guidance and direction for data collection and analysis. It assisted the researcher with the formulation of questions for the interview guide. In addition, the theory offers a robust means of understanding the social and contextual influences on maternal behaviour and decision making about infant feeding. It is also a good fit for the study because it has proved useful for researchers who explored perceptions and decision-making processes. For example, (White & Hyde, 2012) examined the self-perceptions of householders and their predictions about recycling. The findings of the study suggested that attitude and subjective norms helped the researcher to predict householders' intention to recycle and their recycling behaviour. The TPB offers a strong link between behavioural intention and actual behaviour; hence, it will assist the researcher to explore the intentions and

behavioural outcomes of mothers relating to infant weaning. Therefore, the TPB was considered suitable for the present study as a guide to understand the behaviours of mothers during decision-making about infant feeding and weaning approaches.

3.5 Summary

A review of qualitative research and its philosophical underpinnings was undertaken. To proceed with qualitative research, a researcher should be aware of its methodological underpinnings. After careful consideration and justification, this researcher chose to use the TPB for the research methodology with the aim of exploring the decision-making process about infant weaning. Applying this framework allows the researcher to comprehend the nature of activities, intentions and behaviours of participants. This enables a deeper analysis of the data to understand what is going on in the specific circumstances of the participants' experiences rather than relying on the researcher's own beliefs and assumptions.

Chapter 4 Methods

4.1 Introduction

This chapter begins with an introduction to the context of the study, followed by the ethical considerations, both of which affect all decisions made in the study. Then, a summary about the recruitment of the participants is provided, followed by an explanation of the data collection methods and analysis. Finally, the rigour of the study is discussed.

4.2 Context of the study

The study took place in Ambala city, in the state of Haryana, India. Information about the country, state, city and municipality, and an explanation of the local community health systems is presented here.

India is the seventh largest country by area and the second most populous country in the world. It is well known for its rich culture, cuisine and caste system (Dalla, Defrain, & Baker, 2011). In 2019, the Indian economy was among world's fastest growing (World Economic Outlook Database, 2019). Nonetheless, the country continues to face many challenges, like poverty, malnutrition and inadequate public health care (Bajpai, 2014). India is comprised of 29 states, and the state of Haryana where the study was conducted is situated in the northern part of the country (Figure 4.1).

Figure 4. 1 Highlighted red area represents Haryana state (Government of Haryana)

Ambala City, where this study was conducted, is densely populated. In the 2011 national census, Ambala district comprised 460 rural and 15 urban areas and had population of 1,128,350. Ambala City has a population of 440,167. The literacy rate in Ambala City is 87% (Directorate of Census Operations, 2011), and about 226,832 (51%) of the population are employed (Directorate of Census Operations, 2011). The number of literate[15] females is 154,505 or 44.5% of the total literate population. About 60% of the total population is middle-class. Most births in the city occur in hospitals and mothers receive postnatal and infant feeding advice after birth from health workers (M. Gupta et al., 2016). To reduce perinatal mortality, women are given a financial incentive of 6,000 rupees (approximately $US 92) to give birth in hospital (M. Gupta et al., 2016). There is one government hospital in Ambala city offering medical facilities for urban dwellers. The majority of middle-class mothers attend private hospitals for care in Ambala city, while mothers who live below the Poverty Line[16] opt for

[15] Literacy is defined as the ability of a person to understand, write in any language and do some arithmetic calculations (Hussain, Saxena, & Sarma, 2001; United Nations & Department of Economic and Social Affairs, 2010).

[16] The Poverty Line is an economic benchmark used by governments, in this instance India, to identify the people who need government assistance for their daily living (Banerjee & Duflo, 2007).

government hospitals for their children or home births by a trained dai[17] or traditional midwife. Private hospitals are expensive but have more facilities and provide better quality services than government hospitals, which charge lower fees and generally provide a lower quality of care to patients (Satpal. Singh & Yashpal, 2016).

The present study was conducted in Sabharwal Children's Hospital, a private paediatric hospital, in Ambala City, Haryana. The hospital was opened in 1990 and is a 30-bed multi-specialty hospital located in the centre of the city with emergency services, outpatient and vaccination clinics. An average of 40 middle-class mothers visit the hospital daily with their children to obtain infant vaccinations and/or health check-ups.

4.3 Selection and recruitment of participants

Study participants were mothers of infants who were voluntarily interested in sharing their experiences and decision making about infant weaning. Initially, purposive sampling was used for data collection. Inclusion and exclusion criteria were as follows:

Inclusion criteria:

- Mothers able to understand and speak Hindi (Hindi is the most commonly spoken language in India).
- First-time mothers (Chosen because I wanted to explore their unique experience. Mothers who have multiple pregnancies may have a different experience of weaning).
- Mothers of infants age between 7-12 months (Recruited because most mothers have started to wean their infants by the age of 6 to 7 months).

Exclusion criteria:

- Mothers of sick infants.

[17] Dai are the trained birth attendants, who undertake 200 hours of training in maternal and child health care, sanitation and family planning. They provide prenatal, antenatal and postnatal care to mothers who give birth at home (Devasenapathy et al., 2014).

Recruitment occurred in the following manner. The researcher explained the aims and importance of the research project to nurses working in the immunisation clinic of Sabharwal Children's Hospital. It was anticipated that nurses would identify potential participants when they visited the hospital for immunisation of their infants. Nurses were asked to provide brief information about the study to mothers who met the inclusion criteria. Mothers who were interested in taking part provided their contact details to the nurses for forwarding to the researcher, who contacted mothers directly to arrange a meeting. A pamphlet (Appendix C) prepared in Hindi containing brief information about the study and contact details of the researcher was displayed on a notice board in the hospital's outpatient department. Interested mothers could contact the researcher by telephone to schedule a meeting but very few mothers did so.

At the first meeting with each mother, a detailed conversation about the research project was undertaken and the mother was given the participant information sheet to take home to consider. All participant questions were answered during this meeting. Mothers who then called the researcher to schedule a time and date for an interview were recruited as participants for the study. As data collection and analysis proceeded, and based on the emerging concepts, purposive sampling was used to develop more dense, precise and saturated themes. Sampling continued until theme saturation was achieved. The sample consisted of 30 mothers of infants aged seven to twelve months.

4.4 Ethical Considerations

Ethics are the moral principles that govern how research is conducted. Ethics not only guide the methodology but also guide the conduct of research in an accountable and justifiable way (Gray, 2013). According to Freegard et al. (2012), research must be conducted within an ethical framework so as to protect the rights of participants. Historically, after the Nazi medical experiments in World War 2, concern about the rights of participants in research studies were examined for the first time, as the experiments had resulted in permanent injuries or death of patients. As a result of these experiments, the Nuremberg Code was developed (Vollmann & Winau, 1996). The Nuremberg Code has ten key points

(Bali, 2016): informed consent is an essential part of the human research, the results of the experiment should be useful and unprocurable, the results of the experiment should be based on an earlier result derived from animal experiments, so that it justifies the current research, research should not be conducted if there is any risk of causing harm to the participants, the researcher should be trained and scientifically qualified to conduct research, participants should be free to withdraw from the research project, and the researcher should be skilled enough to identify any harm, injury and death during the experiment.

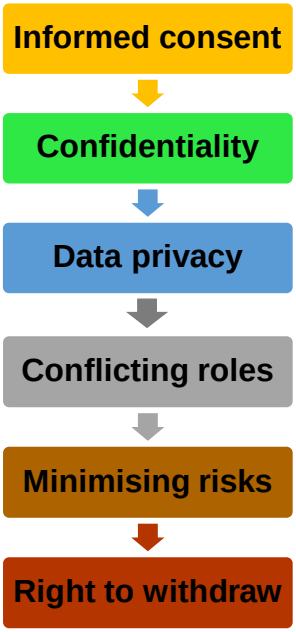
After the development of Nuremberg Code, the World Medical Association was formed, which developed detailed guidelines on medical ethics, including the Declaration of Helsinki in 1964 for patients' wellbeing and interest (Tyebkhan, 2003). The most recent amendment of the Declaration was completed in 2013 and it is considered as an essential document for human research as it emphasises a thorough assessment of risks and benefits as a prerequisite for all research involving humans (World Medical Association, 2013).

According to guidelines in the Australian *National Statement on Ethical Conduct in Human Research* (National Health and Medical Research Council NHMRC, 2018), there are ethical values and principles which researchers have to consider before, during and after commencement of the research project. In this study, ethical approval was obtained from Victoria University Human Research Ethics (approval number: HRE17-070) Committee (Appendix D). There was no ethics committee for the recruitment hospital; therefore, approval to recruit women participants was obtained from Dr H.S. Sabharwal, Director of Sabharwal Children's Hospital (Appendix A). Because data collection was undertaken in India, Professor Yogesh Kumar Dhakad[18] (overseas) acted as support and assistance for the project during this process in India (Appendix B).

Ethical issues involved in this research included informed consent, confidentiality of participants, data privacy, conflicting roles of the researcher, potential risks, and right to withdraw (Figure 4.2):

[18] Professor Yogesh Kumar Dhakad is an experienced Professor (Paediatric Nursing) at M.M. College of Nursing, Maharishi Markendeshwar University, Mullana, Ambala, Haryana, India.

Figure 4.2 Ethical issues involved in the study
(National Health and Medical Research Council NHMRC, 2018)



4.4.1 Informed Consent

Informed consent is concerned with a person's voluntary agreement to take part (or not) in a study. Informed consent is an ethical and legal precondition for conducting a study involving human participants. It requires that potential participants involved in the study are fully aware of the nature, aims and processes of the study, their role, and any potential risks (Nijhawan et al., 2013). Participants are informed about all aspects and significance of the research. It is the responsibility of the researcher to explain, in plain language, the purpose of the research, to assist people to make decisions about their participation in a study. Furthermore, participants should be competent or capable to give consent to participate in a study.

In this study, informed consent was sought from the mothers of infants who met the study inclusion criteria. Participant information and consent forms were written in Hindi. Consent forms and the participant information sheet contained a description of the aims and processes involved in the study, along with the role of the participants in the study. The consent form was translated and validated by an interpreter approved by the National Accreditation Authority for Translators and Interpreters (NAATI) (Appendix E).

4.4.2 Confidentiality and Data Privacy

Confidentiality is considered an ethical and legal principle that is concerned with the concepts of privacy and security. Privacy is related to the participant's right to control her/his information. Privacy defines an individual's right to keep information secret, whereas confidentiality is defined as protection of information related to participants from unauthorised access (Ashcroft, Dawson, Draper, & McMillan, 2007). Security is defined as the safety of the data collected from participants from unwanted disclosure. Participants who consent to take part in research can expect that their responses will be kept private and secure. According to the privacy requirements of the present study, during the data collection participants' names were not recorded and participants were assured that their responses would not be used in any other way than discussed. Anonymity is also another important principle in research, requiring that no identifying information is collected from participants (Gray, 2013). Several steps were taken to safeguard the participants' identity:

- Pseudonyms were used for each participant throughout the research.
- Identifying information was removed from the transcripts.
- Information related to participants was not disclosed to any person beyond the Principal and Associate Supervisors and the researcher.
- During the research, all notes and data collected from the participants were coded.
- The data gathered focused only on the information required to carry out the research.
- Audio recordings were converted to password-protected electronic files on the researcher's computer for transcription and then deleted from the digital audio recorder to prevent any unexpected access to data.

Confidentiality includes securing the data related to participants. Thus, securing the data is most important in a research project. A single hard copy of fieldwork data and all related written information, such as memos and field notes, were kept in a locked filing cabinet by the researcher. In addition, the data collected from participants was password-protected in Victoria University's R: Drive, which is

password secured and accessible to the Principal Supervisor, Professor Mary Carolan-Olah, Associate Supervisor, Professor Terence McCann, and the researcher. All the data collected will be stored securely for five years.

4.4.3 Conflicting Roles of the Researcher

It is important that the researcher possesses good skills to support the research. These skills include good interpersonal communication skills, ensuring that the participant is comfortable and involved in the research project, and an empathetic attitude towards participants (Holloway & Wheeler, 2013). The researcher was comfortable with this approach because it allowed her to embrace her nursing values. In this study, the role of the researcher is complementary, because the researcher is also a nurse. During observation, if the researcher found that practices followed by mothers while feeding their infants were inadvisable, or if mothers had queries regarding their practices, the researcher would advise the mother to follow up with her doctor any queries regarding feeding.

4.4.4 Minimising Risks

Assessment of any risks to the participants is an important ethical consideration. Kagarise and Sheldon (2001) defined risk as “the probability of harm or injury (physical, psychological, social or economic) occurring as a result of participation in a research study” (pp. 39). In this study, there was minimal potential risk to mothers of becoming distressed during interviews and/or observations. It was also necessary that potential participants were made fully aware that although there were no clear advantages in taking part in the study, it may be therapeutic to share their stories with the researcher. In the unlikely event of a mother becoming distressed, the researcher had developed several strategies to deal with this situation, including providing basic emotional support if required, stopping the interview, or offering the mother an opportunity to withdraw from the study. The researcher would advise the mother to visit the doctor regarding any concerns she had about her infant’s health.

4.4.5 Withdrawal

Sometimes participants elect not to be a part of the research project or choose to withdraw (National Health and Medical Research Council NHMRC, 2018). In the beginning of the data collection, the researcher informed participants that withdrawal from the study would not affect their access to existing services. In the current study none of the mothers withdrew from the study. All the participants voluntarily took part to share their experiences and decision making about infant weaning.

4.5 Assumptions and Expectations

Before commencing the fieldwork, I considered factors that may have influenced my interest and assumptions about the study. According to Malterud (2001), “a researcher’s background and position will affect what they choose to investigate, the angle of investigation, the methods judged most adequate for this purpose, the findings considered most appropriate, and the framing and communication of conclusions” (pp. 483-484). Researchers have their own perceptions of the situation under study. Their social identity and backgrounds can affect the study (Gerrish, Lathlean, & Cormack, 2015), as well as their previous knowledge and experience of the study focus and setting (Sutton & Austin, 2015). In the current study, the researcher is a nurse and she had to think carefully, so that her presumptions and background knowledge did not affect the study. A balance between objectivity and sensitivity about the research situation should be maintained. Objectivity is being impartial and accurate about the events, whereas reflexivity helps in developing sensitivity towards important issues and allows the researcher to increase awareness about the connection between the data and the researcher (Dickson-Swift, James, Kippen, & Liamputtong, 2016). Although reflexivity is a broadly used term in qualitative research literature, it is a very complicated and difficult concept to define (Carolan, 2003). Reflexivity is defined as awareness by the researcher “of his effect on the process and outcomes of research based on the premise that knowledge cannot be separated from the knower” (Thorpe & Holt, 2007, p. 183). In other words, reflexivity means examining the researcher’s own preconceptions and assumptions and how they affect research decisions. Reflexivity enhances the credibility of the findings by

accounting for the knowledge, beliefs and values of the researcher (Cutcliffe, 2003).

The researcher's assumptions and expectations were influenced by her academic, professional and personal experiences. After observing neonatal practices during her Master of Nursing studies, she became interested in exploring infant feeding practices and new trends in infant feeding. The researcher also gained professional experience after completion of the Master of Nursing while working as Clinical Instructor for four years in a paediatric ward in a private hospital. The researcher is also the mother of a toddler and had gained experience regarding weaning while feeding her infant.

4.6 Data collection methods

4.6.1 Entering the field

Before planning for data collection, I considered how best to enter the research field, to establish a good relationship with the participants, and to develop my data collection skills. Entering the research field is considered an important step in the process of the data collection because it affects the entire work of the researcher (Trigger, Forsey, & Meurk, 2012). Therefore, before commencing data collection the researcher should immerse herself/himself in the field (Chughtai & Myers, 2016).

In this study, the researcher was familiar with the participants' environment because she comes from the same city, so the mothers were comfortable in talking to her. There was clear and concise communication with each participant to make her feel comfortable during data collection. In the beginning, a telephone conversation was held with the mother to decide the date, time and venue for the interview and/or observation. A meeting was scheduled, and the researcher helped mothers feel comfortable about her presence in their homes, starting with an introduction. She then provided a brief overview of the study, after which the mothers were more comfortable about sharing their experiences.

4.6.2 Semi-structured interviews

One of the unique characteristics of qualitative research is that it is not limited to a particular instrument for data collection, but can employ many ways to explore a research problem (Silverman, 2013). As the aim of this study was to explore the experiences and decision making of mothers about infant weaning, in-depth semi-structured interviews and observations of mothers and infants were considered the most appropriate ways to collect rich data. This approach is likely to lead to the collection of dense data (Corbin & Morse, 2003). In total, data comprised interview transcripts, field notes and memos.

Interviews in qualitative research are usually guided by pre-determined list of questions and a few open-ended questions (Gray, 2013). Semi-structured interviews allow the researcher to prompt to discussion about the research topic with participants. The researcher is guided by an interview guide or *aide memoire* during the interviews, which include the areas to be explored by the researcher (DiCicco-Bloom & Crabtree, 2006). The *aide memoire* helps the researcher to stay focused and is helpful in gathering information in a similar way from all participants. Recording of interviews is considered appropriate, because handwritten notes can sometimes omit important points (Jamshed, 2014). All the interviews were carried out face-to-face so the researcher could include other data that could contribute to the study, including facial expressions, gestures and body language. Interviews were audio-recorded, and field notes were written. As data collection commenced, simultaneous data analysis was undertaken so that the researcher became aware of emerging concepts and was able to explore these with mothers.

In qualitative research, additional questions can be added during data collection and analysis based on emerging ideas and concepts. In the current study, after interviewing six mothers, additional questions were added by the researcher based on the emerging concepts. The data collection procedure was flexible, because sometimes the researcher had to wait while a mother comforted her infant. At the beginning of the interview, the researcher aimed to put the participant at ease, for example, by giving her and her infant time to settle. The researcher started with simple questions that were easy to answer. As the interview progressed, the researcher developed some insight into exploring

information from the participants and prompting the discussion. This helped her to pursue questions that provided more in-depth information (Holloway & Galvin, 2016). Each interview took approximately one hour. The researcher concluded by debriefing, talking to the mothers about some lighter issues, leaving them calm and comfortable, restating the confidentiality of the data collected, and answering any questions.

4.6.3 Participant Observation

Participant observation involves the researcher going into the field, observing how and what the participants do concerning the field of observation. This method of data collection was useful in the study because the researcher came from the same cultural background and had an understanding of participants' culture, beliefs and environment. Thus, she was easily accepted and warmly welcomed by the mothers. After a few minutes of conversation, mothers were comfortable with the researcher observing their infant while feeding. Participant observation allowed the researcher to study how mothers performed weaning and the interactions between mother and infant during this activity.

A single episode of observation was planned with eight mothers. Participant observations were passive and were undertaken for a maximum of one hour, depending upon the routine of infant feeding. During the observation period, the role of the researcher involved not only observing what was happening, but also listening to the interactions between mothers and infants and having informal conversations with the mothers regarding weaning. The researcher focused on behaviour of mothers towards their infants while feeding and the reaction of infants towards them.

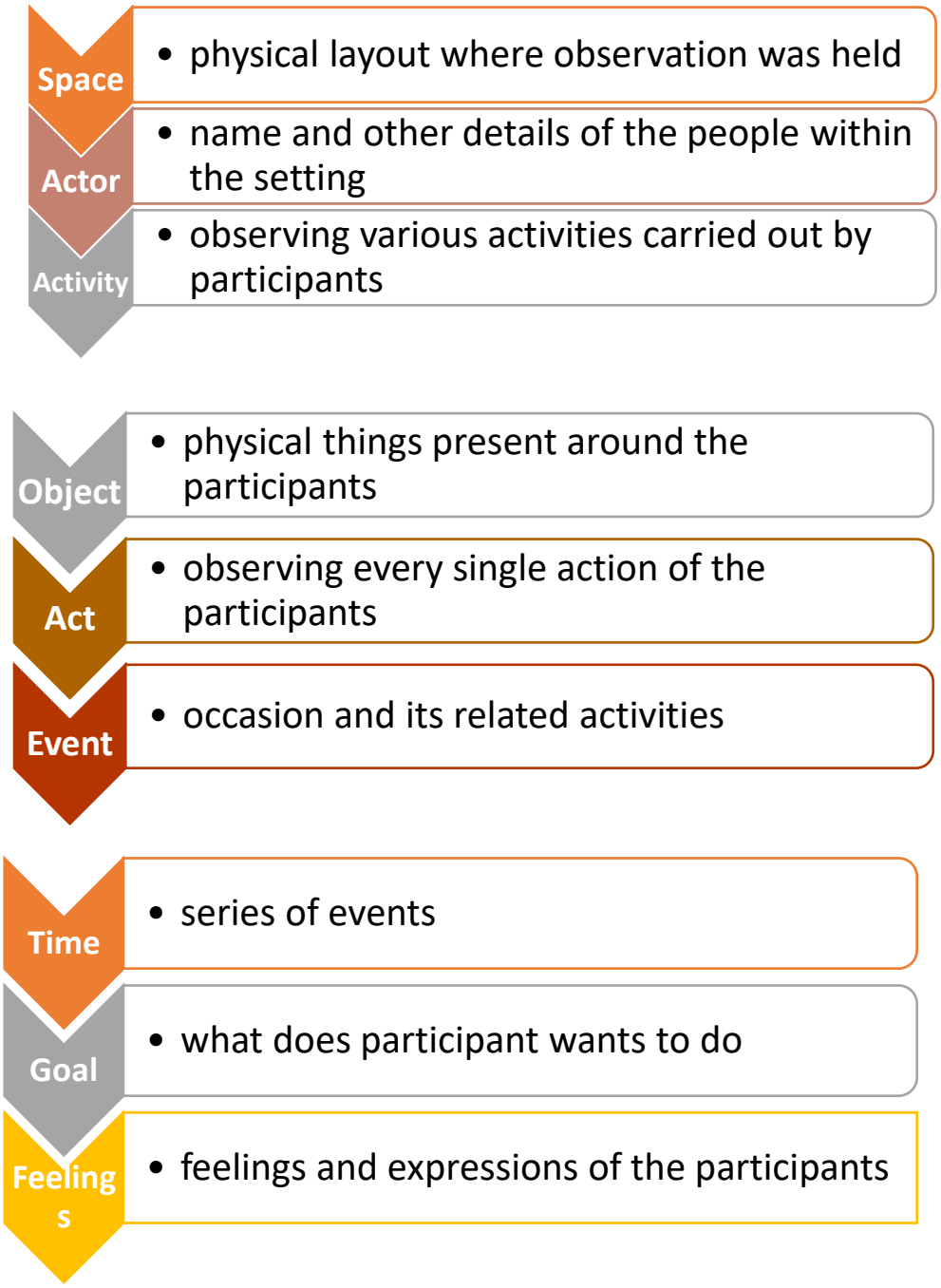
Field notes[19] were used to record observations. To allow the researcher to focus on key points to be recorded, her observations were guided by Spradley's framework for observation. The researcher observed the surroundings, noting where the observation occurred and the part physical surroundings played in

[19] Field notes are the key points recorded while observing a specific phenomenon under study (Canfield, 2011).

relation to the participant's responses. The details of the participants and all activities done by them, along with their feelings and expressions, were noted and observed (Spradley, 1980 p. 78) (Figure 4.3).

Figure 4.3 Spradley (1980) elements in participant observation

Source: Spradley (1980)



The researcher followed these elements while carrying out observations and recording information from them immediately, using a template she had prepared. Spradley (1980) claimed that observation progresses in three stages: descriptive, focused and selective observation. Descriptive observation includes everything that a researcher sees and includes colour, appearance and environment of the setting. Through time, the researcher is able to concentrate more on particularly interesting aspects that can help in answering the research questions. This is known as focused observation. Finally, the researcher focuses on very particular or selective matters such as similarities and dissimilarities (Holloway & Galvin, 2016; Spradley, 1980). For example, the researcher asked mothers if they adopted spoon-feeding at the beginning of the weaning period. The information gathered from these three stages provided dense and rich data about the phenomenon under study.

4.7 Data management

Data collected from observations, interviews and field notes were analysed. Brief notes were made in Hindi while observing mothers implementing weaning with their infants. These notes were later transcribed into English as a document. All documents related to data collection were organised according to date and time and were labelled.

Interviews were first transcribed in Hindi by an experienced Hindi professor, then translated into English by a NAATI approved interpreter. After translation of the interviews by the National Accreditation Authority for Translators and Interpreters (NAATI) approved interpreter from Hindi to English, the translated interviews were reviewed by the researcher again. Back translation was not undertaken as NAATI approved translators are considered appropriately trained and reliable translators. Following translation, the researcher carefully re-read the transcripts to explore areas emphasised by the participants. This approach helped the researcher to become familiar with the data and participant modes of expression prior to commencing analysis.

4. 8 Data analysis

Data analysis is defined as the organisation of data into simpler forms that can be synthesised into results (Berthold & Hand, 2013). Corresponding data collection and analysis enables the researcher to develop theoretical insight and identify emerging themes. During analysis, the researcher should ask the question, “what is happening here?” This question will allow the researcher to explore social processes. Many things in the setting influence and enrich the data (Charmaz, 2014). Data analysis commenced from the first interview and continued until the last, and NVivo, a computer program for qualitative data analysis, was used initially to help visualise, manage and organise the data.

Braun and Clarke’s (2006) six-step approach was adopted to analyse the data. (1) The transcripts were read and re-read to obtain a broad understanding of the mothers’ experience of infant weaning, and initial ideas were noted. (2) The transcripts were scrutinised closely and initial codes inserted. Coding is defined as “the process of transforming raw data into a standardised format for data analysis” (Gray, 2013). (3) Codes were then grouped into provisional themes. (4) The themes were reviewed and a thematic ‘map’ of the analysis was developed. (5) The themes were then refined and clustered into themes and sub-themes. Saturation of themes with ‘thick’ description of the data was obtained when no new data emerged to support each me (Holloway & Galvin, 2016). (6) A more intense analytical ordering of themes and sub-themes, including selection of illustrative exemplars, took place.

A semantic level of analysis was carried out, progressing from initial description and summary, in the results chapters, to interpretation, in the discussion chapter (Braun & Clarke, 2006).

4.9 Rigor of the study

Rigor in qualitative studies is critical. Rigor is defined as the strength of the research design and suitability of the research method for the research questions (Morse, Barrett, Mayan, Olson, & Spiers, 2002). Qualitative research has been, and in some cases continues to be, criticised by some quantitative researchers

as being biased and lacking in generalisability or validity (Anderson, 2010). However, this view is not accepted by qualitative researchers who use different criteria to ensure quality. Quality is appraised by criteria such as trustworthiness and confirmability. Trustworthiness of the findings in qualitative research can be assessed by various methods (Prion & Adamson, 2014). Lincoln and Guba (1985), for example, proposed four main criteria for assessing the rigour of qualitative research: credibility, dependability, confirmability, and transferability. These criteria were adopted to ensure quality in the current study.

Credibility is defined as the truthfulness of the findings (Jeanfreau & Jack, 2010), or the confidence in or believability of the research. It ensures that findings reflect believable information derived from participants' accounts (Korstjens & Moser, 2018). Qualitative researchers generally build in certain checks to ensure credibility of their findings. Lincoln and Guba (1985), for example, proposed a number of ways to enhance credibility: prolonged engagement in the field, triangulation of sources, peer debriefing, negative case analysis and member checks (pp. 301-316). Adequate engagement in the research setting is important (Krefting, 1991), and helps to develop familiarity with the environment which ultimately helps researchers to collect more related data (Shenton, 2004). Prolonged engagement thus helps to develop a sense of trust and rapport with participants. This allows the researcher to gain richer and more in-depth data, and also helps to achieve greater understanding of the phenomenon under study (Barusch, Gringeri, & George, 2011; Creswell, 2007). In the current study, the researcher spent considerable time with participants during the interviews in particular.

Dependability is defined as the consistency or reliability of data and is related to stability of the findings. Elaborative and dense information about the methods of data collection and analysis help in enhancing dependability of the study (Krefting, 1991). An audit trail can also help (Lincoln & Guba, 1985). This is a transparent review of the research steps undertaken, from the beginning of the study to the development and reporting of findings (Lincoln & Guba, 1985). Dependability can be established by code–recode and stepwise replication (Anney, 2014). In the code–recode strategy, the researcher codes the data twice

with a gap of two weeks between episodes. A comparison between the two sets of coding follows (Walters, 2008). In stepwise replication, two researchers analyse the data at the same time and then compare their results (Anney, 2014). In the current study, dependability was addressed by a detailed description of the steps involved in the study, which included memos, field notes, interviews and observations.

Confirmability is defined as the neutrality of the study, including the requirement that findings are informed by the participants' responses and not by the researcher's bias or interest (Krefting, 1991). Although humans are prone to bias and unbiased qualitative research is very difficult to achieve (Patton, 2014), steps should be taken to ensure confirmability of the findings. Three methods can be used to enhance confirmability: an audit trail, a reflexive journal and incorporating multiple methods of study. As stated above, an audit trail can be maintained by making comprehensive notes about the background of the data and the rationale for each methodological decision (Barusch et al., 2011). A reflexive journal or diary maintained by a researcher is one way of recording changes and decisions made during data collection procedures (Browne, 2013). Some researchers use many methods to enhance dependability. For example, recording the researcher's thoughts daily will help with comparison of the data. In the present study, confirmability was addressed by an elaboration of each decision made during data collection, recruitment and analysis of the study.

Transferability is defined as the applicability of the findings in other contexts. (Erlandson, Harris, Skipper, & Allen, 1993) argued that it is impossible to generalise research findings to other settings in naturalistic enquiry, as observations are defined as they occur in a specific context. But the prospect of transferability should not be rejected. Bassey (1981) proposes that if researchers believe their situation is the same as in other research settings, the themes can be extrapolated. Lincoln and Guba (1985) proposed that a detailed description of the fieldwork can help other researchers relate the themes to their own settings. Therefore, thick description or detailed explanation about the field allows the reader to understand the information embedded in the data and transfer it to other settings (Creswell, 2007). Transferability can be achieved by detailed description

about the setting, study and participants, which will help the reader to understand the different terms may be used to define similar problems (Graneheim & Lundman, 2004). If the reader is able to derive the same findings in other similar context, generalisability of the findings of the study is achieved (Korstjens & Moser, 2018). In the current study, a detailed description of the sociodemographic characteristics of the participants, including their educational level, economic status and living arrangements, has been provided. These characteristics may have influenced the decisions and experiences of the mothers towards infant weaning.

4.10 Summary

In this chapter, a summary of the context of the study and the selection criteria for the participants was presented. Emphasis was placed on ethical issues involved in conducting the study, but as a low risk research study, no ethical concerns emerged as a major issue. A detailed summary of data collection methods was presented, which included interviews and participant observations. A summary of data analysis was then presented, including the use of NVivo software and manual analysis, by the researcher. Finally, the rigor of the study was discussed, which included various methods to enhance the trustworthiness and believability of the findings.

Chapter 5 Results of the qualitative study of infant weaning

5.1 Introduction

The aims of this qualitative study were to understand mothers' experiences about infant weaning, and to explore the factors which influenced their decision making about weaning. In this chapter, the results of the study are presented. Two themes were abstracted from the data: *deciphering the signals* and *weaning as a reciprocal and cooperative process*. The chapter begins with a summary of the socio-demographic characteristics of participant mothers and their infants. This is followed by an exploration of the main contextual determinants that influenced mothers in *deciphering the signals* and in *weaning as a reciprocal and cooperative process*. Next, the first theme, *deciphering the signals,* suggesting readiness for spoon- and self-feeding, is presented. Finally, the second theme, *weaning as a reciprocal and cooperative process,* which explores the approaches adopted by mothers to wean their infants and the infants' participation in the process, is described.

5.2 Socio-demographic characteristics

Thirty mothers participated in the study. Their mean age was 29 years, ranging from 22–35 years. Generally, the mothers were well educated (Table 5.1), all had completed high school, and most (n=23) had undertaken some tertiary education and were stay-at-home mothers (n=27), having made the decision not to work in paid employment after marriage. A small number of them (n=3) had been employed after their marriage in various forms of paid employment, such as primary school teacher, high school teacher, and as a technician in an information technology company. One of these three chose not to continue in paid work after her infant's birth while the other two resumed work post-delivery, and their infants were cared for by their grandmothers. Most mothers (n=24) lived in extended

families[20] with their parents-in-law. Family decisions, including those relating to the infants, were generally made in consultation with older family members, particularly mothers-in-law. A small number of mothers (n=6) lived in a nuclear[21] family setting. In this case, infant-related decisions were influenced primarily by the husband, family members, friends and information on the Internet.

The mean age of infants was nine and a half months, ranging from 7–12 months (Table 5.1). Most infants were able to sit up independently and perform gross motor activities such as flexion and extension of the fingers and prop themselves (support themselves) up on their hands. Just over half (n=16) the infants were girls. All the mothers commenced spoon-feeding around the age of six months, which was followed by encouraging self-feeding along with spoon-feeding at the age of nine to twelve months.

[20] An extended family is multi-generational consisting of three (or more) generations of the family, including grandparents, parents and their children, living in the household (Supriya Singh & Bhandari, 2012).

[21] Nuclear family is defined as a set of parents and their children living together (Bryant, 2016).

Table 5.1 Socio-demographic characteristics of the mothers and infants

	Number (N=30)	%
Mother's highest education level		
High school	7	23.3
Diploma	3	10
Degree	7	23.3
Post graduate degree	13	43.3
Occupation		
Home duties	27	90
Paid employment	3	10
Type of living arrangements		
Nuclear family	6	20
Extended/multi-generational family	24	80
Gender of infants		
Male	14	46.6
Female	16	53.3

5.3 Contextual determinants of deciphering the signals and the reciprocal and cooperative process of weaning

Context is defined as the conditions, circumstances and situations which may influence participants' responses (Wallace & Van Fleet, 2012). Thus, contextual determinants are the factors or circumstances that affect the outcomes or findings of a study. In the present study, mothers often did not initially recognise or comprehend their infants' signals related to weaning. When their infants acted in a way that they considered unusual, such as crying a lot, especially before initiation of weaning, they sought advice from family members, including mothers-in-law and, occasionally, from paediatricians, in order to understand what was happening. These sources of advice acted as contextual determinants. Several

contextual determinants influenced the mothers in *deciphering the signals* and *the reciprocal* and *cooperative process of weaning: influence of family and significant others, enhancement of health literacy about weaning, past experience observing other women commence weaning,* and *infant-related influences.*

5.3.1 Influence of family and significant others

Mothers were influenced primarily by discussion with family members through which they developed understanding about the signals for commencing weaning. Because most were living in extended families, they relied on their mothers-in-law in particular, believing that the latter were experienced and had good knowledge about infant feeding in general. Most participants felt they needed this advice and support to care for their babies and make decisions about weaning in particular. It was also observed during interviews that infants were being taken care of by their grandmothers. Participants' mothers-in-laws looked after the infants most of the time. They observed the infants' activities related to food and guided mothers about when to start spoon-feeding and encourage self-feeding. For example, participants 8 and 10 felt content when discussing their extended families, their support and guidance in child rearing and feeding.

> *…. I get so much help from my mother-in-law and sisters-in-law to look after my baby… such as when to feed and bath him… he is with his grandma most of the time … and all his activities are observed by her rather than me and so, decisions about his diet, clothing and play are also decided by his grandma* (Participant 8).

> *I always ask my mother-in-law and sisters-in-law before introducing a new food item to my baby; I am scared that I may give something wrong …. my baby's change in behaviour got my mother-in-law's attention, after which she discussed with me about my baby's food such as what food to give and when to give* (Participant 10).

Mothers living in nuclear families sought advice from a wider range of people than mothers from extended families, including their husbands, family members, friends and neighbours. The mothers believed that seeking advice from all available sources would help them to gain more knowledge about weaning and assist them in decision making about it. These mothers indicated that sometimes a discussion with neighbours and friends about feeding was very useful, specifically when they were uncertain about feeding. They also described how their neighbours, including older women and first-time mothers, advised them about infant signals, weaning processes and commencement, based on their own experiences. In the exemplar below, one of the mother participants shared her experience.

> *Whenever I went out with my baby, everyone would ask how many months old is he? .... after looking at him and his activities they would say, "he is growing fast"… and start giving their suggestions, such as "start solids now, do spoon-feeding"…* (Participant 17).

After being advised by significant others, the mothers were keen to initiate weaning. In addition to signals, the influence of family members and their guidance was considered in relation to the decision about methods of weaning. Cultural considerations and previous experiences of other mothers influenced mothers. Participants respected family members and welcomed their suggestions and advice about infant feeding. They indicated that they received advice from their mothers- and sisters-in-law about what to do and what to avoid during pregnancy, delivery, infant feeding and general upbringing. In the exemplar below, one mother discussed how she received encouragement from family members to persevere with self-feeding.

> *If I did not give* (food) *in his hand, he would start throwing toys everywhere and then cry a lot…I did not think he could eat much, but all the elders in my family advised that it did not matter whether he eats or not but, at least I should try to give him* (food) *in his hands, so that he learned to eat* (Participant 2).

In summary, most mothers specified that their family members were very supportive in the decision-making process about weaning, from deciphering the signals to initiating spoon-feeding and encouraging self-feeding.

5.3.2 Enhancement of health literacy about weaning

Mothers in the present study tried to gather information related to weaning from all accessible sources. These sources included use of the Internet and discussion with paediatricians.

5.3.2.1 Acquisition of health literacy from the Internet

Nowadays, the Internet is one of the most accessed sources of information for health consumers (Laugesen, Hassanein, & Yuan, 2015) but exploring the Internet is not always beneficial, because it also has some harmful impacts[22] (A. Ryan & Wilson, 2008). Mothers in the present study had access to the Internet from their smart phones and gained additional information about infant feeding from television, pamphlets and newspapers. Most of them accessed YouTube to obtain information about infant feeding. Information obtained from YouTube supported decision making about signals and commencing spoon- and self-feeding as well as other general infant care matters, including breastfeeding.

> *I got beneficial information about infant feeding on YouTube. I also sought advice from my family members, but for up-to-date information I go for the Internet …. Whenever my baby cries a lot or behaves odd, I try to explore on YouTube about it* (Participant 24).

> *….. You can Google anything related to your baby… our all queries are easily answered on the Internet….in the beginning, he used to spit out everything, I thought he did not like the food… but one day while reading an article on the Internet I found out its quite normal with the babies in the beginning* (Participant 20*).*

[22] Elaborated in Chapter 6 (Discussion).

5.3.2.2 Acquisition of health literacy from paediatricians

Generally, mothers attended private clinics in Ambala city, which was a common practice for middle-class individuals in the region. Healthcare facilities are easily accessible in urban areas, and in Ambala city there are tertiary health care hospitals[23]; if mothers have any concern regarding their infants, they can access a paediatrician at a hospital. Participants discussed the signals for readiness for weaning displayed by their infants, such as excessive crying and asking for feed more frequently, with paediatricians, who alerted them to commence solids using spoon-feeding and later encouraging infants to self-feed. The mothers explored every available source of information about infant feeding, as seen in the following exemplars:

> *I visited a* [paediatric] *physician when my baby turned six months old for guidance regarding feeding. Also, I asked my sister as she had a baby too, so I also asked her about feeding and what food items should I give… because he was not getting satisfied with my milk and cry a lot …* (Participant 17).

> *I knew only my milk was not enough for her…I have heard about giving solids from our physician and read about it also on Internet….my baby was doing same things with the food as I have read* (Participant 30).

Overall, the mothers' primary sources of information about infant feeding were their family and significant others, but they wanted to incorporate all the suggestions sought from the other sources and follow the best method for weaning their infants.

5.3.3 Past experience observing other women commence weaning

Past experience of observing women weaning infants had an impact on mothers in the present study. They shared stories relating to feeding practices in their families, such as having seen their own mothers, grandmothers and sisters introducing purees, fruit juice and mashed food items to their cousins and

[23] The third level of the health system, providing specialised intensive care units, advanced diagnostic services, and specialised consultative care (Shi, 2012).

nephews at around the age of six months. They believed that by following the same steps, they would contribute to their infants' healthy development.

> *… after the ceremony* (a cultural practice where first solid food is introduced after a religious prayer)*, my grandmother gave my nephew kheer*[24] *for the first time before introducing solid… he was so happy after eating it and behaving as if he was asking for more kheer,… and then spoon-feeding started* (Participant 19).

> *My sister-in-law started spoon-feeding her baby when she was five or six months old; by the age of the twelve months she started giving [the infant] food in her hands …. and also, her baby was very active and started eating all the food items which my sister-in-law used to give her* (Participant 23).

In addition to the initiation of solids through spoon-feeding, the mothers shared their experiences about encouraging self-feeding. They had seen their own mothers spoon-feeding infants and offering them food in their hands. They had also observed a step-by-step introduction to solids, such as giving purees by spoon first, followed by semi-solids with a spoon and in the infants' hands, then progressing to solids and encouraging infant self-feeding.

> *I have seen my mother feeding my nephew; she used to make him sit, surrounded with lots of toys and then spoon-feed him. Also, she was giving small pieces of chapatti in his hand too with which he used to play and in between eat also* (Participant 20).

In summary, participants believed that all mothers have different experiences of feeding their infants. They sought advice from other mothers to obtain valuable information about weaning in addition to the information found from family, Internet, and paediatricians.

[24] A mixture of cooked rice and milk with sugar.

5.3.4 Infant-related influences

Three main infant-related contextual determinants were abstracted from the data: *infant's age and stage of development, concern about choking*, and *apprehension about inadequate nutritional intake.*

5.3.4.1 Infants' age and stage of development

Mothers indicated that their infants' activities had increased with age. They stated that when the infants were around four months of age, they were calm and quiet, and not so active. Those aged six to eight months were barely sitting independently but were exhibiting signals indicating readiness for spoon-feeding. Infants' age and stage of development heightened mothers' awareness of the infants' readiness first to commence spoon-feeding around the age of six months and, later, to encourage self-feeding around the age of nine to twelve months. One mother shared her experience of how her infant's activities had an impact on her decision to encourage spoon-feeding.

> *I thought he was very young and would not be able to digest something more than my milk, but after observing his activities, like rolling over and holding his head, I thought that he was ready to start solids* (Participant 25).

Infants aged between nine and twelve months displayed different signals than those aged six to eight months. They behaved unusually with food, especially during meal times. When the infants saw food in their vicinity, they tried to grab it, sometimes clapped their hands in excitement or banged things to make a noise to get their mothers' attention and exhibited interest in food. The excitement of the infants towards food was also observed by the researcher while undertaking observations. The researcher observed that infants made some sounds from their mouth and with their hands after looking at the food. The mothers became alert and attracted towards this behaviour, which contributed to the decision-making for commencing spoon- and self-feeding.

> *Whenever I bring food in a bowl or plate to feed her, she would get excited; I think she smells the food and gets more excited and happier. She would*

sometimes try to hold the spoon or glass, whatever is nearby, in excitement (Participant 19).

Around six months of age, and in response to deciphering the signals, mothers-initiated weaning by commencing spoon-feeding. After two to three months of spoon-feeding, around the age of nine months, they encouraged infants to hold food and then to feed themselves.

5.3.4.2 Concern about choking

Almost all mothers expressed concern about choking when infants were being encouraged to self-feed, and most had witnessed choking on at least one occasion. Choking was usually caused by infants taking and attempting to swallow pieces of food that were too large. As a consequence, mothers were apprehensive about encouraging self-feeding, and believed that if they fed their infants by spoon, then there was less risk of choking. Participant 22 described how, following a choking episode, she blamed herself because she had left her daughter unsupervised while eating. She also indicated that after the incident she never left her daughter alone again while eating and only offered her small pieces of food.

I could not forget the day when she took a big bite of the apple which got stuck in her throat… it was my mistake, I left her alone but that was only for two minutes and this incident occurred (Participant 22).

Participant 24 also shared a similar experience of choking. She was anxious while discussing the incident of her infant choking on a grape, given to introduce him to a new taste. After the incident, the mother only gave him soft solids. Such choking incidents affected mothers' decision-making about self-feeding.

One day I gave him grapes; I thought he would suck the juice from it and then leave the rest, like he does with oranges. But instead of sucking the juice he put one whole grape in his mouth…he started coughing continuously and turned red and had watery eyes (Participant 24).

5.3.4.3 Apprehension about inadequate nutritional intake

Mothers stated that while they were cognisant of the nutritional requirements for infants as their age increased, they were also apprehensive that self-feeding might lead to inadequate nutritional intake. This situation arose because the infants wasted food while self-feeding by playing with it, rather than eating it. According to some mothers, infants were attracted to colourful, texture of the food and easily handled food, such as carrots and cucumbers, and were less interested in soft and juicy food. As a consequence of wasteful behaviour, mothers were anxious that their infants were not consuming an adequate and nutritional diet.

> *She feeds herself, but I am not satisfied with the quantity of food she eats. She eats less and throws more…I could not completely rely on her for her feeding* (Participant 7).

> *She likes carrot very much and would quickly pick it up from the variety of food I offered to her such as oranges or kiwi* [fruit] (Participant 1).

Overall, mothers were keen to encourage their infants to eat independently. However, decisions to initiate weaning and later encourage self-feeding were not easy for them. They were influenced by several factors, including suggestions from family, significant others, Internet, paediatricians, and experiences of other mothers. Along with these factors, some infant-related factors affected mothers' decisions, such as infants' age and development, and the risks of choking and inadequate nutritional intake. Mothers believed that these contextual determinants helped them in decision making about signals for, and approaches to, weaning and enhanced their knowledge about weaning.

5.4 Deciphering the Signals

The first theme *deciphering the signals* relates to mothers' understanding of signs of infants' readiness to commence spoon- and self-feeding. Infants start acquiring their primary language not by learning words but by a combination of signals and sounds to communicate their feelings (Bergelson & Swingley, 2012). Mothers in the present study discussed the non-verbal signals relating to infants' interest in

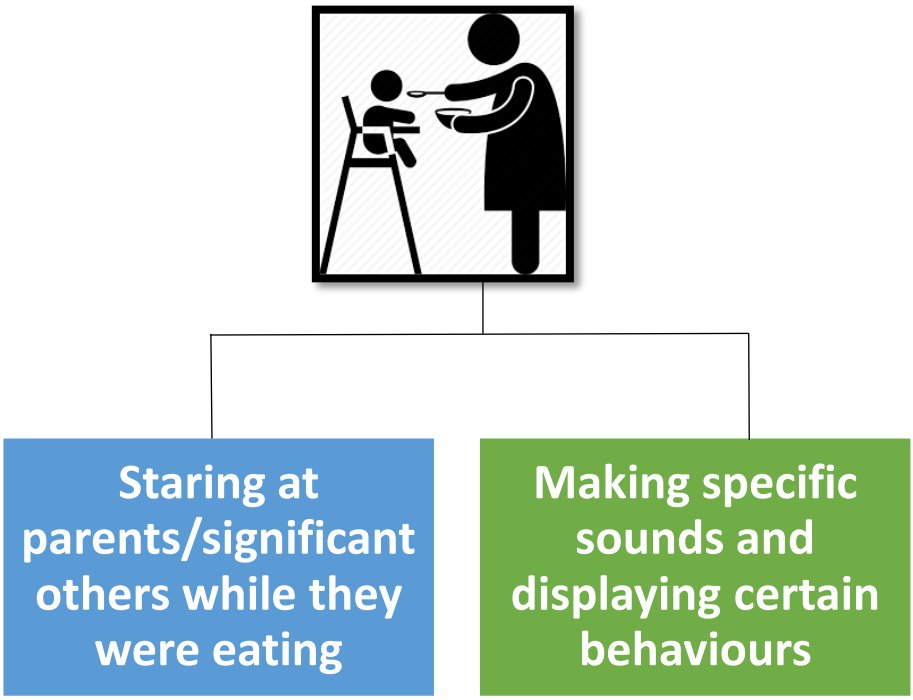
or desire to have food, that differed from their usual behaviour and which were only displayed while infants were eating or playing. They observed that their infants behaved differently during meal times or when they were undertaking activities related to food preparation, such as making more sounds than usual and moving their hands and legs briskly. This decoding of their infants' signals by mothers is called *deciphering the signals.*

Mothers believed that the most important source of nutrition for infants from birth to six months of age was breast or formula milk. After the age of six months, infants required additional sources of nutrition to support their growth and development, which could be achieved by the introduction of solids (Meyer, 2009). The addition of solids helped them to acquire essential nutrients required for sustained growth and development. Solids in the present study were introduced initially by spoon-feeding, then self-feeding. In addition to the contextual determinants outlined above, the infants exhibited a range of signals suggesting their readiness for weaning. These are incorporated in two sub-themes: signals suggesting readiness to commence spoon-feeding, and signals suggesting readiness to encourage self-feeding.

5.4.1 Signals suggesting readiness to commence spoon-feeding

Mothers believed that their infants grew at their own pace, which included physical, social, and emotional development. They observed behavioural changes along with physical changes, almost every month. Mothers observed various signals that infants used to communicate their desires, needs, and feelings from five to six months of age, such as crying when they were hungry, laughing and smiling when they were at satiety, and trying to grab items close to them. Signals indicating their readiness to commence spoon-feeding in addition to breast/bottle feeding, included *staring at the parents/significant others while they were eating,* and *making specific sounds and exhibiting certain behaviours when parents/family members were eating or handling food* (Figure 5.1).

Figure 5.1 Signals suggesting infants' readiness to commence spoon-feeding



5.4.1.1 Staring at parents/significant others while they were eating

Mothers noticed a change in their infants' day-by-day behaviours and added that they were happily learning about their infants' activities and trying to understand their behaviours. Mothers observed unusual behaviours by their infants, such as staring at them while they and family members were eating or drinking, but the infants' behaviour was different when mothers were doing non-food-related household chores. The infants' staring caught the mothers' attention and they realised that it was time to add solids to their diet. Participants 3 and 14 shared this experience.

> *I was about to eat, and I looked at him; he was looking at me as if he was so hungry, with his eyes wide open and briskly moving his hands and legs. I thought that he wanted to have the chapatti that I was holding in my hand…* (Participant 3).

> *Whenever we were eating, she was either on my lap or in front of my eyes… I observed many times that she would stare at us when we were eating or drinking. She would look at us as if she was hungry and try to convey it to us* (Participant 14)*.*

Some mothers indicated that their infants responded when the parents were eating but also became excited when they observed them doing any food-related activities. The infants were also affected by the activities of other family members. Infants who were usually involved in playing and giggling by themselves now began to take notice when someone else was eating. They would stop their own activities and start staring at that person or move their hands and legs briskly to express their excitement and interest in the food.

> *…when his cousins were playing around him, he was so happy, … but when he saw them eating, he rolled over on his tummy and start moving his hands and legs* (Participant 5)*.*

Mothers indicated that they first considered the signal of staring at them while eating as a normal behaviour. However, when they observed that it occurred particularly during meal times or while eating and drinking, they considered that perhaps their infants were not satisfied with breast and/or bottle feeding only.

5.4.1.2 Making specific sounds and displaying certain behaviours when parents/significant others were eating or handling food

Mothers indicated that they observed changes in their infants' behaviour and found that some changes were noticed by other family members also, such as mothers-in-law. They believed that when the infants put their thumb or fingers in their mouth, that meant they were hungry. Mothers noticed that when they finished feeding their infant, the baby would suddenly start sucking a thumb as if they were not satiated. They were confused as to the reason behind their infants' behaviour and discussed it with their mothers- and sisters-in-law.

> *Before taking any decision for my baby, I preferred asking my mother-in-law, especially when I have to decide about solids and how to start it… as*

suddenly my baby became so impatient and make some different sounds (Participant 17).

I just fed my baby and put him down, and immediately he put his thumb in mouth as if he was still hungry…sometimes he would start making sucking and swallowing sounds immediately after breast feeding (Participant 25).

Other mothers noticed that their infants were still hungry after bottle feeding, and became irritated quickly, which resulted in them rubbing their gums, and sometimes also rubbing their noses. Mothers were confused at first by this behaviour, because they thought that it could be a part of play or related to teething. They believed that during teething their infants might become irritated and rub their gums against things, such as toys or hard things. Participants 24 and 25 described their experiences as their infants continued sucking the teat of the empty formula feed bottle after feeding.

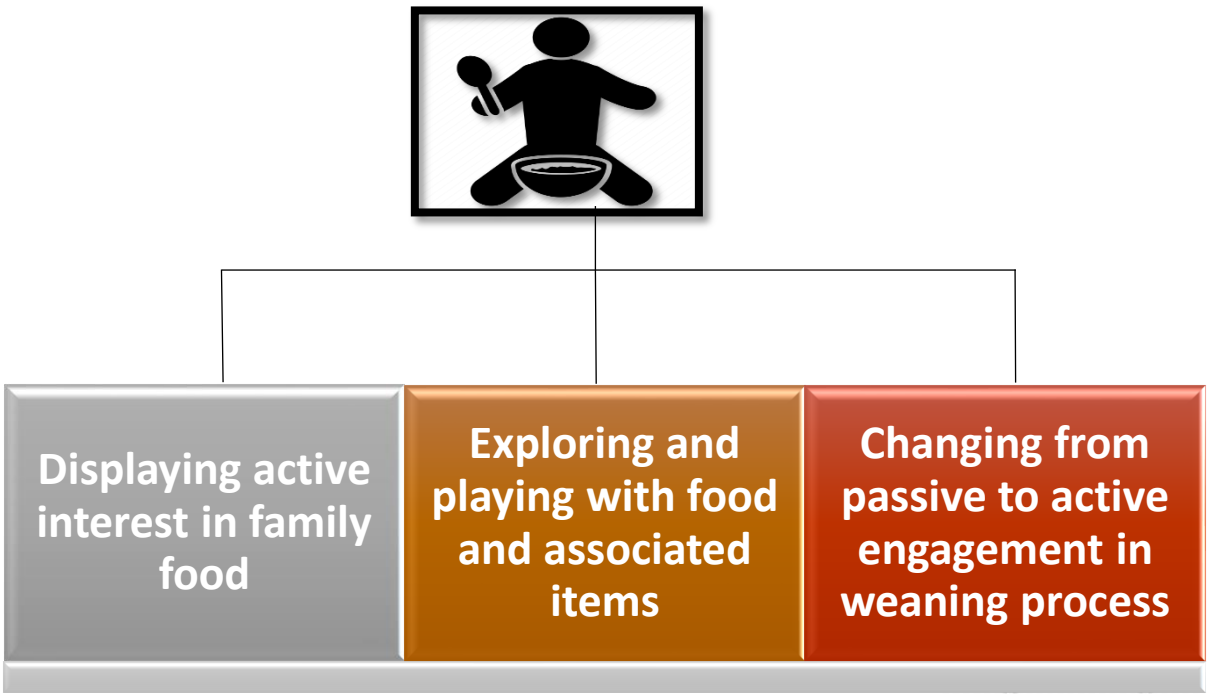
She was not satisfied with my milk alone, and even after breastfeeding her, she would cry, get irritated and rub her nose with her hands and put her fingers in mouth (Participant 24).

…but as he finishes his milk, he would continue to suck the bottle, and if I try to take the bottle, he would cry or hold it with gums…I was confused about this behaviour of my baby, as at this stage infants also start teething (Participant 25).

5.5.1 Signals suggesting readiness to encourage self-feeding

After commencing spoon-feeding, the mothers perceived some unfamiliar signals displayed by their infants that helped them in the decision-making process for encouraging self-feeding. Signals included (Figure: 5.2): *displaying active interest in family food, exploring and playing with the food and associated items,* and *changing from passive to active engagement in the weaning process.*

Figure 5.2 Signals suggesting infants' readiness to commence self-feeding



5.5.1.1 Displaying active interest in family food

Infants displayed many signals that indicated hunger, such as attempting to take food from their parents' plates and putting things such as toys into their mouths. These signals were the primary signals by which infants expressed their interest in food. The mothers interpreted these signals to indicate that they desired to feed themselves and that they wanted to try something more than spoon-feeding. As the infants grew, their interest in food also developed.

According to some mothers, their infants attempted to grab edible and non-edible items, while a few attempted to grab food items only. They shared experiences about their infants' increasing interest in food items. The mothers also added that they found the infants to be very curious about foods which mothers were eating. Infants were in a new phase of development and often undertook activities either related to food or play, as the mothers in the exemplar below discuss:

> *I remember the day when she first grabbed the whole chapatti in her hand. There were some guests for lunch at our house, and I was serving them*

food. Suddenly, my daughter crawled towards the chapati kept in the hot case[25] *and grabbed the whole chapati in her hand and started eating it* (Participate 6).

One evening when we were drinking tea, and whatever we eat with it, either snacks, fries or biscuits, she would come and start looking for edibles; she would try to snatch everything (Participant 14).

Mothers noticed a change in their infants' interest, from toys to edible items. One mother shared an interesting experience involving her daughter, who held out her hand while her mother was eating. She started making vocal sounds suggesting that she wanted to eat from her mother's plate. The mother believed that her daughter was attracted to the food when she (the mother) was eating. When she offered her daughter some food, surprisingly, she opened her mouth to eat. This behaviour signalled to the mother that her daughter had developed an interest in consuming family food, and it helped her to better understand the developmental changes in the infant.

I remember that day when she held my hand when I was eating. She stretched her arm towards my plate and started making some sounds and opened her mouth as if she was hungry and wanted to eat what I was eating (Participant 22).

She then tried to pick up the food and directed her hand towards her mouth. That is when we learned that she was hungry and wanted something more than purees (Participant 14).

The mothers interpreted signals given by the infants, such as crawling towards parents and independently displaying interest in food. The researcher also observed infants crawling towards food, when they saw food nearby. Mothers perceived that their infants were hungry and wished to try family foods. They also

[25] An insulated container with a lid which is used to keep food warm.

perceived that the attraction for family food signalled their readiness for self-feeding.

> *I have seen many times, whenever we all sit together, my son thinks as if we were going to have a meal. He starts moving towards us to grab something to eat* (Participant 2).

5.5.1.2 Exploring and playing with food and associated items

Mothers considered play an essential factor for initiating self-feeding; hence, they offered food items to the infants along with toys. They believed that play created a healthy and positive environment for infants and, therefore, enhanced their healthy growth and development. Play included toys and playing with the food or food-related items such as a spoon, plate or bowl. Mothers further stated that they expected exploring food-related items would increase infants' interest in food and encourage them to eat independently.

> *Whenever I prepared the table for the lunch or dinner, he would crawl towards the utensils and start playing with the spoon or plates, and also try to put empty spoon or glass in his mouth* (Participant 9).

Some mothers believed that when the infants were holding toys independently and putting them in their mouth, this was also an important signal for commencing self-feeding, because they considered that infants would repeat the same process with food. So, the mothers offered food in combination with toys. Although they were aware that their infants would waste a lot of food, they thought that eating while playing would increase the infants' interest in food and enhance their self-feeding skills.

> *When I am spoon-feeding him, he would always ask for something to play, either empty glass, spoon or toy. He wants to keep himself busy in playing and I also encourage him to do so, so that slowly he would progress towards holding the food in his hands* (Participant 29).

Most mothers had similar perceptions about play. They believed that it had an important role in building self-feeding habits and developing interest in food. They also believed that play enabled their infants to become involved in physical activities, such as throwing things around, or firmly holding toys and putting them in their mouth, which would help in gross and fine motor development.

> *I always encourage her to play as much as she can, as my mother-in-law suggested that play would help in growth of the baby… by crawling around with toys…throwing them all around and banging them on floor* (Participant 1).

5.5.1.3 Changing from passive to active engagement in the weaning process

The mothers observed a progressive change in their infants' food consumption-related behaviour after the commencement of spoon-feeding. When they initiated spoon-feeding solids, the infants ate with little or no hand or leg movement. However, this almost passive behaviour was replaced progressively by active participation in the process and was characterised by the infant attempting to hold the mother's hand and, sometimes, the bottle unaided. While feeding purees, the infants would also put their hands in the bowl containing the puree and put the contents on their face and clothes. The researcher also observed this behaviour, as some mothers were feeding their infants during the interviews. In addition, it was observed that some infants attempted to grasp the spoon with which their mother was spoon-feeding. The mothers believed that these behaviours were signs of increasing independence and readiness for self-feeding.

> *… he has become very naughty. Earlier, he used to be quiet and eat, but now he would make mess, try to hold the bowl or spoon from my hand… may be earlier he was too young to do these things but now…* (Participant 16)

> *I was feeding him and he would try to hold the bottle, as if he was big enough to hold and feed himself… I was amazed when he repeatedly did this* (Participant 28).

Initially, mothers were happy when they saw their infants holding, throwing and playing with toys. However, they slowly they realised that their infants could hold objects firmly. In the exemplar below, one mother shared an experience of giving her son water in a sipper[26] and noticed how he grasped the receptacle firmly at one side and started playing with it. When she tried to take it from him, she realised the grasping ability of the infant and interpreted this as a sign to encourage self-feeding.

> *I usually feed him water in a sipper, so that his clothes do not get wet and … he holds the sipper from one side and started shaking it. Although he spilled the water all over* (the place) *his grip was so tight that I had to snatch the sipper from his hand* (Participant 17).

Participant 21 below was surprised to see her daughter trying to hold a glass by herself. She thought that her infant was ready to feed herself and was surprised by the infant's newly acquired skill.

> *Whatever I hold, she would try to hold it. One day I saw her lifting an empty glass towards her mouth; I thought she might be thirsty. So, I gave her some water to drink, but then I saw her trying to hold a glass of water by herself; it was so amazing … I told everyone in the family* (Participant 21).

5.6 Weaning as a reciprocal and cooperative process

In response to the contextual determinants summarised earlier, and after deciphering the signals of readiness to consume food other than breast/formula milk, the mothers commenced weaning. It was evident that weaning was a transitional process, overlapping at times. Mothers introduced spoon- and then encouraged self-feeding in a step-by-step manner. After a few months of spoon-feeding, the infants progressively exhibited new behavioural signs indicating their readiness to commence self-feeding.

The theme *weaning as a reciprocal and cooperative process* between the mother and the infant involves the cooperative and progressively active and autonomous

[26] A plastic cup with adjustable spout over it to suck liquid in it.

participation of the infant. Simultaneously, it shifted the mothers' approach to weaning from a completely active approach to, progressively, a monitoring approach. Two sub-themes encompass this theme: *commencing spoon-feeding* followed progressively by *encouraging self-feeding.*

5.6.1 Commencing spoon-feeding

Mothers considered spoon-feeding a traditional and convenient method of initiating the weaning process. All infants were being spoon-fed at the time of data collection, and some were being spoon- and self-fed. Mothers transitioned to spoon-feeding from breast feeding only or breast and bottle feeding in response to a range of contextual determinants and after deciphering the signals of readiness for weaning displayed by their infants.

Mothers commenced weaning, initially spoon-feeding, because they were aware that after six months of age breast feeding only or breast and bottle feeding was insufficient to meet the increased nutritional requirements of growing infants. To provide optimum nutrition to their infants they initiated spoon-feeding. One mother (Participant 15) with an infant aged seven months discussed how she introduced solids through spoon-feeding. She added that she became aware that solids would make her infant more active and boost her growth and development.

> *When my baby turned seven months… I started giving her khichdi*[27]*and semolina with milk. After few days, I started giving her soup containing pulses and rice. After giving her a 'top-feed'*[28]*, I observed so much change in her activities and growth as well* (Participant 15).

5.6.2 Strategies for commencing spoon-feeding

Two key strategies were implicit in spoon-feeding: *supporting the infant's head and neck* and *introducing a variety of foods*.

[27] Mixture of rice and pulses.
[28] Mothers used the term top-feed for giving solids.

5.6.2.1 Supporting the infant's head and neck

Some mothers provided support with pillows to raise their infant's head while feeding; others held the infant in their lap to support her/his neck. Mothers believed that supporting the neck and head would help the infants to swallow purees easily with less risk of regurgitation, and also protect the infant's neck from harm with the support. These mothers had different perceptions of self-feeding because they believed their infants (7–8 months old) were too young to feed themselves, compared with mothers whose infants were aged nine to twelve months. Participants 24 and 25 explained.

> *I feed my baby* (purees)*; she cannot feed herself as she is very young, only seven months old. I lay her down gently in my lap and feed her* (Participant 24).

> *During feeding, I usually place two pillows below his head and place two pillows on his sides, so that he does not roll over the bed* (Participant 25).

5.6.2.2 Introducing a variety of foods

Mothers planned to feed a variety of foods from the first day of weaning because they wished to develop their infants' taste and interest in a range of food. Their infants liked to eat an assortment of food and some would make faces or spit out food if it was offered too frequently. Participant 17 shared her experience.

> *I have to make at least four to five different food items for him in a day. If he has cerelac[29] in the morning, he will not eat the same in the afternoon or evening; he wants different food every time* (Participant 17).

They did not want them to become fastidious about food, so they offered them salty and sweet food. The infants were soon able to differentiate between these types of food. Most mothers believed that their infants liked sweet food items such as banana, grapes, and boiled rice in milk with sugar. They were able to distinguish between their infants' behaviour while eating sweet and salty food.

[29] Puree made from powdered cereals.

When they were happy with sweet items infants made vocal sounds, whereas when eating salty food, they made faces or even cried. One participant shared her experience related to feeding her infant salty food.

> *If I feed him roasted semolina with water, which is a bit salty in taste, he would make faces and sometimes even start crying that he did not like the food and is asking for something else* (Participant 11).

5.7.1 Encouraging self-feeding

In response to contextual determinants and deciphering the signals, mothers used different approaches to encourage infant self-feeding. Most mothers believed that self-feeding would satisfy their infants' hunger and prove advantageous to themselves. Self-feeding was a transitional process and was encouraged cautiously, with most infants (90%) receiving a combination of spoon- and self-feeding initially. Nevertheless, self-feeding had dual benefits. For infants, it allowed them to have greater control of their eating habits and enhanced their physical and cognitive growth and development. For mothers, it enabled them to be less directly involved in, though continuing to be discreetly watchful of, their infant's self-feeding, and helped liberate them to engage in other activities.

5.7.1.1 Strategies for encouraging self-feeding

Mothers had different perceptions of self-feeding. Some infants ate everything they were offered. These mothers were relaxed because they did not have to run after their infants to feed them or prepare something special for them to eat. Alternatively, a few mothers were stressed because their infants wasted food and because they had to feed them completely by spoon. At the same time, they were happy to see that their infants were holding and mashing food. This depicted the infants' interest in food, and the mothers believed that sooner or later these infants would also eat the food.

> *I want my baby to eat by himself so that I do not have to run behind him with food… my son likes to eat everything. He is not choosy about food,*

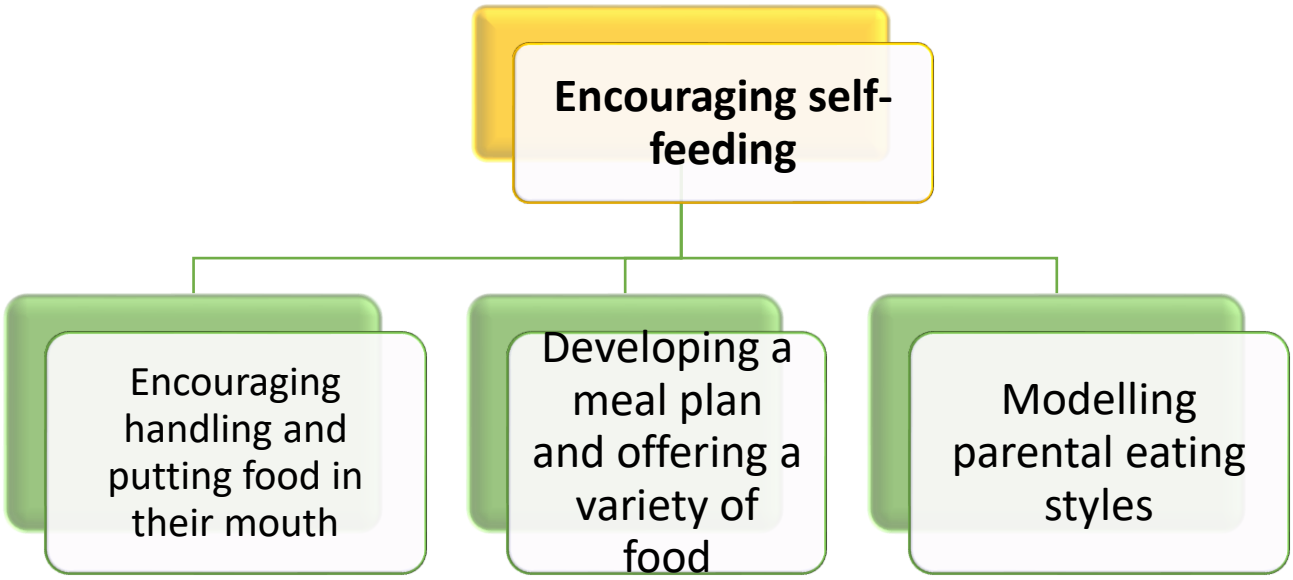
nor is he attracted particularly towards sweet or salty food; he eats everything (Participant 8).

When I offer him small pieces of fruit, he crushes them and puts them all over his face and hands … but it does not matter for me, as I am happy that at least he is holding and mashing food by himself (Participant 6).

Sometimes she is very irritable, and then if she is not in a good mood, does not matter if it's her favourite dish. She would mash it, waste it and spill it over… Finally, I have to feed her (Participant 1).

The mothers adopted three strategies to facilitate the transition from spoon- to self-feeding (Figure 5.3): encouraging infants to handle and put food in their mouth while undertaking food-related activities, developing a meal plan and offering a variety of food to develop their taste and interest in food, and modelling parental eating styles to encourage them to learn to eat food independently with their hands and a spoon.

Figure 5.3 Transition from spoon- to self-feeding



5.7.1.1.1 Encouraging handling and putting food in the mouth

Mothers encouraged their infants to pick up food and put it in their mouth. One participant shared an experience about her infant son's attraction to food and how she responded to it by encouraged him to eat.

> *He follows me in the kitchen; whatever he sees there, he would put in his mouth…after looking at this behaviour, I gave him a slice of orange and he quickly put it in his mouth and started eating it* (Participant 11).

Other mothers indicated that they encouraged their infants to eat food by themselves. They encouraged this behaviour in different ways, for example, by giving small pieces of food that the infant could hold easily.

> *He puts everything in his mouth; whatever is in front of him. So, one day I tried giving him some small pieces of fruits and that trick worked. He ate some fruits by himself; we all were so surprised and happy that, finally, our baby started eating by himself….for me, it was a significant achievement* (Participant 6).

5.7.1.1.2 Developing a meal plan and offering a variety of food

Some mothers encouraged infant self-feeding by planning mealtimes and offering a variety of foods to eat. They planned what food items should be given in the morning and evening, and also planned how to feed their infants. They believed that if they planned to offer a variety of easily handled foods, and at different intervals, their infants would develop a taste for a wide range of food and increase their interest in trying new foods.

> *I gave him yogurt, semolina, and milk by spoon-feeding, biscuits, and a banana to eat herself. I gave him a variety so that he did not get bored with food. I wanted his interest in food to increase day-by-day and even if he was left alone while eating,* [that] *he would eat by himself* (Participant 17).

> *I had set a routine for my baby. I spoon-fed him pulses and rice water in the morning, followed by semolina and milk in the afternoon and gave*

chapatti at night to eat by himself. This schedule was fixed, but in between these meals I gave him boiled vegetables and fruits (Participant 22).

From the above exemplars, it is clear that mothers were alert and concerned about infant feeding. They aimed to give a variety of foods in a planned manner to allow the infant to eat finger foods[30] by themselves. At the same time, mothers fed purees using a spoon to supplement their infant's food consumption and nutritional intake. They considered that, with increasing age, purees alone would not fulfil the infants' dietary requirements and, hence, exposure to a variety of foods was necessary to cover all the nutritional requirements for healthy growth.

I sometimes offer him soya beans with rice, as it contains a good amount of proteins, which is required for my baby's healthy growth (Participant 11).

5.7.1.1.3 Modelling parental eating styles

Placing food in the hand enabled infants to imitate part of their parents' eating style. Most mothers tried to encourage their infant to sit beside them while they were eating family meals as a constructive way to develop the habit of self-feeding by the age of nine to twelve months. To facilitate the consumption of 'family food' or food routinely eaten by older family members, from or around the age of ten to eleven months, the mothers offered similar food to the infants, but in a modified form. They believed that if they ate curry and chapatti, then their infants would also request family food and eat it in the same manner as them.

A few weeks ago, I started giving him small pieces of chapattis and curry but with less amount of spices in it (Participant 1).

I always make her sit next to me while having a meal because I want her to learn how to eat. She would demand a separate plate and all the servings we have in our plates. I gave her small pieces of chapatti and cooked pulses. She tries to copy me and eats by herself (Participant 22).

[30] Food eaten by using hands, not spoon.

> *…. then we would give her small pieces of chapatti with some curry in a separate plate… while we have our lunch or dinner…. we feel so relieved that we do not have to struggle much to feed her now* (Participant 27).

Some mothers described how they had observed their infants showing more interest in food when someone else was eating the same food in front of them. For these reasons, they offered not only traditional food, such as chapatti, curry and rice, but also snacks and noodles. One mother speculated that her infant daughter became attracted to the food they were eating because she smelt the food. She then moved slowly towards the person eating the food and tried to grab and eat it, imitating what she had observed. Participant 24 explains:

> *A few days back her cousins were eating noodles, and suddenly she screamed. I thought that she had tummy pain or something else, but then she crawled towards her cousin's plate and tried to hold a fork and eat noodles…we all were surprised after looking at her reaction* (Participant 24).

All mothers spoke of the achievements of their infants such as holding a spoon, grabbing food and eating food by themselves. They felt that these skills displayed their readiness to eat independently, so they offered them a small amount of family food every day to develop a habit of self-feeding and to encourage the infants to be involved in family mealtimes. In the exemplar below, the infant demonstrated her interest in self-feeding by holding the spoon by herself. In this way, mothers promoted the progressive transition from spoon-feeding purees to self-feeding family food. Observation by the infants also played an important role in learning about food, when they saw what and how family members were eating. They observed that each family member held a spoon while eating and, in the exemplar, below one infant tried to imitate them by holding a spoon. Overall, mothers were delighted that their infants were learning about self-feeding and understood that this advancement would foster independence.

After finishing our food, I took the plates to the kitchen and left the spoons and glasses on the table. My baby holds the leftover spoon so hard as if he wants to eat with the spoon (Participant 8).

5.8 Summary

There were three main findings of this study. The first key finding is that, even though they claimed to be following it, none of the mother participants were actually following baby-led weaning. The second key finding is that several contextual determinants alerted mothers about the signals given by their infants of the need to initiate weaning, and the manner in which weaning was implemented. The third key finding is that two themes were abstracted form the data. *Deciphering the signals* was an important step in the decision-making process for introducing spoon-feeding and, subsequently, fostering independent self-feeding. *Weaning as a reciprocal and cooperative process* highlighted that this was a transitional activity involving the infant and the mother. For the infants, it involved their cooperative and progressively active and autonomous participation in the process. At the same time, it necessitated the cooperative involvement of the mothers, shifting, initially, from a completely active approach in spoon-feeding to, progressively, a monitoring approach in self-feeding.

Chapter 6 Discussion and conclusion

6.1 Introduction

This is the final chapter of the thesis about the factors influencing, and the weaning process adopted by, mothers of infants in Ambala city, Haryana, India. The chapter begins with the discussion of the main findings of the study, followed by a review of the role of the contextual determinants in decision-making about weaning. Then, a discussion of the findings of the study, within the context of baby-led weaning, is undertaken. Next, the strengths and limitations of the study are discussed, followed by a discussion of the implications of the findings. Finally, a conclusion to the whole study is presented.

6.2 Discussion of the main findings of the study

As stated earlier in the thesis,[31] the study was planned initially to explore the experiences and decision making of mothers in respect to baby-led weaning. However, after interviewing several mothers it soon became evident that none was following this particular approach to weaning. After revising the aims of the study, the researcher interviewed mothers to explore their experiences and decisions about the weaning process. The researcher inquired about the commencement of weaning, how they commenced it and the factors involved in their decision-making process about weaning. After data analysis, two themes were abstracted from the data: *Deciphering the signals* and *Weaning as a reciprocal and cooperative process.* There were also several contextual determinants that influenced mothers' decisions to initiate weaning and the manner in which it was implemented.

6.2.1 Deciphering the signals

One of the two themes abstracted from the data was that mothers deciphered the signals displayed by their infants and responded to them accordingly. They first did this by commencing spoon-feeding and later by encouraging self-feeding.

[31] See Chapter 1, Section 1.3 for the justification for revising the aims of the study.

Mothers indicated that they observed some behavioural changes before initiating spoon-feeding, such as infants not being satisfied with breast milk or formula and crying a lot after feeding. Mothers perceived these changes as signals from the infants to demonstrate hunger for solid food from approximately six months of age. They discussed this behaviour with family, significant others, and, sometimes, paediatricians, and searched the Internet for information about weaning. This is considered a normal response for first-time mothers, and similar accounts are present in the literature. In a qualitative study Walsh et al. (2015) found that first-time parents sought information about feeding from significant others, and were influenced considerably by others, especially their peer group. Mothers in the present study considered their family members, particularly mothers-in-law, as key supports and discussed most decisions related to their infants with them.

Another important signal that mothers deciphered and which influenced their decisions was that their infants were developing an interest in the parents' food and food-related activity, such as cooking. This developing interest caught the mothers' attention and encouraged them to think about spoon-feeding solids. In response, they offered food such as carrot and cucumber in small pieces. They observed that their infants were eating with much interest in food. This judgement by mothers about the readiness of infants for solid food was also evident in a qualitative study by Begley et al. (2019), where mothers reported a strong desire by infants for solids, based on the latter's apparent desire to consume some of their parents' food.

In the present study, the infants' physical development, such as trying to grasp objects and sit upright unsupported, alerted mothers to commence weaning and, later, to encourage self-feeding. After describing the physical readiness of their infants for self-feeding, some mothers also shared experiences of their infants' attempts to take food from their plate to eat. This also alerted the mothers that their infants were ready to eat unaided.

6.2.2 Weaning as a reciprocal and cooperative process

The second theme abstracted from the data was about the methods and process of weaning. After interpreting signals from the infants, seeking suggestions from family members and significant others, gaining knowledge from previous experience and the Internet, and, for some, consulting paediatricians, the mothers commenced weaning. All mothers did this by using spoon-feeding and after a few months of this, they started offering food into the infant's hand. The reasons offered by mothers for their decision about self-feeding showed the influence of several contextual influences, such as family members and significant others and the Internet. This is similar to one of the key findings of the qualitative study by Chellaiyan et al. (2020), in which family members play a critical role in decision-making about when and how to introduce weaning. In addition, mothers indicated that they intended to develop independent feeding habits in the infants by the age of twelve months, by encouraging self-feeding[32]. Mothers realised that their infants wanted to participate actively in feeding rather than being fed passively with a spoon. The signals displayed and active participation by the infants were similar to the findings of a qualitative study by Bergelson and Swingley (2012), in which mothers indicated that the infants controlled their feeding decisions and actively participated in how and what they ate. The mothers interpreted these signals to justify their decisions about feeding, which included the timing of introducing solids or types of food given (Bergelson & Swingley, 2012).

In the current study, mothers assimilated their beliefs, advice and experiences about weaning, and commenced weaning, initially spoon-feeding then as a transitional and overlapping process between spoon- and self-feeding. Giving small pieces of food in the infants' hand was a beginning step in self-feeding, which included increasingly active participation of infants and progressively more passive participation by mothers. This suggests that weaning was a reciprocal and cooperative process between infants and mothers. The infants' active interest in grasping food and trying to eat it by themselves caught the mothers'

[32]See Chapter 5, Section 5.7.1 for elaboration.

attention so they offered small pieces of food to infants to encourage this behaviour. These signals contributed to the development of a positive attitude in the mothers towards self-feeding and, eventually, a positive intention to perform the behaviour (Ajzen, 1991) and encourage self-feeding. This finding was also evident in the literature, where mothers observed changes in their infants' behaviours before the commencement of weaning. A qualitative study by Begley et al. (2019) indicated that when mothers noticed a change in their infants' behaviour, such as displaying more interest in their surroundings and parents' food, this prompted a decision by them to commence weaning their infants using spoon- or self-feeding.

Mothers in the present study had mixed feelings when offering finger food to their infants because they did not want to risk choking and, at the same time, wanted to ensure their infants had a good nutritional intake. These concerns reinforced mothers' decision to adopt a transitional process for weaning their infants. They commenced with spoon-feeding, but after observing the infants' interest in handling the food by themselves, they used a combination of spoon- and self-feeding. The researcher also observed infants' active interest in handling food by themselves in observations undertaken during data collection. Similar interest in food was evident in a systematic review by Mura Paroche et al. (2017), in which infants were contented to hold small pieces of carrot in their hands and eat by themselves around the age of twelve months. Once the mothers' concerns were allayed, they withdrew spoon-feeding progressively, allowing the infants to rely on self-feeding only for their nutritional intake. This finding about weaning as a transitional process is considered a strength of the present study.

Mothers offered food to their infants to eat by themselves while they and other family members were eating. They believed that their infants would imitate family eating behaviour and learn to eat independently. This belief, about imitation of behaviour, was similar to the findings of a systematic review of studies on developmental learning processes by Mura Paroche et al. (2017), who found that imitation of others while eating, repeated exposure to food and allowing infants to touch and become familiar with food helped the development of positive eating

habits, such as self-feeding, in the first year of life. Mothers in the present study realised that allowing their infants to handle and feel the texture of the food enhanced the latter's interest in food. They encouraged infants to pick up and familiarise themselves with food and eat by themselves.

All the mothers in the present study had positive beliefs (Ajzen, 1991) about self-feeding because they wanted their infants to eat independently. They believed that if their infants learnt to feed themselves, then they would not have to be concerned about making special foods, such as purees, and could focus on their household chores. This is similar to the findings of a study by Cameron et al. (2012b), who found mothers believed that when infants fed themselves it was less stressful than spoon-feeding.

Overall, in the current study the mothers' positive beliefs, influences and behavioural control led to the performance of particular behaviours and decisions during weaning. An interplay between infants and mothers resulted in a transitional form of weaning, which was a reciprocal and cooperative process driven by the infants' interest in eating by themselves and the mothers' interest in encouraging this behaviour.

6.3 Role of the contextual determinants in decision-making about weaning

Several contextual determinants influenced mothers' decisions about weaning. The first was that family members and significant others played an essential role in the decision-making processes about weaning. It was important for mothers that family members validated these decisions. The second contextual determinant was that additional knowledge about weaning was acquired by researching the Internet and, on some occasions, consulting paediatricians. The third contextual determinant was the influence of the women's experiences observing other women weaning their infants. The fourth contextual determinant related to the infants themselves, including their physical growth and development to commence weaning and self-feeding, and concerns about choking and inadequate nutritional intake. These concerns of the mothers acted

as control beliefs (Ajzen, 1991) and influenced mothers' decisions not to rely solely on self-feeding.

Mothers-in-law, sisters-in-law and husbands were important influences in the mothers' life, especially during the weaning process, and could be considered as subjective norms (Ajzen, 1991). They influenced mothers' intentions and subsequent behaviours. Mothers sought approval from these individuals before introducing a new food to their infants, because they believed that members of this support group were experienced and had good knowledge about weaning. Before making any decision or performing any behaviour related to their infants, mothers thought about the acceptability of this behaviour to their family members. This approach is consistent with the participants' cultural context, because in India most major decisions regarding children are decided within the extended family (Bansal, Dixit, Shivram, Pandey, & Saroshe, 2014). Thus, most mothers in this study were happy to accept the guidance of family members about feeding their infant.

The experience mothers gained by observing their own mothers and grandmothers feeding their cousins and nephews/nieces also acted as influential factors in the present study and had some influence on mothers' behaviours. This finding is also evident in the literature. A quantitative study by Bartle and Harvey (2017) suggested that vicarious experience influenced first-time and experienced mothers, and led them to adopt the weaning practice which their maternal grandmothers and mothers followed.

Mothers in the present study were aware of changes in feeding styles over time. Most were using smart phones to search the Internet for up-to-date information on weaning and infant health. The use of these sources helped their decision-making about weaning and was also evident in the literature. A study by Newby, Brodribb, Ware, and Davies (2015) suggested that mothers used general Internet searches, read books, and sought advice from family and friends about infant feeding. However, seeking advice from family and exploring the Internet saved the mothers' time, and they were able to make quick decisions about weaning. Most mothers in the current study had a trusting relationship with their

paediatricians. Some said the primary reason for their visit to the paediatrician was to seek advice about their infants' eating behaviours as a part of weaning. This trusting relationship with health professionals was examined in a study by Plutzer and Keirse (2012), where it was shown that mothers highly recommended consulting health professionals for advice about infant feeding. All the factors discussed above led to the development of a positive attitude in the mothers in the current study towards weaning, and, eventually, to a strong intention to perform the behaviour (Ajzen, 1991).

During data analysis it also became clear that certain control beliefs (Ajzen, 1991) influenced mothers' intentions to perform certain behaviours. Control beliefs (Ajzen, 1991) in the present study refer to the mothers' concerns regarding self-feeding. After initiating weaning, they were concerned about infant choking and inadequate nutrition. They claimed that they did not offer finger foods before the age of eight months because they believed their infants were not ready developmentally to feed themselves before that age. The mothers began spoon-feeding their infants at approximately six months of age because, they claimed, their infants could barely sit without support. Even when they progressed to encouraging self-feeding, their concerns and experiences with this approach made the them adopt a combination of spoon- and self-feeding before shifting to self-feeding only.

Most mothers had experienced choking on at least one occasion with their infants. They blamed themselves for the choking episode(s), claiming, for example, that they had left their infant unsupervised sometimes when self-feeding, or had given a piece of food that was too large for the infant to eat safely. In contrast, Brown and Lee (2011) conducted a descriptive study to explore choking frequency among infants fed using traditional feeding and self-feeding approaches. Their findings suggested that there was no significant relationship between the approach used to feed the infants and choking. Some studies suggest that choking associated with self-feeding has always been a concern among parents, but it is unclear in the literature whether self-feeding is the main reason behind choking in infants (Brown, Jones, & Rowan, 2017; Cameron et al.,

2012b). For example, Cameron et al. (2012b) suggested that infants are fed small pieces of fruits or vegetables which could cause choking. The size of the food given to the infants has critical role in choking. Cameron et al. (2012b) indicated that round-shaped pieces of apple and slices of sausage were some of the most commonly reported foods that mothers attributed to choking. Therefore, it is necessary to explore further if small size of food is a major cause of choking.

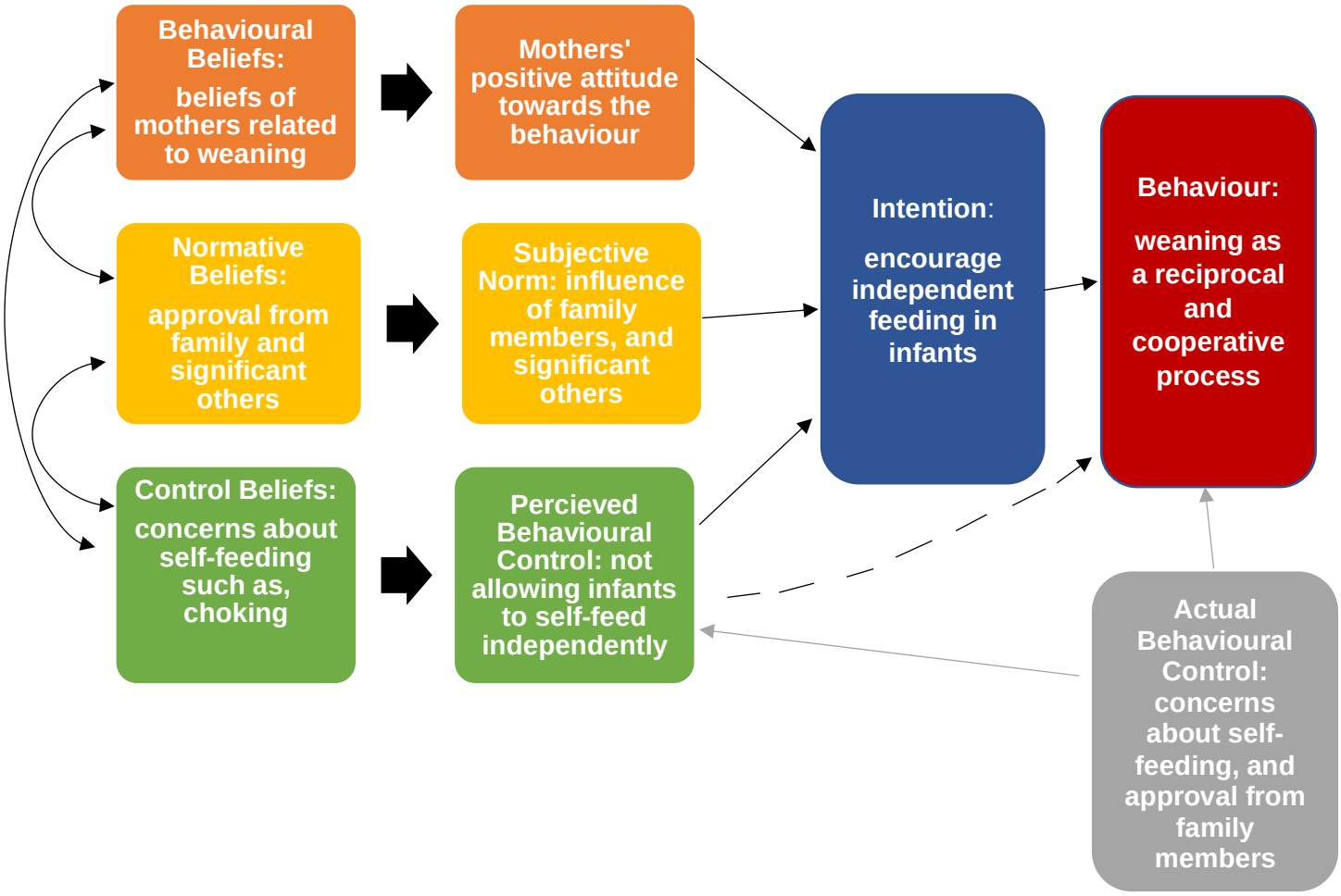
Infancy is a period of rapid growth and development; hence, an adequate nutritional intake is required by infants to achieve growth and developmental milestones (Nurliyana, Mohd Shariff, Mohd Taib, Gan, & Tan, 2016). Mothers in the present study believed that, in weaning their infants, a sufficient nutritional intake could only be assured when they were feeding their infants rather than depending solely on self-feeding. This was also evident in the literature. In a systematic review D'Auria et al. (2018) found that infants self-feeding themselves might be at risk of developing iron inadequacy because the thick consistency of iron-rich infant foods, such as commercial meat-based infant foods and iron-fortified infant cereals, made it difficult for them to grasp and self-feed. As a consequence, they tended to be offered foods that were easier to grasp, such as fruits and vegetables which were generally low in iron content (D'Auria et al., 2018). This is also cited in the literature, where some researchers (Cameron et al., 2012a; Cameron et al., 2013) suggested that most cooked vegetables and fruits in a graspable form given to infants for self-feeding are usually low in iron content. Low intake of micronutrients, such as zinc, iron and Vitamin $B_{12,}$ was also found in a cross-sectional study by Morison et al. (2016). They found that infants self-feeding consumed more saturated fats than iron, zinc and vitamins. Morison et al. (2016) highlighted that previous research into baby-led weaning by some researchers (Brown & Lee, 2011; Cameron et al., 2013) reported that infants following this approach ate similar food to their family members, and the adult diet had a greater amount of saturated fats than other micronutrients. Morison et al. (2016) also found, similarly, in their own study that the intake of saturated fat was higher in infants following baby-led weaning and attributed this to the greater intake of family foods than infant foods. Therefore, inadequate intake of iron and other micronutrients has been a concern among mothers of infants self-feeding,

but with some modifications to the food offered to the infants, such as offering nutrient-dense food, especially iron-rich, in a graspable form, could help overcome this concern.

6.4 Role of conceptual framework: Theory of Planned Behaviour

As the conceptual framework, TPB was a good fit for helping to understand and explain the findings of the present study, as illustrated in Figure 6.1 below. The theory helped the researcher to understand specifically how mothers' beliefs about weaning acted as positive beliefs, and approval from family members, friends and, sometimes, paediatricians played an important role in the decision-making process. In addition, mothers' concerns about issues, such as the risk of choking, and allowing the infants to eat independently, acted as control beliefs, while the mothers' intentions were to enhance the infants' independent eating skills.

Figure 6. 1 Relationship of Theory of Planned Behaviour (Saunders-Goldson & Edwards, 2004) with the findings of the present study



6.5 Discussion of the findings of the study within the context of baby-led weaning

It is appropriate now to consider the findings of the present study within the context of previous studies of baby-led weaning and to make recommendations about future studies of this method of weaning. The findings of this study suggested that mothers commenced weaning initially by feeding puree to infants with a spoon from around the age of six months along with breast milk or formula, because mothers believed that these infants were too young to feed themselves. In contrast to this finding, some proponents of baby-led weaning (Rapley, 2011; Rapley & Murkett, 2008) have recommended that when infants transition from breast milk or formula to solids, ideally they should be given small pieces of graspable food items to help them learn how to feed themselves instead of being spoon-fed. These proponents wished to encourage infants to learn to eat independently, whereas mothers in the present study believed that infants should be introduced progressively to self-feeding. Hence, the mothers started offering small pieces of fruit to their infants to self-feed from around the age of eight to nine months, but only after a period of spoon-feeding.

Another finding of the present study suggested that the mothers commenced weaning with home-made purees, such as rice and milk puree, and then progressed slowly to solid food, and aimed to include the same food family members were eating. This finding is similar to the findings of a cross-sectional study by Maiti et al. (2015), which reported that mothers preferred to use home-made purees to commence infant weaning. In contrast to the findings of both these studies, observational, cohort and cross-sectional studies by (Brown & Lee, 2011; Rowan & Harris, 2012; Wright, Cameron, Tsiaka, & Parkinson, 2011) respectively, on baby-led weaning, suggested that mothers offered infants small pieces of fruits and vegetables as their first solid food. Mothers in these studies were not overly concerned about choking while offering pieces of solid food to the infants because they considered choking to be part of the baby-led weaning approach. In a review of research into baby-led weaning, conducted by Cameron et al. (2012b), some mothers claimed that their infants choked mostly on raw apples, however, they were minimally concerned about this because their infants

dealt with it independently by coughing out the piece from their mouth (Cameron et al., 2012b). In contrast, mothers in the present study were highly concerned about choking with food items and, therefore, did not want to pursue self-feeding solely. Episodes of choking generated fear among the mothers, and they decided to allow self-feeding only in their presence.

Mothers in the present study believed that if they were feeding their infants, then they would ensure the infants were satiated and receiving sufficient nutrition to support their growth and development. They further indicated that when their infants fed themselves, they wasted food, ate less and could not be relied on to consume a balanced nutritional intake. In contrast, some researchers (Morison et al., 2016; Taylor et al., 2017) suggested that there were no significant differences in energy intake or food consumption by infants following spoon-feeding or baby-led approaches. In contrast, a case-control study by Townsend and Pitchford (2012), reported that a small number of infants (3/37) following the baby-led weaning approach were underweight, while 8/37 infants from the spoon-fed group were obese. However, most children in both groups had an average or healthy weight. In addition, the baby-led weaning group displayed greater preference for carbohydrates than the spoon-fed group (Townsend & Pitchford, 2012). The researchers concluded that baby-led weaning promotes healthy food preferences in early childhood in comparison with the spoon-fed group.

Other literature supports the findings of the present study. For example, an online cross-sectional survey of 655 mothers with young infants by (Brown & Lee, 2011) reported that infants fed with the baby-led weaning approach also consumed more milk feeds (formula/breast milk) than solids when compared with infants fed using the spoon-feeding approach. The authors claimed that the infants might not be satiated with the amount of food consumed using baby-led weaning and, as a consequence, required more supplementary milk feeds (Brown & Lee, 2011).

Some researchers claim that there is insufficient research to support and draw conclusions about the efficacy of baby-led weaning (Cameron et al., 2012b; Fewtrell et al., 2017). Furthermore, previous studies of baby-led weaning contain methodological shortcomings that could affect the results and interpretation of the

data. Studies by Arden and Abbott (2015); Moore, Milligan, and Goff (2014); Rowan and Harris (2012); Wright et al. (2011) relied on information recall by parents in emails or self-report questionnaires. In the study by (Brown & Lee, 2011), data were collected from mothers through online questionnaires only.

While no study is flawless methodologically (Frieden, 2017), there is a need for more rigorous studies to be conducted into baby-led weaning, such as observational studies combined with semi-structured, in-depth interviews. In addition, Cameron et al. (2012a) recommend that randomised controlled trials be conducted to evaluate the safety and effectiveness of baby-led weaning. In particular, more research is needed to examine mothers' concerns about the appropriate age for commencing baby-led weaning. According to the definition, baby-led weaning includes infant self-feeding with no adult assistance (Cameron et al., 2012b), but this approach raises several questions. If an infant is not ready developmentally, or is unable to sit independently without support, how can that infant feed him/herself safely? The present literature suggests that most mothers (Cameron et al., 2012a; D'Auria et al., 2018) initiated baby-led weaning, with the commencement of weaning being around the age of six months when infants started displaying signals of readiness for solids. Research is also needed to explore the benefits and risks of baby-led weaning. Baby-led weaning should be included in weaning guidelines of various health agencies only after rigorous and extensive research.

6.6 Strengths of the study

There were four major strengths of the study.

1. The researcher belonged to same cultural background as the participants, and this helped her to understand the influence of significant others in the decision-making process about infant weaning. In addition, the researcher, being the mother of a toddler, was able to have in-depth conversations with the participants, who were comfortable in discussing their lived experiences of weaning.

2. The researcher had an in-depth opportunity to explore mothers' experiences of weaning. Thirty mothers took part in the study, which is considered a good sample size in a qualitative study. The researcher also undertook observations in addition to qualitative interviews, which contributed to understanding during data collection and analysis. This close observation of infants being spoon-fed and infant self-feeding helped the researcher understand mothers' approach to infant weaning.
3. An important finding was that mothers in the present study did not follow baby-led weaning because of the cultural influence of family members and significant others to follow traditional feeding methods, concerns about the risk of choking and inadequate nutritional intake, if they allowed the infants to feed themselves. This cultural influence may also explain why the mothers did not seem to have a clear understanding of the publicised concept of baby-led weaning. To date, baby-led weaning has gained popularity among some mothers and researchers in developed countries, like the United Kingdom and New Zealand (Brown et al., 2017), but is still an emerging concept in India. While mothers in India were aware of the need to foster self-feeding, this was within the context of traditional methods of infant feeding.
4. Even though generalisability is not a prerequisite of qualitative research findings (Sandelowski, 1993), the themes can be verified (Green, 1999), and are applicable to mothers elsewhere in India and in countries where infant weaning takes place within the context of extended families.

6.7 Limitations of the study

There were two limitations to the study.

1. During most interviews, family members were nearby and, thus, the participants may have not been able to express their views freely. Most of the time, the participants emphasised how grateful they were for the support and assistance of their mothers-in-law. While this level of respect is quite common in Indian cultures, where most household decisions are

informed by mothers-in-law (Rew, Gangoli, & Gill, 2013), the presence of others is, nevertheless, a limitation.

2. Only upper middle-class and well-educated mothers were interviewed. These women had easy access to private clinics and the Internet. Mothers from lower socio-economic backgrounds may follow different weaning methods.

6.8 Implications of the study

There are five implications from the findings of the study.

1. Overcoming mothers' stress about weaning

Mothers reported that they experienced stress because of concerns related to infant self-feeding. Therefore, provision of information about self-feeding may be helpful in overcoming these concerns. During the recruitment process at the outpatients' clinic, the researcher observed mothers taking and reading pamphlets containing information about other topics such as immunisation. Similarly, mothers might be given access to evidence-based information in this form about all aspects of weaning. Hence, pamphlets and leaflets about weaning, made available in waiting rooms, may enhance mothers' knowledge about weaning and weaning methods.

2. Access to evidence-based information on the Internet

During data collection and analysis, it was evident that mothers had searched the Internet for information on weaning, such as how and when to wean, and what food items to give to infants at specific ages. As information about weaning in many Internet sources is not always evidence-based or medically endorsed (Keselman, Arnott Smith, Murcko, & Kaufman, 2019), provision of valid and reliable online information by private and government hospitals in India would help mothers to access up-to-date information about weaning.

3. Accessing support from experienced mothers

Mothers in the present study were influenced and guided by experienced mothers (especially mothers-in-law as well as significant others, and their own observation of other women weaning) in deciphering the signals and the steps to take in the weaning process. Therefore, a support meeting on weaning with experienced mothers may help many new mothers to obtain answers to their questions in a non-threatening and supportive environment. Mothers may also feel reassured after listening to the stories of other mothers about how they deal with problems related to weaning.

4. Obtaining support from health professionals about infant weaning

Face-to-face interaction of parents and families with a suitably qualified health professional, such as a maternal and child health nurse, may also help mothers to decide about weaning. Such interaction may help mothers to feel more comfortable in asking questions about, and increase their confidence in, weaning.

5. Future research into weaning

Studies need to be conducted into the experiences and decision-making of multigravida[33] mothers about weaning, because their experiences and decision making may differ from that of first-time mothers. In addition, studies are needed into the experiences of mothers from low socio-economic backgrounds into the contextual influences and weaning methods adopted, as these may be different from those of the mothers in the present study. As the most important contextual determinant in the current study was the influence of family members in decision-making about weaning, especially mothers-in-law, a study is needed to explore the decision-making of mothers in other countries where they live in extended families.

6.9 Conclusion

In the present study, weaning commenced initially with spoon-feeding, then as a transitional and overlapping process between spoon- and self-feeding. Weaning was characterised as a reciprocal and cooperative endeavour between the

[33] Women pregnant more than once.

mother and infant. It involved the cooperative and progressively active and autonomous participation of the infant. Simultaneously, it entailed the adoption of an active and controlling approach by the mother initially, shifting progressively to a less active and monitoring approach. Three beliefs primarily influenced mothers' experiences and decisions about the process of weaning: behavioural beliefs included perceptions and beliefs of the mothers about weaning; normative beliefs included approval of the mothers' behaviour by family members and significant others who played important roles in the mothers' lives; and control beliefs included concerns related to weaning which influenced mothers' behaviour. Overall, this study provides a valuable insight into how weaning commenced and progressed with a group of first-time mothers, and the factors influencing their decisions relating to weaning.

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Appendices

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Appendix A: Letter of permission for data collection

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Dr H S Sabharwal, Director
Sabharwal Children Hospital
Police line crossing
Ambala City 134003
Haryana
India

25.10.17

Dear Dr Sabharwal,

Thank you for your generous offer of assistance and support for Ms Deepika Sharma, who will be collecting data in Ambala City for her doctoral study 'Exploring mothers' decision making about, and experiences of, baby-led weaning'.

Deepika's fieldwork involves conducting in-depth interviews (using a grounded theory methodology) with mothers of infants aged 7-12 months. Her primary interest is in the women's decisions and experiences of weaning and introducing solid food to their infants. Please feel free to contact me at any time if you have any questions or concerns or if you would like any clarification about any aspect of Deepika's study.

While Deepika is in India, she will be supported by Victoria University generally and in particular by her supervisors: Professor Mary Carolan-Olah and Professor Terence McCann. This support will take the form of regular phone calls, emails and internet skype meetings, when possible. Deepika can request additional meetings/ advice at any stage.

Once again, thank you for your assistance with Deepika's study,

Kind regards,

Mary Carolan-Olah,

[redacted]

Mary Carolan-Olah PhD. MPH. BN. CM Professor of Midwifery,
Nursing and Midwifery,
College of Health and Biomedicine Victoria University. PO Box 14428, Melbourne 8001. Australia
Email: mary.carolan@vu.edu.au

Permission granted

[redacted]

Dr H S Sabharwal
M.B.B.S., M.D. M.A.M.S.
REGN. No. 20048. PMB
Sabharwal Children's Hospital
AMBALA CITY.

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Appendix B: Field work associate supervisor

Mr Yogesh Dhakad
Assistant Professor
Maharishi Markandeshwar University
Mullana
Ambala city
India
26/07/2017

Dear Associate Professor,

Thank you for your generous offer of assistance and support for Ms Deepika Sharma, who will be collecting data in Ambala City for her doctoral study 'Exploring mothers' decision making about, and experiences of, baby-led weaning'.

Deepika's fieldwork involves conducting in-depth interviews (using a grounded theory methodology) with mothers of infants aged 7-12 months. Her primary interest is in the women's decisions and experiences of weaning and introducing solid food to their infants. Please feel free to contact me at any time if you have any questions or concerns or if you would like any clarification about any aspect of Deepika's study.

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Once again, thank you for your assistance with Deepika's study,

Kind regards,

Mary Carolan-Olah,

Mary Carolan-Olah PhD, MPH, BN, CM
Professor of Midwifery,
Nursing and Midwifery,
College of Health and Biomedicine
Victoria University, PO Box 14428,
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Appendix C: Participant information and consent form

अनुसंधान में शामिल भागीदारों के लिए जानकारी

निमंत्रण

आपको एक शोध परियोजना में शामिल होने के लिए आमंत्रित किया जा रहा है जिसका शीर्षक है- "**शिशु के आत्म आहार में माताओं का निर्णय एवं अनुभव**।"

यह परियोजना छात्रा तथा शोधकर्ता दीपिका शर्मा द्वारा आयोजित की जा रही है, जो विक्टोरिया विश्वविद्यालय, मेलबर्न (ऑस्ट्रेलिया) में पी.एच.डी का अध्ययन कर रहीं है। यह शोध परियोजना स्वास्थ्य और बायोमेडिसिन कॉलेज, विक्टोरिया विश्वविद्यालय के प्रोफेसर मैरी कैरोलन-ओला और प्रोफेसर टेरेंस मैककैन द्वारा पर्यवेक्षित है।

प्रोजेक्ट स्पष्टीकरण

शिशु द्वारा आत्म-आहार अभिभावकों में एक नई प्रवृत्ति है, जिसमें बच्चा/बच्ची हाथों से चुनकर नरम व ठोस भोजन के छोटे-छोटे टुकड़े स्वयं खाते हैं। ऐसा माना जाता है कि आत्म आहार बच्चों की शारीरिक क्षमता के विकास में सहायता करता हैं, उदाहरणार्थ हाथों और मुंह का समन्वय, वस्तुओं को पकड़ने की क्षमता तथा कुशल मोटर गतिविधि। यह विकास संभवतः उन शिशुओं में अनुभव नहीं किया जा सकता जिन्हे माँ द्वारा भोजन खिलाया जाता है।

इस अध्ययन का मुख्य उद्देश्य है कि माँ के निर्णय का समन्वेषण करना तथा शिशु के आत्म आहार का अध्ययन करना। इस अध्ययन में तथ्य संग्रह के लिए दो तरीके उपयोग किए जाएंगे:

- अंबाला शहर, हरियाणा (भारत) में रहने वाले नवजात शिशुओं की माताओं से व्यक्तिगत साक्षात्कार और पर्यवेक्षण।
- लगभग 30 माताओं को व्यक्तिगत साक्षात्कार व ऑडियो रिकॉर्ड के लिए आमंत्रित किया जाएगा, और इनमें से लगभग 6 भाग लेने वाली माताएं पर्यवेक्षण में भाग लेंगी।

मुझे क्या करने के लिए कहा जाएगा ?

प्रक्रिया :

साक्षात्कार

आपके (शिशुओं की माँ) साथ आमने-सामने मुलाकात का आयोजन किया जाएगा।
साक्षात्कार के दौरान आपको शिशु को स्वयं आहार ग्रहण करने संबंधित अनुभवों के बारे में पूछा जाएगा तथा शिशु द्वारा आत्म आहार वाली प्रविधि को चुनने के कारण के बारे में पूछा जाएगा।

पर्यवेक्षण

कुछ माताओं का अपने बच्चे को आत्म आहार की प्रवृत्ति से खिलाते समय निरीक्षण किया जाएगा।

अनुसंधान में भाग लेने से मुझे क्या लाभ होगा ?

- आपके लिए कोई प्रत्यक्ष लाभ नहीं है।
- इस परियोजना में भाग लेने स्वरूप आपके लिए बहुत कम जोखिम है। परंतु आप भविष्य में अन्य माताओं को सहायता करने के बारे में अच्छा महसूस कर सकती हैं।
- साक्षात्कार के दौरान शिशु के खान पान अथवा अन्य अनुभवों को संबोधित करते समय यदि आप भावुक हो जाती हैं तो मैं एक नर्स के रूप में आपको मूलभूत भावनात्मक सहायता प्रदान करूँगी।
- आप इस शोध में स्वेच्छा से भाग लेंगे। भाग लेने की सहमति देने से पूर्व आपके अनुसंधान सम्बंधित सभी संदेहो को दूर किया जाएगा। इसके अलावा बिना कोई स्पष्टीकरण प्रदान किए आप किसी भी समय परियोजना छोड़ सकती हैं।

मेरे द्वारा दी जाने वाली जानकारी का उपयोग कैसे किया जाएगा ?

- शिशु द्वारा आत्म आहार पर एकत्रित की गई सभी सूचना माताओं के दृष्टिकोण से होगी।

- एक काल्पनिक नाम का उपयोग करके आपकी पहचान को गोपनीय रखा जाएगा। आपके साथ संबंधित कोई भी सूचना प्रधान पर्यवेक्षक, एसोसिएट पर्यवेक्षक और इसके अलावा किसी तीसरे व्यक्ति को नहीं दी जाएगी।

इस अध्ययन से प्राप्त सभी सूचना फाइलिंग कैबिनेट (हार्ड कॉपी) में सुरक्षित रखी जाएंगी तथा इलेक्ट्रॉनिक फाइलें शोधकर्ता के कंप्यूटर पर संग्रहित की जाएंगी जिसका पासवर्ड केवल प्रो० मैरी कैरोलन-ओलाह और प्रो० टेरेंस मैककैन, स्वास्थ्य और बायोमेडिसिन कॉलेज, विक्टोरिया विश्वविद्यालय, ऑस्ट्रेलिया, के पास है तथा इस शोध परियोजना से जुड़े हुए संपूर्ण सूचना को सुरक्षित रखने की जिम्मेदारी भी उनकी होगी।

इस परियोजना में भाग लेने के संभावित जोखिम क्या हैं?

अध्ययन के दौरान आपके तथा शिशु के लिए कोई जोखिम प्रतीत नहीं होता। अनुसंधान का एक बहुत ही मामूली जोखिम है कि साक्षात्कार के दौरान शिशु के खान पान अथवा अन्य अनुभवों को मेरे साथ सांझा करते समय यदि आप तनिक भावुक हो जाती हैं, तो मैं, एक नर्स के रूप में, आपको मूलभूत भावनात्मक समर्थन प्रदान करूँगी और यदि आप चाहें तो साक्षात्कार को रोक दिया जाएगा तथा बाद में पुनर्निर्धारित किया जाएगा।

यह परियोजना कैसे आयोजित की जाएगी?

यह परियोजना आपके व्यक्तिगत विचार-विमर्श, भावनाओं, फैसलों और शिशु के आत्म आहार के अनुभवों के पर्यवेक्षण के माध्यम से आयोजित की जाएगी।

अध्ययन कौन कर रहा है?

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पी.एच.डी. छात्र, विक्टोरिया विश्वविद्यालय

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पर्यवेक्षक: प्रोफेसर टेरेंस मैककैन, एसोसिएट अन्वेषक, टेलीफोन: +61 3 99 1 9 2325
प्रोफेसर मानसिक स्वास्थ्य नर्सिंग, स्वास्थ्य और बायोमेडिसिन कॉलेज, विक्टोरिया विश्वविद्यालय

इस प्रोजेक्ट में आपकी भागीदारी से जुड़े किसी भी प्रश्न ऊपर दिए गए मुख्य अन्वेषक को निर्देशित किया जा सकता है।
यदि आपके पास अनुसंधान से संबंधित या आपके प्रति व्यवहार के बारे में कोई प्रश्न या शिकायत है तो आप नीचे लिखे पते पर संपर्क कर सकते या researchethics@vu.edu.au पर ईमेल कर सकते हैं, अथवा +61 3 9919 4781 या +61 3 9919 4461 पर टेलीफोन द्वारा संपर्क कर सकते हैं।
एथिक्स सेक्रेटरी, विक्टोरिया विश्वविद्यालय
मानव अनुसंधान नीतिशास्त्र समिति, रिसर्च कार्यालय, विक्टोरिया विश्वविद्यालय,
पीओ बॉक्स 14428, मेलबर्न, वीआईसी, 8001

शिशु के आत्म आहार में माताओं का निर्णय एवं अनुभव

साक्षात्कार मार्गदर्शिका

साक्षात्कार (ऑडियो रिकॉर्डिंग प्रारंभ करें)
मैं आपको अपने बारे में बताने के लिए कहकर प्रारंभ करूगीं।

1. क्या आप मुझे अपने माँ होने के अनुभव के बारे में बता सकती हैं?
2. क्या आप मुझे बता सकती हैं कि आपने शिशु को आपके द्वारा खिलाने के विपरीत शिशु को स्वयं आहार ग्रहण करने देने का निर्णय क्यों लिया?
3. क्या आप मुझे बता सकते हैं कि शिशु के आत्म आहार से संबंधित आपका अनुभव क्या हैं?
4. शिशु को स्वयं आहार ग्रहण करने देने कि यह विधि आपको कैसे मिली?

   संकेत: आप ने शिशु को स्वयं खाने देना कैसे शुरू किया?

   क्या आपको लगता है कि यह विधि आपके और शिशु के लिए अच्छी है?

   इस विधि के उपयोग में क्या आपको अपने और शिशु से संबंधित कोई कमी मिली है?

5. क्या आप किसी माता-पिता को बच्चे को स्वयं आहार ग्रहण करने देने कि इस विधि के उपयोग करने की सलाह देंगे?
6. शिशु के आत्म आहार से जुड़ा हुआ क्या कुछ और है जो आप मेरे साथ सांझा करना चाहती हैं?

समापन

- पूछें कि क्या उनके पास कोई प्रश्न या कोई टिप्पणी है ?
- यदि आवश्यक हो, तो सूचना पत्र पर डेब्रिफिंग के लिए संपर्क विवरणों की समीक्षा करें ।
- पुष्टि करें की किसी संदेह को स्पष्ट करने की परिस्थिति में क्या उन्हें दुबारा संपर्क किया जा कर सकता है?
- बच्चों के जूतों के उपहार के साथ उन्हें धन्यवाद करें ।

(ऑडियो रिकॉर्डिंग रोकें)

अनुसंधान में शामिल भागीदारों के लिए सहमति पत्र

भागीदारों के लिए जानकारी:

हम आपको इस अध्ययन में शामिल होने के लिए आमंत्रित करना चाहते हैं:

- शिशु के आत्म आहार में माताओं का निर्णय एवं अनुभव

प्रतिभागी द्वारा प्रमाणित

मैं, _____

पुष्टि करती हूँ कि मैं 18 साल से अधिक उम्र की हूँऔर मैं स्वेच्छा इस अध्ययन में भाग लेने की सहमति दे रही हूं जो विक्टोरिया विश्वविद्यालय में प्रोफेसर मैरी कैरोलन-ओलाह द्वारा आयोजित की जा रही है और जिसका शीर्षक: शिशु के आत्म आहार में माताओं का निर्णय एवं अनुभव है।

मैं प्रमाणित करती हूं कि मुझे इस अनुसंधान में किए जाने वाली प्रक्रियाओं से संबंधित सभी जोखिम और सुरक्षा उपायों के साथ अध्ययन के उद्देश्यों को दीपिका शर्मा द्वारा पूरी तरह से समझाया गया है और मैं नीचे उल्लिखित प्रक्रियाओं में सहभागिता के लिए स्वतंत्र रूप से सहमति देती हूं।

- आमने सामने बैठ कर ऑडियो रिकॉर्ड किया गया साक्षात्कार
- मुझे मेरे शिशु के साथ आत्म आहार करते हुए देखा जाएगा

मैं प्रमाणित करती हूं कि मुझे सभी प्रश्नों का उत्तर देने का अवसर मिला है और मैं समझती हूं कि मैं इस अध्ययन से किसी भी समय अपना सहयोग वापस ले सकती हूं और इससे मुझे किसी भी तरह से नुकसान नहीं पहुंचेगा।

मुझे सूचित किया गया है कि जो सूचना मैं प्रदान करूँगी वह गोपनीय रखी जाएंगी।

हस्ताक्षर:

दिनांक :

इस परियोजना में आपकी भागीदारी से संबंधित कोई भी प्रश्न शोधकर्ता को निर्देशित किया जा सकता है।

प्रोफेसर मैरी कैरोलन-ओला, मुख्य अन्वेषक
टेलीफोन: +61 3 9919 2585
यदि आपके पास अनुसंधान से संबंधित या आपके प्रति व्यवहार के बारे में कोई प्रश्न या शिकायत है तो आप नीचे लिखे पते से संपर्क कर सकते या researchethics@vu.edu.au पर ईमेल कर सकते हैं, अथवा +61 3 9919 4781 या +61 3 9919 4461 पर टेलीफोन द्वारा संपर्क कर सकते हैं।

एथिक्स सेक्रेटरी, विक्टोरिया विश्वविद्यालय
मानव अनुसंधान नीतिशास्त्र समिति, रिसर्च कार्यालय, विक्टोरिया विश्वविद्यालय,
पीओ बॉक्स 14428, मेलबर्न, वीआईसी, 8001

Appendix D: Ethical clearance

From: quest.noreply@vu.edu.au <quest.noreply@vu.edu.au>
Sent: Tuesday, July 11, 2017 10:48:19 AM
To: Mary.Carolan@vu.edu.au <Mary.Carolan@vu.edu.au>
Cc: Deepika Sharma <deepika.sharma@live.vu.edu.au
>; Terence.McCann@vu.edu.au<Terence.McCann@vu.edu.au>
Subject: Quest Ethics Notification - Application Process Finalised - Application Approved

Dear PROF MARY CAROLAN-OLAH,

Your ethics application has been formally reviewed and finalised.

» Application ID: HRE17-070
» Chief Investigator: PROF MARY CAROLAN-OLAH
» Other Investigators: MRS Deepika Sharma, MR YOGESH DHAKAD, PROF TERENCE MCCANN
» Application Title: Mothers' decision making about, and experiences of, baby-led weaning.
» Form Version: 13-07

The application has been accepted and deemed to meet the requirements of the National Health and Medical Research Council (NHMRC) 'National Statement on Ethical Conduct in Human Research (2007)' by the Victoria University Human Research Ethics Committee. Approval has been granted for two (2) years from the approval date; 11/07/2017.

Continued approval of this research project by the Victoria University Human Research Ethics Committee (VUHREC) is conditional upon the provision of a report within 12 months of the above approval date or upon the completion of the project (if earlier). A report proforma may be downloaded from the Office for Research website at: http://research.vu.edu.au/hrec.php.

Please note that the Human Research Ethics Committee must be informed of the following: any changes to the approved research protocol, project timelines, any serious events or adverse and/or unforeseen events that may affect continued ethical acceptability of the project. In these unlikely events, researchers must immediately cease all data collection until the Committee has approved the changes. Researchers are also reminded of the need to notify the approving HREC of changes to personnel in research projects via a request for a minor amendment. It should also be noted that it is the Chief Investigators' responsibility to ensure the research project is conducted in line with the recommendations outlined in the National Health and Medical Research Council (NHMRC) 'National Statement on Ethical Conduct in Human Research (2007).'

On behalf of the Committee, I wish you all the best for the conduct of the project.

Secretary, Human Research Ethics Committee
Phone: 9919 4781 or 9919 4461
Email: researchethics@vu.edu.au

Appendix E: *Aide memoire* for observation

Date: ……

Time: ……...

Name of the participant: (pseudonyms) ……

Setting: …….

Interaction: ……..

Informal conversation: (notes)

…….

…….

……...

Environment:

……

Mother's expression while feeding:

……....

Infants' expression while eating:

…….

(To observe: verbal, actions, expressions, attention, responses of both)

Any special occasion or thing noticed:

…….

.

NOTES:

……

…

Appendix F: *Aide memoire* for interviews

Interview:

Audio recorder turned on

1. I would like to start by asking you to tell me a bit about yourself like: Your age, age of your infant, your education, occupation, and type of family?
2. Can you tell me about your experience of being a mother?
    - How do you feel: excited, busy?
3. How do you feed your infant?
4. Can you tell me why you decided to follow weaning?
    - When did you started following weaning?
    - Did someone ask you to commence weaning or it was completely your decision?
5. How did you find this method as a way of feeding your infant?
    - Do you find this method of feeding infants more comfortable or convenient than other methods of feeding?
6. What kind of food do you offer to your baby?
7. Do you think that weaning allows your infant to consume some different diet?
    - For example: different types of food items?
8. Can you tell me about your experiences of weaning?
    - Are you happy, satisfied with your infants' diet and allowing him/her to eat independently?

9. Do you find any change in your infants' behaviour after following weaning?
    - Any change related to his/her daily activities, growth or development?
10. Do you think weaning allows your infant to have a nutritious diet?
    - Does weaning cover all your infant's nutritional requirements?
11. Do you think that your infant has developed favourites for some food items following weaning?
12. Do you think weaning will allow your infant to consume family foods very early?
13. Did you find it worked well for you and your baby? How?
14. What advice would you give to someone contemplating weaning?
15. Is there anything else you would like to share with me regarding your infants' weaning?