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## **Content Analysis: Media Representation of Infant-Feeding Practices of Adolescent Mothers**

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To the Graduate Council:

I am submitting herewith a thesis written by Mary Elizabeth Pate-Bennett entitled "Content Analysis: Media Representation of Infant-Feeding Practices of Adolescent Mothers." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Nutrition.

Katherine F. Kavanagh, Major Professor

We have read this thesis and recommend its acceptance:

Marsha L. Spence, Melissa B. Hansen-Petrik

Accepted for the Council:

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Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

**Content Analysis: Media Representation of Infant-Feeding Practices of Adolescent  
Mothers**

A Thesis Presented for the  
Master of Science  
Degree  
The University of Tennessee, Knoxville

Mary Elizabeth Pate-Bennett

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## Abstract

**Background:** The American Academy of Pediatrics considers breastfeeding to be the optimal form of infant nutrition<sup>1,2</sup> and Healthy People 2020 objectives target increasing breastfeeding rates<sup>3</sup>. Though national rates have improved, those among several subgroups have not.

Adolescent mothers initiate breastfeeding only 58% of the time, which is lower than the national objective of 81.9%<sup>3</sup>. Research focusing on other health behaviors indicates that media may play an important role in developing these behaviors in adolescents. However, knowledge of media-influences on infant-feeding decisions and attitudes among adolescents is insufficient.

**Objective:** The objective of this study was to assess the presentation of infant-feeding mode in a reality television program through the constructs of the Theory of Planned Behavior.

**Methods:** This was a qualitative study, using content analysis methodology to evaluate infant-feeding content of a reality television program that follows adolescents from late pregnancy through the first months of parenthood. The first two seasons of the program were coded for infant-feeding content, using constructs of the Theory of Planned Behavior (TPB). Content was then divided into percent contribution from each of the TPB domains. Short vignettes were created describing how the relative weight of the three TPB domains may have influenced the infant feeding decision and been portrayed to the audience.

**Results:** Eleven episodes of the program were transcribed and coded to determine the presentation of infant-feeding content. Only 4% of episode content was related to infant-feeding concepts with the majority showing bottle-feeding (73%), and the remainder showing infant-feeding equipment (21%), and breastfeeding (6%). Verbal infant-feeding content, coded by TPB domain, showed that Control Beliefs were the most frequently expressed domain.

**Conclusions:** Content analysis of a reality television program appears to portray infant-feeding as a minor component in the lives of these adolescent mothers. Further, framing infant-feeding

conversations in terms of TPB domains appears to indicate a great deal of desire for control by adolescent mothers. In the context of existing infant-feeding literature, these findings reveal important gaps in accuracy of infant-feeding behaviors such as the time-commitment, duration of breastfeeding, and overall issues related to breastfeeding behaviors.

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## Chapter I: Background

The American Academy of Pediatrics (AAP) recommends exclusive breastfeeding for infants for the first six months of life, at which point complementary foods should be added to the diet<sup>2</sup>. Breastfeeding should then continue to at least a year, and weaning should occur only when desired by mother and child<sup>1,2</sup>. Breastfeeding offers many benefits to both infants and mothers, including reduced risk of multiple acute and chronic diseases for infants, increased bonding, stress reduction, weight loss, and prevention of some cancers for breastfeeding women<sup>1</sup>. Additionally, breast milk contains unique biochemical components thought to be beneficial for infant growth and development<sup>2</sup>. The act of breastfeeding is not only important for individual health, but for the overall health of the population<sup>7</sup>, which is reflected in significant health-related economic benefits<sup>8</sup>. For example, a cost-analysis performed in 2010 found that if 90% of mothers of newborns exclusively breastfed for six months postpartum, the nation would save 13.6 billion dollars<sup>8</sup>. These savings would come from the prevention of chronic and acute health issues, as well as the cost-savings from infant formula not purchased<sup>8</sup>. Because of these multiple benefits, the AAP, the World Health Organization (WHO), and the Centers for Disease Control and Prevention (CDC) support and promote breastfeeding initiation within the first hour of life, exclusive breastfeeding to 6 months of age (no other food or drink, including water), and continuing to breastfeed for up to 12 months and beyond<sup>1,9,10</sup>. Additionally, the United States (U.S.) Federal Government includes breastfeeding objectives in its *Healthy People 2020* document, which outlines the pathway to achievement of national health goals<sup>3</sup>.

Table 1. Baseline data for breastfeeding rates compared to Healthy People 2020 objectives, 2009<sup>3</sup>.

| Objective: Increase the proportion of infants who are breastfed: | Baseline data from 2009 (%) | Healthy People 2020 Target (%) |
|--|-----------------------------|--------------------------------|
| Ever Breastfed   | 74.0                        | 81.9                           |
| Breastfed at 6 months  | 43.5                        | 60.6                           |
| Breastfed at 12 months   | 22.7                        | 34.1                           |
| Exclusively Breastfed at 3 months                                | 33.6                        | 46.2                           |
| Exclusively Breastfed at 6 months                                | 14.1                        | 25.5                           |

Despite these benefits, not all mothers choose to or are able to breastfeed<sup>11</sup> and, though increasing steadily, U.S. breastfeeding rates do not yet meet the national objectives set by Healthy People 2020<sup>3,12</sup> (**Table 1**). Many factors contribute to the choice of infant feeding method such as education, family attitudes, healthcare provider support and personal beliefs<sup>13</sup>. Race, ethnicity, and income level also play a role in the infant feeding decision<sup>14</sup>, as does one's region of residence<sup>12</sup>. Moreover, young maternal age, combined with any of these factors, amplifies the likelihood that breastfeeding will not be initiated or continued<sup>14</sup>. Therefore, the infant-feeding experiences of adolescent mothers, and the environment contributing to these experiences, are of particular interest when developing effective intervention strategies.

### *Infant Feeding Among Adolescents*

In 2008, 10% of live births in the U.S were to women between the ages of 15 and 19 years, a sum of over 400,000<sup>15</sup>. Though the infant-feeding decision can be challenging for any

mother at any time, adolescent mothers may be faced with, or perceive, greater barriers to breastfeeding than those faced or perceived by older mothers<sup>16-18</sup>. In fact, the lower rates of breastfeeding seen among adolescent mothers, as compared to mothers over 30 years of age (58.4% vs. 77.6%, confidence interval 95%, respectively)<sup>19</sup>, may be somewhat explained by the greater impact of these barriers upon younger women<sup>20</sup>. Research exploring specific barriers such as maternal race/ethnicity<sup>14</sup>, income<sup>11</sup>, education<sup>19</sup>, and perceived social pressure<sup>21,22</sup>, consistently illustrates the additive effect of age on breastfeeding behaviors.

### *Race/Ethnicity*

When maternal age is explored within race/ethnicity categories, disparities in suboptimal breastfeeding rates are clear (**Table 2**)<sup>14</sup>. Though the differences in breastfeeding outcomes by age are nearly identical to the differences seen by race/ethnicity, indicating that young motherhood is challenging regardless of racial or ethnic background, it may also indicate the influence of a socio-cultural attitude surrounding the infant feeding decision. For example, regardless of age, Non-Hispanic, Black mothers are significantly less likely ( $p < 0.05$ ) to initiate breastfeeding, compared to Non-Hispanic, White and Mexican American mothers<sup>14</sup>. However, among those under 29 years of age, being Mexican American was associated with the highest rates of breastfeeding initiation, possibly indicating the presence of a different social norm in this population. This phenomenon is important to consider when developing strategies to increase breastfeeding initiation among adolescent mothers.

Table 2. Percentage of infants who were ever breastfed, by maternal age and race-ethnicity: United States, 1999-2006 (adapted from NCHS Data Brief, April 2008)<sup>14</sup>

| Age                | Race/Ethnicity                        |                                       |                                     |                          |
|--------------------|---------------------------------------|---------------------------------------|-------------------------------------|--------------------------|
|                    | Non-Hispanic White (% Ever Breastfed) | Non-Hispanic Black (% Ever Breastfed) | Mexican American (% Ever Breastfed) | Total (% Ever Breastfed) |
| Under 20 years old | 40                                    | 33                                    | 66                                  | 43                       |
| 20-29 years old    | 65                                    | 44                                    | 75                                  | 65                       |
| 30 years and older | 77                                    | 56                                    | 76                                  | 75                       |

### *Income*

In addition to the associations with race and ethnicity, maternal income has been linked with breastfeeding outcomes<sup>11</sup>. For example, mothers reporting lower incomes (<100% of Poverty Income Ratio (PIR)) are less likely to initiate breastfeeding and, if initiated, less likely to continue to six months postpartum, compared to those reporting higher incomes ( $\geq 350\%$  of PIR) (66% vs. 82% and 15% vs. 26%, respectively)<sup>11</sup>. Adolescent mothers are often reliant on others for financial support, are less likely to be married, and are more likely to reside in violent, unstable communities with unpredictable employment opportunities, as compared to older mothers, which likely influences the infant-feeding decision<sup>23,24</sup>. Although breastfeeding “costs” the mother an average of 500 additional calories per day and may be perceived as delaying her return to work<sup>25</sup>, infant formula is an immediate and significant drain on financial resources<sup>26</sup>. This is true even for families with stable incomes<sup>27</sup>. However, secondary to the Special

Supplemental Nutrition Program for Women, Infants and Children (WIC), which provides a significant amount of infant formula to eligible mothers, this immediate cost is largely ameliorated<sup>28</sup>. Therefore, regardless of the long-term cost-savings associated with breastfeeding, cost may not be an immediate concern to qualifying low-income mothers of any age.

### *Education*

Maternal education has also been linked to breastfeeding initiation, duration, and exclusivity, with those having less education also reporting lower rates in all three categories<sup>19</sup>. Adolescent mothers, by definition, are likely to still be in middle- or high-school when discovering their pregnancies, and are likely to be faced with difficult choices regarding continuing their education<sup>24</sup>. However, many programs target keeping adolescent mothers in school, while also supporting these mothers to breastfeed<sup>29-31</sup>. Programs offered through WIC<sup>29</sup>, high school childcare programs<sup>30</sup>, and classes focusing on particularly relevant issues, such as use of a breast pump<sup>31</sup>, are designed to assist adolescent mothers to breastfeed upon return to school. Though these programs have been shown to be effective<sup>30,32,33</sup>, widespread implementation is a challenge for multiple reasons, including limited funding and lack of community support<sup>34</sup>. Despite the presence of these programs, the allure of “free” infant formula is likely difficult for a young mother to resist, especially while attempting to manage the responsibilities of both school and parenting<sup>30,35,36</sup>. In addition to these economic and educational factors, adolescent mothers may be more vulnerable to social pressure and expectations than older mothers, also decreasing the likelihood of breastfeeding initiation<sup>16,17</sup>.

### *Formula-feeding as the Social Norm*

Infant formula, once considered for use in only the most dire of situations<sup>37</sup>, experienced a dramatic rise in the 1950s and 1960s, as marketing experts took advantage of the influx of women in the workforce<sup>37,38</sup>. The desire for convenience and freedom among young women allowed it to be well-placed to assist the feminist movement in severing the indelible link between being a woman and being a mother<sup>37,38</sup>. Created in a 1950's board room, these associations have endured for several decades and resulted in multiple generations of families having exposure to the idea that infant formula is the more normal, acceptable, infant-feeding mode<sup>37</sup>. In light of this marketing history, though breastfeeding rates have improved in many populations, it is likely not surprising to find that convenience is often cited as a critical factor in choosing use of infant formula over breastfeeding<sup>22,39</sup>. As is found with research among older mothers, allowing others to assist with infant-feeding responsibilities is a primary reason adolescent mothers report early weaning or offering only infant-formula from birth<sup>21,22,39</sup>. In addition, recent research has indicated that many mothers simply prefer the comfort of bottle-feeding, reporting this as a reason for never initiating breastfeeding<sup>40</sup>. This overall concept of infant-formula providing more freedom, comfort, and convenience to mothers has been well-established in the literature<sup>40-42</sup>.

At the same time that infant-formula was increasing in popularity, breastfeeding began to be associated with subversive behavior<sup>16,17</sup>. Media portrayals of breastfeeding, though not always negative, have a tendency to be inflammatory, presumably in an attempt to increase viewership<sup>43-45</sup>. For example, a television medical drama, originally airing in 1998, followed the story line of an infant dying from malnutrition<sup>46</sup>. The mother, revealed to be exclusively breastfeeding, was ultimately blamed for the death of her child<sup>46</sup>. Because the episode and story line failed to



address how healthcare providers may have assisted the mother and infant to breastfeed successfully, despite indications that she reached out, the audience likely received the message that the breastfeeding mother had made poor decisions and was at fault<sup>43,46</sup>. Similarly, in an episode of a popular crimes series program airing in 2000<sup>44</sup>, an adolescent mother is accused in the starving death of her infant. Though the death was ultimately portrayed as unintentional, resulting from inadequate nourishment from breast-milk,<sup>47</sup> it is important to note that the episode failed to portray any investigation into the role of healthcare providers in supporting the breastfeeding dyad<sup>47</sup>. This one-dimensional portrayal of breastfeeding failure caused outcry amongst breastfeeding advocates who felt it was inflammatory, irresponsible, and possibly caused more harm than good<sup>46</sup>. However, the actual impact the portrayal had on the audience members is unknown.

Although not all media portrayals of breastfeeding are negative, the majority of media depiction favors infant formula<sup>48</sup>. For example, results of a recent analysis of British media (i.e., newspaper articles, television programs, and advertisements) indicated that breastfeeding was rarely portrayed in any of these media. However, when present, breastfeeding was associated with sore nipples, leaking breasts, and the “out of control body”<sup>49</sup>. Additionally, the authors note that breastfeeding was often associated with images of middle class women, (i.e., pictured purchasing organic foods and nice clothes), while formula feeding was associated with lower class women<sup>49</sup>.

Moreover, breastfeeding has been equated to performing a sexual act<sup>50</sup>. In fact, the current cultural norm in the U.S. is to regard the breast primarily in a sexual light<sup>50</sup> and many mothers, regardless of age, report pressure from significant others not to breastfeed<sup>16,17</sup>. Generally, there is a tendency to view breastfeeding as being “dirty”<sup>16</sup> and/or “inappropriate”<sup>17</sup>. Additionally, many

mothers report being embarrassed about breastfeeding in public places, fearing the overexposure of body parts<sup>18</sup>. This is supported by recent research revealing that many Americans believe breastfeeding in a public place<sup>16</sup>, or even presented in the context of television programming<sup>51</sup>, is inappropriate and unacceptable. These pressures are likely to be particularly challenging to younger mothers, potentially explaining some of the risk for suboptimal breastfeeding rates<sup>16,17</sup>. Media portrayal of infant feeding is of particular interest, secondary to its potential influence on the breastfeeding knowledge, attitude, and intent of the target audience<sup>48</sup>. In an adolescent population this is of even greater interest due to the demonstrated susceptibility of this population to the influence of media<sup>4-6</sup>. Literature exploring media influence on health behaviors of adolescents may inform future work investigating the specific impact exposure to breastfeeding may have on intent in this population.

### *Influence of Media on Adolescents*

In 2010, adolescents spent an average of eight hours a day engaging with electronic media sources, with roughly four and a half of those being specific to television<sup>52</sup>. Television programming has been shown to influence adolescent health behaviors such as violence<sup>6</sup>, smoking<sup>4</sup>, and risky sexual behavior<sup>5</sup>. For example, a longitudinal study, conducted among adolescents, found that those who played excessively violent video games in the beginning of the school year were more likely to demonstrate physically aggressive behavior at the year's end<sup>6</sup>. In terms of smoking, Dalton and colleagues found a positive relationship between the amount of smoking viewed in movies and smoking initiation among adolescents.<sup>4</sup> Non-smoking adolescents, aged 10-14 years, living with non-smoking parents, were recruited to answer a survey of previously viewed films. Seventy-three percent of the adolescents were successfully

re-contacted 13-26 months later and questioned about smoking initiation. Controlling for known potential confounders, subjects in the highest quartile of exposure to smoking in films were 2.7 times more likely to initiate smoking than those in the lowest quartile. Additionally, 52% of smoking initiation could be associated with viewing the films<sup>4</sup>. Similarly, in a longitudinal study, Chandra and colleagues found that adolescents who viewed television programs with high levels (90th percentile) of sexual content were “twice as likely to experience a pregnancy in the subsequent 3 years, compared with those with lower levels of exposure”<sup>5</sup>. These studies suggest a relationship between exposure to behaviors in the media and an increase in these behaviors in populations of adolescents. Understanding what may influence behavior, and specifically adolescent behavior, is critical to designing effective breastfeeding interventions in this population.

Changing the social norm of infant-feeding will require education beyond that which targets the pregnant woman and her immediate family<sup>53</sup>. Knowledge and attitudes about infant-feeding, often formed before a pregnancy occurs, and formed by the future father as well as the future mother<sup>7</sup>, could be important concepts to target when attempting to increase and strengthen intent to breastfeed a future child<sup>7</sup>. Understanding how intent to breastfeed is developed is a critical first step in developing effective interventions, which may ultimately function to shift the social norm towards breastfeeding.

### *Developing Intent: The Theory of Planned Behavior*

One theory, used extensively in health behavior research, is that of the Theory of Planned Behavior (TPB)<sup>54,55</sup>. In the late 1980’s, Icek Ajzen and colleagues formed the TPB, which describes different influences on intention to perform a particular behavior<sup>56</sup>. The TPB consists

of three domains that function together to create intent and, ultimately, to impact actual behavior. The domains are outlined, with examples focusing on breastfeeding, in **Table 3**.

Table 3: Domains of the Theory of Planned Behavior<sup>57</sup>: Breastfeeding Example

| <b>Domain</b>   | <b>Definition and Example</b>   |
|---|---|
| <i>Attitude towards the behavior</i><br>(Behavioral Belief) | The extent of an individual’s opinion of the behavior<br><br>Example: The degree to which breastfeeding is thought to be healthy and benefit an infant.   |
| <i>Subjective norm</i><br>(Normative Belief)                | The individual’s perception of how acceptable the behavior is, both amongst close friends and family and in the broader context of society<br><br>Example: Were they breastfed as an infant? Do they have friends or family who currently breastfeed or have breastfed an infant? |
| <i>Perceived behavioral control</i><br>(Control Belief)     | Characterizes the perceived ease of the behavior and how supported an individual believes they will be in their performance of the behavior<br><br>Example: Will breastfeeding be inconvenient in one’s lifestyle? Will they have the freedom they need if they breastfeed?       |

Factors within these domains combine to create the *intention* of participating in the behavior (e.g. intent to breastfeed when the infant is born) and ultimately may impact the eventual behavior (e.g. breastfeeding)<sup>58</sup>. The TPB provides a theoretical framework for research into a great deal of health behaviors and health risks<sup>54</sup> and has been used extensively to explore the infant-feeding decision<sup>53,59</sup>.

### *The Theory of Planned Behavior: Infant-feeding Intent and Behavior*

Much of the work using the TPB to frame decisions around infant-feeding has focused on pregnant women and new mothers<sup>53,56</sup>. These studies report strong influences of grandmothers, infant fathers, family members, and healthcare providers, both on infant-feeding intent and on actual behavior<sup>53,57,60</sup>. Specific to family influence, though fathers appear to be important in making the infant-feeding decision<sup>61,62</sup> and can be a critical support for continuation of breastfeeding<sup>61</sup>, the grandmother may often have the greatest impact on infant-feeding behaviors<sup>7</sup>. Additionally, healthcare providers such as nurses and midwives influence the infant-feeding decision with opinions concerning a mother's ability to breastfeed and what they consider best for the infant<sup>57</sup>.

More recently, research has begun to explore other potentially important influences on intent<sup>57,60</sup>. These influences include exposure to breastfeeding prior to pregnancy and an individual's own awareness of how she/he was fed as an infant<sup>60,63</sup>. For example, the probability that a mother will breastfeed is greatly increased if she was breastfed herself or has been/is surrounded by others who support breastfeeding<sup>60</sup>. In 2006, Wagner and colleagues interviewed 87 postpartum women and found that approximately 30% of the sample reported making the infant feeding decision prior to their child's conception<sup>64</sup>. Additionally, Losch and colleagues, as the result of a literature review, estimated that between 50-75% of women decided their infant feeding method before pregnancy<sup>65</sup>. However, even when the intention to breastfeed is present, the behavior is not guaranteed to occur. For example, a study performed by Heinig and colleagues found that although many women had intended to breastfeed prior to birth, modifiable variables such as prematurity, beliefs of an inadequate milk supply, and pressure from others influenced the women to change to formula-feeding before they had originally planned<sup>57</sup>.

Research conducted among adolescents, both pregnant and not pregnant, revealed similar influences on infant-feeding attitudes and intent to breastfeed<sup>21,53</sup>. These influences are thought to function through the three domains of the TPB, to ultimately influence intent. Exposure to positive examples of breastfeeding, whether in person or through various forms of media, may be an important route to fostering positive attitudes, influencing social norms toward breastfeeding, and increasing intent, especially among those not yet considering parenthood. Exploring portrayal of infant feeding, in a popular reality series, using the framework of the TPB, may provide important insight into the types of messages and exposures occurring in this population.

### *Reality Television Programming*

A reality television series documents the individual experiences of pregnant adolescents from the third trimester of pregnancy to approximately 2 months postpartum. In this program, the relationships between the adolescent mother and the father of her child, and between the adolescent and her parents, family, and friends, are presented as entertainment<sup>66</sup>. Research has shown that ~ 60% of U.S. adolescents have viewed at least one episode of this program, and over a third of these adolescents reported discussing the program with a parent<sup>67</sup>. Analyzing instances of infant feeding, and other factors associated with infant feeding in the literature (i.e. returning to work/school<sup>19</sup>, financial constraints<sup>11</sup>, race/ethnicity<sup>14</sup>, and contextual social norms<sup>21,22</sup>), in specific episodes may increase the understanding of how this popular television program portrays infant-feeding (if at all). Framing these instances (both verbal and visual) within the context of the TPB, could assist in explaining how this program may influence viewers, and provide important areas of future exploration. Therefore, this project will attempt to answer the following research questions:

### **Research Questions**

- 1) When infant feeding is portrayed in a popular reality television program, are both breastfeeding and formula-feeding presented?
- 2) How does the portrayal of infant feeding fit into the domains of the Theory of Planned Behavior?

## Chapter II: Manuscript

### *Background*

The American Academy of Pediatrics (AAP), the World Health Organization (WHO), and the Centers for Disease Control and Prevention (CDC) all recommend exclusive breastfeeding for the first six months of an infant's life, which provides unique benefits for both infant and mother<sup>1-4</sup>. These benefits include reduced risk of multiple, acute, and chronic diseases for infants, and increased bonding, stress reduction, weight loss, and prevention of some cancers for breastfeeding women<sup>2</sup>. In addition to individual health, breastfeeding can provide significant health-related economic benefits to society as a whole<sup>5,6</sup>. For example, a cost-analysis performed in 2010 found that if 90% of mothers of newborns exclusively breastfed for six months postpartum the nation would save 13.6 billion dollars<sup>6</sup>. Despite these benefits, U.S. breastfeeding rates do not yet meet the national objectives set by Healthy People 2020<sup>7,8</sup>.

In 2008, 10% of live births in the U.S. were to women between the ages of 15 and 19 years, a sum of over 400,000<sup>9</sup>. Infant feeding choice is influenced by many different factors including race/ethnicity<sup>10</sup>, income<sup>11</sup>, education<sup>12</sup>, and maternal age<sup>13</sup>. Young mothers, specifically the younger adolescent population, have the lowest breastfeeding rate regardless of race/ethnicity<sup>10</sup>. Because of this low percentage, the factors contributing to infant-feeding choice among adolescents is of great interest.

U.S. breastfeeding rates have varied a great deal over the past several decades<sup>14</sup>, dropping dramatically in the 1950s and 1960s as more women entered the workforce and formula company marketing efforts increased<sup>15, 16</sup>. Though breastfeeding has been slowly increasing since the 1970s, with initiation rates recently meeting the Healthy People 2010 target<sup>17</sup>, infant-formula is currently considered by many population groups to be the normal and expected way to



feed an infant<sup>15</sup>. Media portrayals of breastfeeding, though not always negative, have a tendency to be inflammatory, likely in an attempt to increase viewership<sup>18-20</sup>. When breastfeeding is portrayed in a negative light, or is simply absent, it is likely to subconsciously support infant formula as the social norm. Development of social norms, explored extensively in health behavior research, is often explained within the constructs of the Theory of Planned Behavior (TPB)<sup>21,22</sup>. The TBP describes different influences on intention to perform a particular behavior<sup>23</sup>, and consists of three domains: attitude towards the behavior (Behavioral belief), subjective norm (Normative belief) and perceived control (Control belief). An example of a Behavioral belief would be the degree to which breastfeeding is thought to be healthy and benefit an infant. A Normative belief would include the person's opinion on how acceptable breastfeeding is in public, or how the individual believes breastfeeding is viewed by society. Finally a Control belief would include the person's thoughts on how convenient breastfeeding would be in their lifestyle and how much freedom they would have with the behavior. These domains function together to create intent (e.g. intent to breastfeed when the infant is born) and ultimately may impact the eventual behavior (e.g. breastfeeding)<sup>24</sup>. Therefore, media portrayal of infant-feeding is of particular interest among those considering strategies to increase breastfeeding rates, secondary to its potential influence on the breastfeeding knowledge, attitude, and intent of the target audience<sup>25</sup>. In an adolescent population this is of even greater interest due to the susceptibility of this population to the influence of media<sup>26-28</sup>.

In 2010, adolescents spent an average of eight hours a day engaging with electronic media sources, with roughly four and a half of those being specific to television<sup>29</sup>. It has been shown that messages derived from media sources, specifically television programs, influence the viewer to participate in specific behaviors that are portrayed<sup>26-28</sup>. These studies suggest a

relationship between exposure to behaviors in the media and an increase in these behaviors in populations of adolescents.

The TPB has been used extensively to explore the infant feeding decision<sup>30,31</sup>. Analyzing instances of infant feeding in episodes of a reality television program documenting the individual experience of pregnant adolescents may increase the understanding of how this reality television program portrays infant-feeding (if at all). Therefore, the objective of this study was to assess the presentation of infant-feeding concepts in a reality television program, using the constructs of the TPB.

### *Methods*

This was a qualitative study, using content analysis methodology to evaluate infant-feeding content of a reality television program that follows adolescents from late pregnancy through the first few months of parenthood. The study was conducted from May 2012 through June 2013, and the protocol was approved by the Institutional Review Board at The University of Tennessee.

The first two seasons of the program were coded for infant-feeding content, using constructs of the Theory of Planned Behavior (TPB). These constructs include Normative, Behavioral, and Control beliefs. Both verbal and visual infant-feeding content was coded, as both could have an influence on the audience and thus contribute to development of the “norm” of infant-feeding. The unit of measure, for verbal content, was a phrase. Each transcript was reviewed for phrases including infant-feeding concepts (e.g. how/why choice made, benefits or challenges of different modes, changes to planned mode, etc...) expressed by the adolescent mother as well as those present in her life (e.g., maternal grandmother, adolescent father, friend

of adolescent mother, etc...). Verbal codes were separated into those attributed to the adolescent mother and those attributed to these other individuals. Visual content was coded by scene and included both “active” (infant being fed) and “passive” (e.g. cans of formula, bottles, breast pumps, etc...shown in background/foreground). All visual content was coded as Normative.

The primary investigator trained the co-coder in definitions of the domains of the TPB, including representative examples of statements focused on infant-feeding concepts within each domain (**Appendix C**). A transcript from an unrelated project was used for training and coded independently by the two co-coders. The co-coders reviewed the transcript, and once inter-coder agreement was at 80%, coding of the project transcripts began. Co-coders independently coded three transcripts prior to meeting to calculate inter-coder agreement and to discuss potential new codes. No additional transcripts were coded until 80% inter-coder agreement was reached on these initial transcripts. This process of coding three transcripts, meeting to discuss use of existing codes and potential new codes, and moving to the next set of three transcripts was repeated until all transcripts had been coded and agreement was at least 80%. When there was disagreement between the two coders, the faculty advisor served to break the tie. Prior to each coding meeting both coders independently calculated their individual and overall code numbers. Individual inter-coder calculations were recorded at the beginning and were recalculated at the end of every coding session. The calculation used to determine inter-coder agreement is as follows: Inter-coder agreement =  $A/n$  (where  $A$  equals total agreements between the two coders and  $n$  equals total number of units coded by the coders)<sup>32</sup>.

Coded phrases were imported into QDA Miner software in order to calculate code frequency for each domain. From this, the percentage of verbal and visual codes of infant feeding was also calculated (**Appendix B-Table 4**). Duration (in minutes and seconds) of each

episode, and each instance of verbal or visual infant-feeding content within each episode, was quantified. Duration of infant-feeding content was then divided by overall episode duration, allowing for a per-episode calculation of how much time was spent showing/discussing infant-feeding content. Microsoft Excel software was used to create 3 pie charts for each episode: 1) percent of episode that focused on infant-feeding topics, 2) percent of visual infant-feeding content showing breastfeeding, formula-feeding, or feeding equipment, and 3) verbal content, divided into percent contribution from each of the TPB domains, for both the adolescent mother and for others in her life (**Appendix B**). Each set of individual pie charts also described the percent of infant-feeding content that was verbal vs. visual. Ultimately, these frequencies and durations were summed, and a final set of the 3 pie charts representing the total of all episodes was created (**Figure 1**).

Using the individual set of pie charts, short vignettes were created, describing how the relative weight of the three TPB domains, expressed by both the adolescent mother and others, may have influenced the infant feeding decision and how this may have been portrayed to the audience. Vignettes were reviewed by the research team and used to draft a comprehensive narrative of how infant-feeding content was framed and delivered to viewers of the program.

### *Results*

Two seasons of the reality television program were selected for analysis of infant-feeding content and coding of this content using the domains of the TPB. However, of the fourteen episodes available, only 11 were transcribed, coded, and used to develop the final narrative. Two episodes were unable to be viewed, secondary to technological issues, and one episode was dropped from analysis after consultation with the IRB, determined the content to be specific enough as to be identifiable. Inter-coder calculations ranged from 22-100%, and all end

calculations were 100% (**Appendix G**). The low percentage of matching found at the beginning of some coding sessions was expected and is reflective of the coding process itself, as phrases could be complex and difficult to assign to a single domain. In several cases, the conclusion had to be made by the research team to code the phrases into only one domain, as to keep the content mutually exclusive<sup>33</sup>.

### *Infant-feeding content of episodes*

Overall, only 4% of episode content was related to infant-feeding concepts, either visual or verbal (**Figure 1.A**). Of this 4%, the majority of infant-feeding content appeared in visual form (71%), and less than a third of this content was verbally conveyed (29%), meaning that infant-feeding-related conversations occurred less than 1% of the time (**Figure 1.B**). Nearly three-fourths of visual codes (73%) were of bottle-feeding, with the remainder showing infant-feeding equipment (21%), and breastfeeding (6%). All visual codes were considered to be Normative due to the potential perception of these behaviors as the “norm” by the audience. Verbal infant-feeding content, coded by TPB domain, is shown in **Figure 1.C**. Slightly greater than half of verbal codes (62%) represented statements made by adolescent mothers, with Control beliefs being the most frequently expressed TPB domain, whereas Behavioral Beliefs appeared to be rarely attached to statements made by adolescent mothers. Codes attributed to statements made by those in the adolescent mothers’ lives appeared relatively equally distributed across the three TPB domains. Each of the TPB domains, specific to adolescent mothers and to individuals in their lives, is described in more detail below.

### *Adolescent Mothers: Control Beliefs*

Among the three constructs, Control beliefs were the most frequently coded. Examples of such codes include the desire to share infant-feeding responsibility with others and the adolescents' inability to have control over their bodies. Exclusive breastfeeding was expressed as a constraint to sharing the infant-feeding responsibility, which led to the decision to formula-feed. This was considered a perceived Control belief in that the adolescent expressed her desire to not be the sole provider for infant feeding and believed formula feeding would allow her this independence and control. Breastfeeding was portrayed as a stress to the adolescent's body, with leaky breasts, painful latching attempts and uncertainty in the amount of breast milk that was being produced. These were considered modifiable factors, occasionally leading to early weaning, expressed as (lack of) control, and therefore coded as Control beliefs. Formula feeding was the primary infant-feeding mode chosen because of the perceived control it offered the adolescent mother.

### *Adolescent Mothers: Normative Beliefs*

Common Normative beliefs expressed by adolescent mothers included the belief that breastfeeding would be exhausting and overwhelming to attempt, despite expressing an understanding of associated health benefits. The adolescent mothers also expressed that breastfeeding would be cheaper than the use of infant formula. Several adolescent mothers questioned how other women were able to successfully breastfeed while they, themselves, were having trouble with the behavior. This was considered a Normative belief, in that the adolescent was forming her own opinion about breastfeeding and determining what was socially acceptable and physically possible. One adolescent mother expressed her desire for support by her

significant other in order to successfully breastfeed. This was considered a Normative belief in that the adolescent believed she could not be successful without support. In the end, many adolescent mothers chose to formula feed because of the acceptability among family and friends, despite the added costs and support they were given.

#### *Adolescent Mothers: Behavioral Beliefs*

Finally, Behavioral beliefs of adolescent mothers were the least frequently coded, though these were most often focused on opinions concerning breastfeeding. Behavioral belief codes included statements that breastfeeding would create physical changes to the breasts and that it would be painful. These were considered Behavioral beliefs in that the adolescent was stating her opinion and beliefs of breastfeeding. Another voiced belief was that breastfeeding was not a behavior that should be performed in front of friends. This was considered a Behavioral belief in that those around the adolescent expressed their opinion that breastfeeding should be kept private and is not something that is socially acceptable. Many times the adolescent mother chose to formula feed because of her believed ease and acceptability of the behavior.

#### *Others: Control Beliefs*

Common control statements from those around the adolescent included reminding the adolescent to participate in making bottles of formula and feeding the infant as well as many statements made by the infant's father refusing to help make bottles or to feed the infant. Formula feeding was expressed as time-consuming and burdensome by those around the adolescent (mostly the MGM and infant's father). These were considered modifiable factors expressed as (lack of) control by others, in that those around the adolescent were vocal about not

wanting to be in control of infant feeding responsibilities, and therefore coded as Control beliefs by others. Additionally, hospital staff members made comments about infants needing to be tube-fed due to uncontrollable circumstances. This was also considered a Control belief because it was a modifiable factor expressed as the control it took away from the adolescent and her original infant-feeding plan.

#### *Others: Normative Beliefs*

Normative statements made by friends of the adolescent and the infant's father covered the topics of breastfeeding and formula feeding. Both friends of the adolescent and the infant's father questioned the adolescent on her intent to breastfeed and the reasons why she would chose that method of infant-feeding. Similarly, the adolescent was asked about bottle-feeding and her intent to choose formula feeding over breastfeeding. These were all considered Normative beliefs in that those around the adolescent were questioning her to determine the adolescent's infant-feeding mode and what was normal. Friends of the adolescent and the infant's father also asked the adolescent about the amount the infant would eat (from either bottle or breast). These were considered Normative beliefs in that those around the adolescent were determining the amount that was considered healthy at a given age.

#### *Others: Behavioral Beliefs*

Finally, common Behavioral belief statements from those around the adolescent included physicians, friends, and the infant's father making statements about breastfeeding and their beliefs of what would happen if the adolescent breastfed. Those around the adolescent were vocal about their beliefs of the adolescent breastfeeding with both pro- and anti-breastfeeding stances. Statements were made about the benefits of breastfeeding and how pregnancy, not



breastfeeding, would be responsible for physical changes of concern. Counter arguments were made by those who believed that breastfeeding would damage a woman's breasts, and they would forever be changed. These were considered Behavioral beliefs in that they were opinions expressed by others on the outcome of breastfeeding.

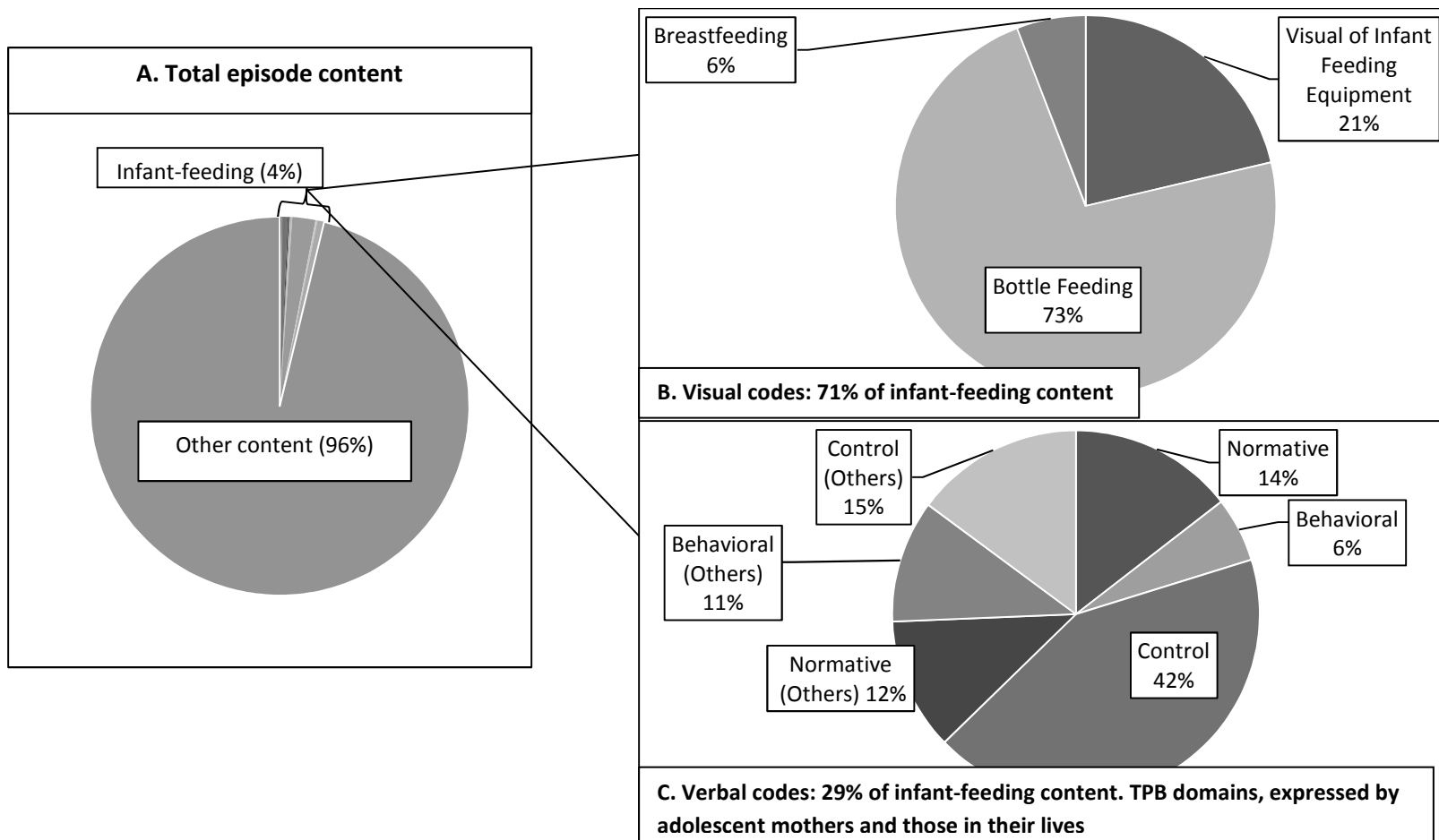


Figure 1. Representation of all episodes from the television program. 1.A. Total episode content-Portrays the percentage of time covering infant-feeding content and other content. 1.B. Visual Codes- Presents the infant-feeding visual codes from all episodes. 1.C. Verbal Codes- Portrays the infant-feeding verbal codes from all episodes, expressed by the adolescent mother and those in their lives, using the TPB domains.

## *Discussion*

Content-analysis of a reality television program, following adolescents from pregnancy through the first several months of motherhood, appears to portray infant-feeding as a minor component in the lives of these adolescent mothers. Further, framing infant-feeding conversations in terms of TPB domains appears to indicate a great deal of desire for control by adolescent mothers. Exploring these findings in the context of existing infant-feeding literature may reveal important characteristics in the portrayal of infant-feeding by this reality television program.

### *Time Commitment*

Comparing the time-contribution of the television program to that of research estimating the actual time required to feed infants reveals some potentially important gaps. For example, although infants feed at various frequencies throughout the day, the U.S. Department of Health and Human Services (USDHHS), Office of Women's Health provides general information about expected infant-feeding frequency and duration (8-12 times per day, for roughly 20-40 minutes), specific to early infancy<sup>34</sup>. Therefore, estimating the time-commitment if an infant feeds for the longest duration- 12 times a day, for 40 minutes- indicates that this would require ~33% of a 24 hour period to be dedicated to infant-feeding. Estimating the time-commitment if an infant feeds for the smallest frequency- 8 times a day, for 20 minutes- indicates that this would require an ~11% (2.5 hours) daily time-commitment. The television program that was analyzed visually portrayed infant feeding occurring for an average of 6.4% (1.5 hours) of the day. Compared to the real life expectations published by the USDHHS, even the most liberally calculated estimated proportion of time dedicated to portrayal of infant-feeding may convey to the audience that infant feeding is not a time-consuming behavior for an adolescent mother. This is an important

finding in that literature indicates that the perceived time demands of breastfeeding are an important reason why many choose bottle-feeding<sup>35,36</sup>. Therefore, should exposure to this content result in the belief among future parents that infant-feeding takes so little time, breastfeeding may be perceived as an even greater time commitment.

#### *Duration of Breastfeeding*

At the national level ~58% of adolescents initiate breastfeeding, which is greater than the percentage portrayed by this reality program (46%). In fact, only one adolescent is portrayed as never introducing infant formula. Although the production of the program did not allow for accurate calculation of the breastfeeding duration, it is clear that almost all of the adolescents (92%) do not breastfeed for very long (less than one week). Compared to the literature on breastfeeding duration among adolescents (22% at 6 months, 9% at 12 months)<sup>12</sup>, the percentages portrayed in the show were also much lower than the national average. This may convey to the audience that formula-feeding is the norm for adolescent mothers, potentially impacting the future breastfeeding intent of adolescent audience members.

#### *Portrayal of Breastfeeding*

In instances where breastfeeding was portrayed, it was seen as painful and difficult. Even before the infant was born, the adolescents discussed their belief in the inconvenience of breastfeeding. Supported by a study completed by Giles and colleagues, it is clear that many adolescents are not fully aware of the convenience that breastfeeding offers and believe it creates many physical problems<sup>36</sup>. The audience has reinforcing statements that breastfeeding will be painful, difficult and inconvenient, when that may not be the case. Therefore, what is being portrayed by the television program and what has been presented in the literature do not coincide.

### *Formula-feeding for Control*

The TPB domain portrayed consistently throughout the television program is that of perceived behavioral control. The adolescent mothers had many conversations that portrayed their desire to have control when it came to infant-feeding, which is similar to the findings by Wambach which portrays perceived control as an important factor in the infant-feeding decision<sup>37</sup>. These findings are important because perceived behavioral control is normally the least predictive domain, with previous literature stating Behavioral and Normative beliefs as being the most common indicators of choice of infant-feeding mode<sup>38,39</sup>. These statements and beliefs rarely translated into the adolescent choosing to breastfeed, but rather choosing to bottle-feed (almost exclusively with formula), because of the increased perception of control. Audience members who desire control, and possibly forming their own intent to breast or formula feed prior to becoming pregnant or even thinking about becoming a parent, may be given the sense that breastfeeding reduces control. Therefore, these messages may be interpreted as bottle-feeding (specifically formula-feeding) being the acceptable choice of infant feeding, if one wishes to maintain control in one's life<sup>35</sup>.

### *Adolescence as a Factor in Infant-Feeding Choice*

Adolescence is a turbulent and unpredictable period of life<sup>40</sup>. At this age, the maturation of the adolescent brain allows for intelligent decision-making, and the body is sexually functional and is physically able to work; yet most adolescents are still confined to living with their parents and abiding by parental rules<sup>40,41</sup>. In this television program most of the adolescents are establishing psychological and emotional independence<sup>41</sup>, while also becoming parents themselves. The addition of this new responsibility makes it evident why control may be a very important element at this time in their lives.

### *Limitations*

Due to the nature of the subject material, it was impossible to explore what the adolescent mothers were actually experiencing in their lives, as only certain content was chosen to be included as part of the created story line. However, this was not the objective of this project. Though results presented here give some idea of the messages being conveyed to audience members, no data regarding audience interpretation were collected and therefore, no assumptions can be made about message interpretation. Future work should explore audience reactions to and interpretations of the infant-feeding content of this reality television program.

### **Conclusion**

Results of this content-analysis indicate that infant-feeding messages potentially being conveyed to audience members may include an under-representation of the amount of time needed for infant-feeding, an expectation that formula-feeding is the norm, and that formula-feeding allows for increased control in the lives of adolescent mothers. For audience members viewing this program who are not yet parents or currently pregnant, actual interpretation of these messages by this population may provide critical areas of intervention designed to increase breastfeeding intent among future parents.

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## Appendices

## **Appendix A: Expanded Research Methods**

### **Innovation**

This is the first known study of infant feeding behavior found on a documentary style television program focused on adolescent mothers. Although studies have been conducted about breastfeeding in fictional television programs<sup>1</sup>, this is this first attempt at a “reality-type” television program.

### **Study Design**

Fourteen episodes of the reality television program were transcribed by trained undergraduate students. The students used the transcription software program, InqScribe<sup>2</sup>, which allows the viewer to simultaneously watch a video clip and transcribe the words to promote ease of transcription<sup>2</sup>. The students were trained to capture verbatim speech of each individual using identifying codes (**Figure 2**).

T: when Subject (main character) is speaking  
 TBF: When Subject's boyfriend (baby's father) is speaking  
 TM: when Subject's Mother is speaking  
 TD: when Subject's Father (Dad) is speaking  
 TB: when Subject's Brother is speaking  
 TS: when Subject's Sister is speaking  
 TSM: when Subject's step mother  
 TSD: when Subject's step father  
 TA: when Subject's Aunt is speaking  
 TC: when Subject's Cousin is speaking  
 TG: when Subject's Grandmother is speaking  
 TGF: when Subject's Grandfather is speaking  
 TF: when Subject's friend is speaking  
 TP: when Subject's Physician (Doctor) is speaking  
 TMW: when Subject's Midwife is speaking  
 TN: when Subject's Nurse is speaking  
 BFM: when Boyfriend's (baby's father's) Mother is speaking  
 BFD: when Boyfriend's (baby's father's) Father is speaking  
 BFS: when Boyfriend's (baby's father's) Sister is speaking  
 BFB: when Boyfriend's (baby's father's) Brother is speaking  
 BFSM: when Boyfriend's (baby's father's) step Mother is speaking  
 BFSF: when Boyfriend's (baby's father's) Step Father is speaking  
 \*\*If there is more than one person that belongs to the title, number the identifiers. (Example, for Teen's friends... in the order in which they appear, label as TF1, TF2, TF3, etc)  
 Double enter between speakers (space in between T and TBF)  
 Transcribe everything that you hear including background noises. Use parentheses to describe noise; example – (baby cries) or (laughter)

Figure 2. Transcribing scheme for notating speaker

Additionally, the transcribers were to capture any non-verbal behaviors related to infant-feeding (e.g. can of formula on the counter, someone washing infant bottles, empty infant bottle on the table), and denote whether this was performed in an active (feeding the infant) or passive (formula can sitting on the counter) way.

### Training of the Co-Coder

The co-coder was trained by the primary researcher in use of all study forms. To illustrate the concepts of the TPB, the co-coder was provided with the first three pages of a previously

conducted focus group transcription. The co-coder was given a brief descriptions of the three domains (see standard definitions in **Table 3**) and directed to code phrases, using the appropriate color for the focus group subject (Behavioral= blue, Normative= yellow, Control = pink) and those the focus group subject references (other Behavioral= purple, other Normative= green, other Control= orange) beliefs. No other explicit guidance was given at the time, allowing the co-coder to develop an individual understanding of the domains. The co-coder was encouraged to use the memoing box to note why decisions were made (**Appendix D**). After the focus group coding was complete, the co-coder and primary researcher met and compared the coding of the transcript and discussed any differences. Memoing played a critical role in this discussion and assisted in defining current and future codes. This mock exercise allowed for an understanding of the TPB, outside of the actual application to the study transcripts. Once this exercise was complete, the co-coder was given representative examples of statements focused on infant-feeding concepts within each domain (**Appendix C**) and coding of program transcripts began.

#### Coding for Concepts of the Theory of Planned Behavior (**Appendix E**)

The three domains of the TPB (attitude towards the behavior, subjective norm, and perceived behavioral control) provided an *a priori* structure to coding the transcripts using “phrase” as the unit of analysis. Three situations were coded: 1) statements made about infant feeding by the adolescent mother, 2) statements made about infant feeding by those around the adolescent mother, and 3) background activities or actions specific to infant feeding (i.e., visual cues such as the making of a bottle of infant formula, the adolescent mother shown breastfeeding, a crying infant immediately being fed, etc). For example, a statement made by the adolescent mother such as, “They say it makes your baby healthier...” was coded as a Normative

belief (yellow), as it expresses something the adolescent mother knows others believe. A statement made by the adolescent mother such as, “I just don’t think I can do that” [referring to breastfeeding], was coded as a Control belief (pink). A statement made by the mother of the adolescent mother such as, “You won’t be able to go back to school if you breastfeed”, was coded as an “other’s Behavioral belief” (purple). An example of a background visual cue, from parenthetical text completed during transcription was (*As baby continues to cry, T goes to the bathroom to mix formula*) coded as Normative, illustrating the context of infant-feeding in the adolescent mother’s environment.

As each phrase was coded for a domain, the logic leading to assignment of the code was memoed (**Appendix D**). During the subsequent coding meeting, phrases that were coded differently by the co-coders were evaluated using the memos, and a decision was made as to which code should be used. Once a decision was made, the code was added to the codebook, along with a description of when it should be applied.

#### Demographics/Background (**Appendix F**)

In order to code for other factors that could contribute to the adolescent mother’s choice of infant-feeding method, quantitative aspects of her life were also coded. These included region of residence in the country, gender of infant and maternal race and ethnicity, if noted. Additionally, variables such as adolescent work and school status, presence of infant father, living situation and income level were coded qualitatively. This document was populated by both co-coders independently, and consensus achieved as part of the coding meetings. Therefore, only one set of responses was ultimately entered into excel for generation of demographic description

of the sample. This information was used to provide background/contextual framework for each transcript and/or to describe the overall sample.

### Inter-coder Reliability (Appendix G)

As a practice, the primary researcher and the major professor independently coded a page of the transcript that included infant feeding. The initial number of codes that were marked for each belief was recorded and the differences discussed. Sometimes a sentence would contain two different thoughts but the same belief. In this case, a slash mark was made between the two phrases and the belief was counted twice. At the end of the discussion a new number was recorded for the number of codes that were marked and transferred to Appendix G to determine inter-coder reliability. The calculation used to determine inter-coder agreement is as follows:

$$\text{Inter-coder agreement} = A/n$$

Where  $A$  equals total agreements between the two coders and  $n$  equals total number of units coded by the coders<sup>3</sup>.

Prior to each coding meeting, including any initial practice transcript meetings, both coders independently calculated their individual and overall code numbers. At the beginning of each meeting, the primary researcher populated the Inter-Coder Reliability Table with these overall numbers, allowing for calculation of inter-coder agreement reliability at the beginning of the transcript. After these numbers were recorded, the two co-coders discussed each code, making decisions to recode some phrases and to develop new codes as necessary. As new codes were formed, extensive notes were recorded in the memo box (**Appendix D**). If the two co-coders could not agree on an assignment of a code to a phrase, or to a definition of a code, then the

major professor assisted in the process. Upon completion of each coding meeting, the codes were recalculated using the “End” column of the Inter-Coder Reliability Table, and new totals recorded. This information allowed for pre- and post-discussion inter-coder reliability to be calculated. The desired inter-coder agreement was 80% before moving to the next transcript<sup>4</sup>.

### Meeting/Evaluation Schedule

A total of 14 episodes of the television program were coded, with each transcript being approximately 40 pages long. The first transcript was coded before meeting and calculating inter-coder agreement. The next transcript was not coded until the first transcript was at least 80% inter-coder agreement, and in many cases, 100%. After that, three transcripts were coded, then a meeting, reaching at least 80% agreement on those transcripts before moving to the next three, etc. The co-coders met every third transcript to assure that their methods were matching and still achieving 80% inter-coder reliability.

### Analysis

After the coding was completed, the transcripts were converted into portable document format (pdf) and then put into the qualitative data analysis software program Qualitative Data Analysis (QDA) Miner 4 to allow for analysis. In QDA Miner the following titles were created in ordered to capture the previously coded phrases:



| <b>Category</b>                    | <b>Code</b>                       |
|------------------------------------|-----------------------------------|
| Adolescent                         | Normative                         |
|                                    | Behavioral                        |
|                                    | Control                           |
| Other                              | Normative (Other)                 |
|                                    | Behavioral (Other)                |
|                                    | Control (Other)                   |
| Visual of Infant Feeding           | Infant Feeding Equipment          |
|                                    | Bottle-Feeding                    |
|                                    | Breastfeeding                     |
| Verbal Talk about Infant Feeding   | Formula                           |
|                                    | Breastfeeding                     |
|                                    | Juice                             |
|                                    | Tube Feeding                      |
| Who is Feeding Infant with Bottle? | A (Adolescent)                    |
|                                    | MGM (Maternal Grandmother)        |
|                                    | IF (Infant's Father)              |
|                                    | N (Nurse)                         |
|                                    | F (Friend)                        |
|                                    | S (Sister)                        |
|                                    | MGGM (Maternal Great-Grandmother) |
| D (Dad)                            |                                   |

Due to one co-coder travelling to China without access to QDA Miner, it was necessary to complete the initial coding in Microsoft Word and then to transfer the information to QDA Miner.

Additionally, we went back and recorded the amount of time that was spent either talking about infant feeding, or performing a behavior related to infant feeding. We then put these times into an excel spreadsheet, along with their respective code (e.g. If the verbal comment was a normative belief, then the time that was spent talking about that belief was calculated and noted with a tag-normative belief). We then represented this information by pie charts that visually portrayed the amount of time spent on speaking about each belief, and the visual representation

of active or passive infant feeding. With this we were able to determine percentage of time each belief was represented in each episode. Our findings show that the majority of verbal talk about infant feeding was spent on Control beliefs spoken by the teen.

### Timeline

|                           | 2012 |      |     |     |     |     |     | 2013 |     |     |     |     |     |
|---------------------------|------|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|
| Task                      | Jun  | July | Aug | Sep | Oct | Nov | Dec | Jan  | Feb | Mar | Apr | May | Jun |
| Proposal Hearing          |      |      |     |     | X   |     |     |      |     |     |     |     |     |
| Transcription             | X    | X    | X   | X   | X   |     |     |      |     |     |     |     |     |
| Coding-Method Development |      |      | X   | X   | X   |     |     |      |     |     |     |     |     |
| Coding                    |      |      |     |     |     | X   | X   | X    |     |     |     |     |     |
| Analyze Data              |      |      |     |     |     |     |     | X    | X   | X   | X   |     |     |
| Write up Results          |      |      |     |     |     |     |     |      |     |     | X   | X   | X   |
| Thesis Hearing            |      |      |     |     |     |     |     |      |     |     |     |     | X   |

## **Appendix B: Expanded Research Methods References**

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## Appendix C: Expanded Results

For each episode that was coded, a vignette was drafted to give a general sense of what the episode portrayed. Quotes ([...]) were recorded to support the narrative, but removed and summarized in final draft. For example:

In this particular situation 6% of the show was dedicated to infant feeding, 55% of that was visually portrayed, with 44% of this being shown in an active way. This particular individual expressed an almost equal amount of normative influences (16% of total infant feeding codes, 36% of verbal codes about infant feeding) and issues with control (14% of total infant feeding codes, 31% of verbal codes about infant feeding) (whether positive or negative), while the influence of others was minimally expressed through normative (5% of total infant feeding codes, 10% of verbal codes about infant feeding), control (2% of total infant feeding codes, 5% of verbal codes about infant feeding) and behavioral beliefs (2% of total infant feeding codes, 4% of verbal codes about infant feeding). Fifty-six percent of the verbal codes about infant feeding are about breastfeeding and the teen's desire to not breastfeed. The teen states: [...], therefore she is implying that the fact that breastfeeding makes one's infant healthier, does not apply to her decision on infant feeding. Additionally, the teen states: [...], implying that breastfeeding would make your boobs raw and would be more work in the middle of the night than giving the infant a bottle. Finally, the teen adds that her boyfriend does not care if she doesn't breastfeed, [...], implying that the cost of formula does not outweigh what she would have to endure while breastfeeding. The teen makes a comment about not overfeeding infant, because it will make him sick. The teen's opinion was 37% of total infant feeding codes and 81% of verbal codes about infant feeding. This teen was formula feeding and many of her control statements were about her desire for the teen's boyfriend (and infant's father) to help with feeding or changing the baby. The teen and teen boyfriend lives by themselves in an apartment. The teen boyfriend is supportive monetarily, but not emotionally. He is more interested in hanging out with friends and working. The teen works part time and is primarily responsible for her infant. The teen's mother helps out with daycare and with feeding the infant. The teen's friends also help out with infant feeding. On three instances the baby begins to cry and is then shown being fed a bottle. The teen graduates from high school and starts college.

Ideas in the draft narrative that were uncommon were dropped from the final narrative. Also, the demographic information was interesting, and could potentially inform further research, but was not applicable to our research study. Therefore this information was also removed from the manuscript. The data can be found in Appendix F. Table 5 defines the codes that were used throughout the results section.

Table 4. Percentage of Verbal and Visual Codes of Infant Feeding

|  | <b>Vignette</b> |          |          |          |          |          |          |          |          |           |           |           |           |
|--|-----------------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|
|  | <b>1</b>        | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> | <b>7</b> | <b>8</b> | <b>9</b> | <b>10</b> | <b>11</b> | <b>12</b> | <b>13</b> |
| <b><u>Verbal Codes about Feeding</u></b>         |                 |          |          |          |          |          |          |          |          |           |           |           |           |
| <b>Formula/Bottle</b>                            | 43%             |          | 100%     |          | 100%     | 77%      |          |          | 7%       | 71%       | 67%       | 35%       | 31%       |
| <b>Breastfeeding</b>                             | 57%             | 100%     |          | 100%     |          | 23%      |          |          | 93%      |           | 17%       | 65%       | 69%       |
| <b>Juice</b>                                     |                 |          |          |          |          |          |          | 100%     |          |           |           |           |           |
| <b>Tube Feeding</b>                              |                 |          |          |          |          |          |          |          |          |           | 17%       |           |           |
| <b>Happy Meal</b>                                |                 |          |          |          |          |          |          |          |          | 29%       |           |           |           |
|  |                 |          |          |          |          |          |          |          |          |           |           |           |           |
| <b><u>Visual Codes</u></b>                       |                 |          |          |          |          |          |          |          |          |           |           |           |           |
| <b>Adolescent Breastfeeding</b>                  |                 |          |          | 20%      |          | 6%       |          |          | 14%      |           |           | 31%       |           |
| <b>Adolescent Bottle Feeding</b>                 | 53%             | 82%      | 45%      | 80%      | 22%      | 59%      | 83%      | 69%      | 55%      | 70%       | 71%       | 54%       | 50%       |
| <b>Maternal Grandmother Bottle Feeding</b>       | 12%             |          |          |          | 22%      | 35%      | 17%      | 15%      |          |           | 7%        |           |           |
| <b>Boyfriend Bottle Feeding</b>                  | 18%             |          | 55%      |          | 33%      |          |          | 15%      | 18%      | 30%       | 7%        | 15%       | 50%       |
| <b>Nurse Bottle Feeding</b>                      | 6%              | 9%       |          |          |          |          |          |          |          |           |           |           |           |
| <b>Friend Bottle Feeding</b>                     | 12%             |          |          |          |          |          |          |          |          |           | 14%       |           |           |
| <b>Sister Bottle Feeding</b>                     |                 | 9%       |          |          |          |          |          |          |          |           |           |           |           |
| <b>Maternal Great Grandmother Bottle Feeding</b> |                 |          |          |          | 22%      |          |          |          |          |           |           |           |           |
| <b>Maternal Grandfather Bottle Feeding</b>       |                 |          |          |          |          |          |          |          | 14%      |           |           |           |           |

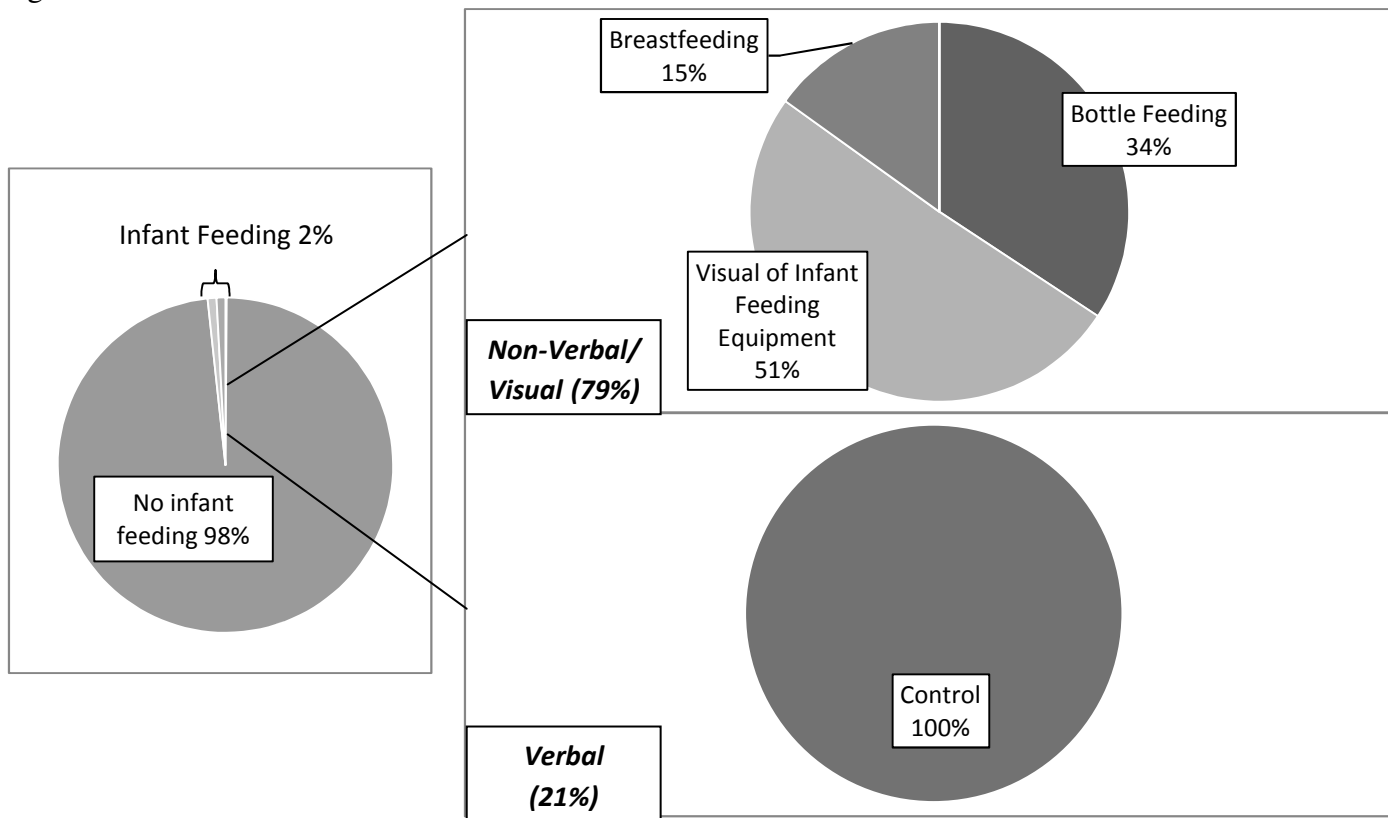
Table 5. Definitions of Codes

| <b>Variables</b>                                    | <b>Definition</b>  |
|---|--|
| Normative   | The adolescent makes a comment that refers to how acceptable the infant-feeding mode is, both amongst close friends and family and in the broader context of society   |
| Behavioral  | When the adolescent makes a comment that refers to her opinion about infant-feeding mode.  |
| Control   | When the adolescent makes a comment that refers to the perceived ease of infant feeding and how supported she believes or feels she in the performance of infant feeding.  |
| Normative (Others)                                  | When someone other than the adolescent refers to how acceptable the infant feeding is, both amongst close friends and family and in the broader context of society   |
| Behavioral (Others)                                 | When someone other than the adolescent states an opinion about infant feeding.   |
| Control (Others)                                    | When someone other than the adolescent refers to the perceived ease of infant feeding and how supported they believe or feel they will be in the performance of infant feeding.  |
| Bottle-Feeding                                      | When the infant is bottle-feeding (bottle-contents sometimes unknown)  |
| Breastfeeding                                       | When the infant is breastfeeding   |
| Visual of Infant Feeding Equipment (Normative Cues) | When some type of infant feeding equipment (e.g. can of formula on the counter, breast pump, bottles or nipples on a drying rack, half-empty bottles on the table) is included in the scene, but no actual feeding is occurring. |

The following vignettes are divided into episodes that contain infants that were breastfed, and episodes that only contain bottle-fed infants.

### Episodes Containing Breastfeeding Adolescents

Vignette 4

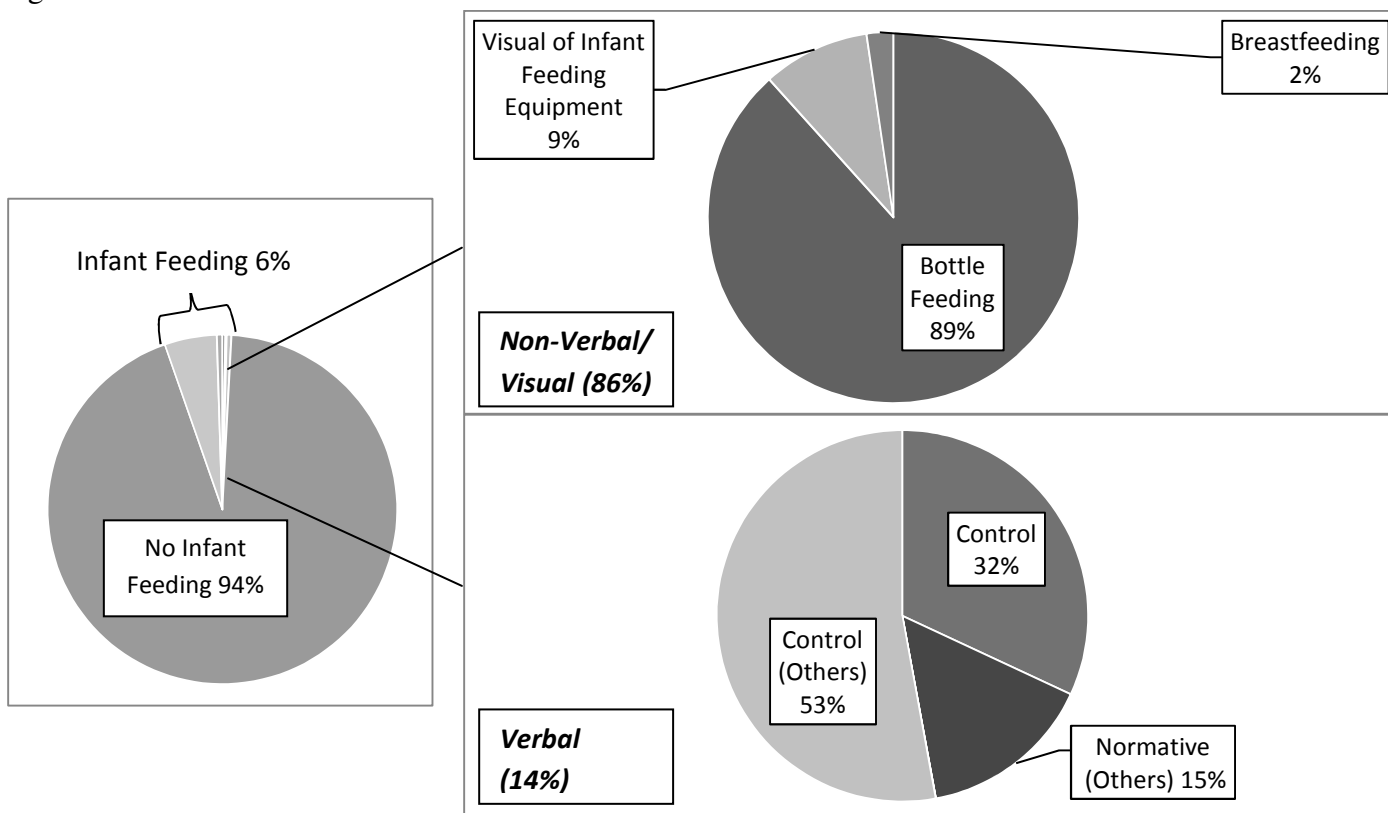


The majority of the infant feeding content of this episode was portrayed visually (79%). The visual content portrayed the infant being fed 34% through bottle-feedings, 15% through breastfeeding and the majority through infant feeding equipment (51%). This particular individual expressed only control influences and talked only of breastfeeding (100%). The adolescent did not express any Normative



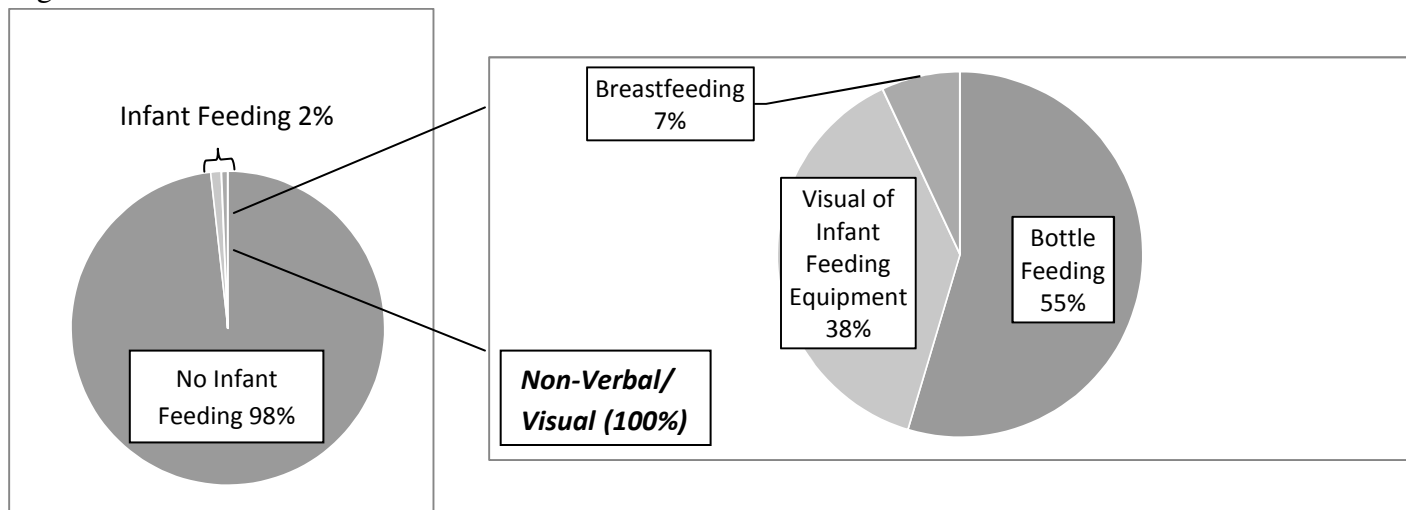
or Behavioral beliefs and those around the adolescent did not express any opinions or beliefs concerning infant feeding. Although bottle-feeding did occur, no signs of a formula can or making formula was portrayed in this episode, therefore it cannot be determined whether it was formula or expressed breast milk in the bottles. All visuals of infant feeding equipment included bottles sitting on counter tops and tables, or of bottles being hand washed. The adolescent was the only one shown feeding the infant, either through breastfeeding or with a bottle (**Table 4**). These representations imply that breastfeeding is a potential avenue to feed an infant, but may allow the viewer to see that bottle-feeding is also a feasible route.

Vignette 6



Well over half of the infant feeding content of this episode was portrayed visually (86%) with 89% showing bottle-feeding, 2% showing breastfeeding and the remainder being visuals of infant feeding equipment (9%). This particular individual expressed only issues of control (32%) with most of the verbal expressions coming from those around the adolescent through Normative (15%) and Control beliefs (53%). The adolescent did not express any Normative or Behavioral beliefs. Twenty-three percent of the verbal codes were about breastfeeding (Table 4), primarily portraying the adolescent learning how to breastfeed from the nurse, which is the only time that breastfeeding was portrayed. The episode depicted a high level of control opinions expressed by the MGM who was shown being very concerned that the adolescent was more concerned about her social life than the nutrition (or just ‘needs’?) needs of her infant.[need a transition sentence, indicating the MGM did not just talk about it, but actually did take over.] The storyline of this episode could potentially lead a younger audience to believe that if an adolescent is unable to adequately care for an infant, the MGM may step in to care for the infant.

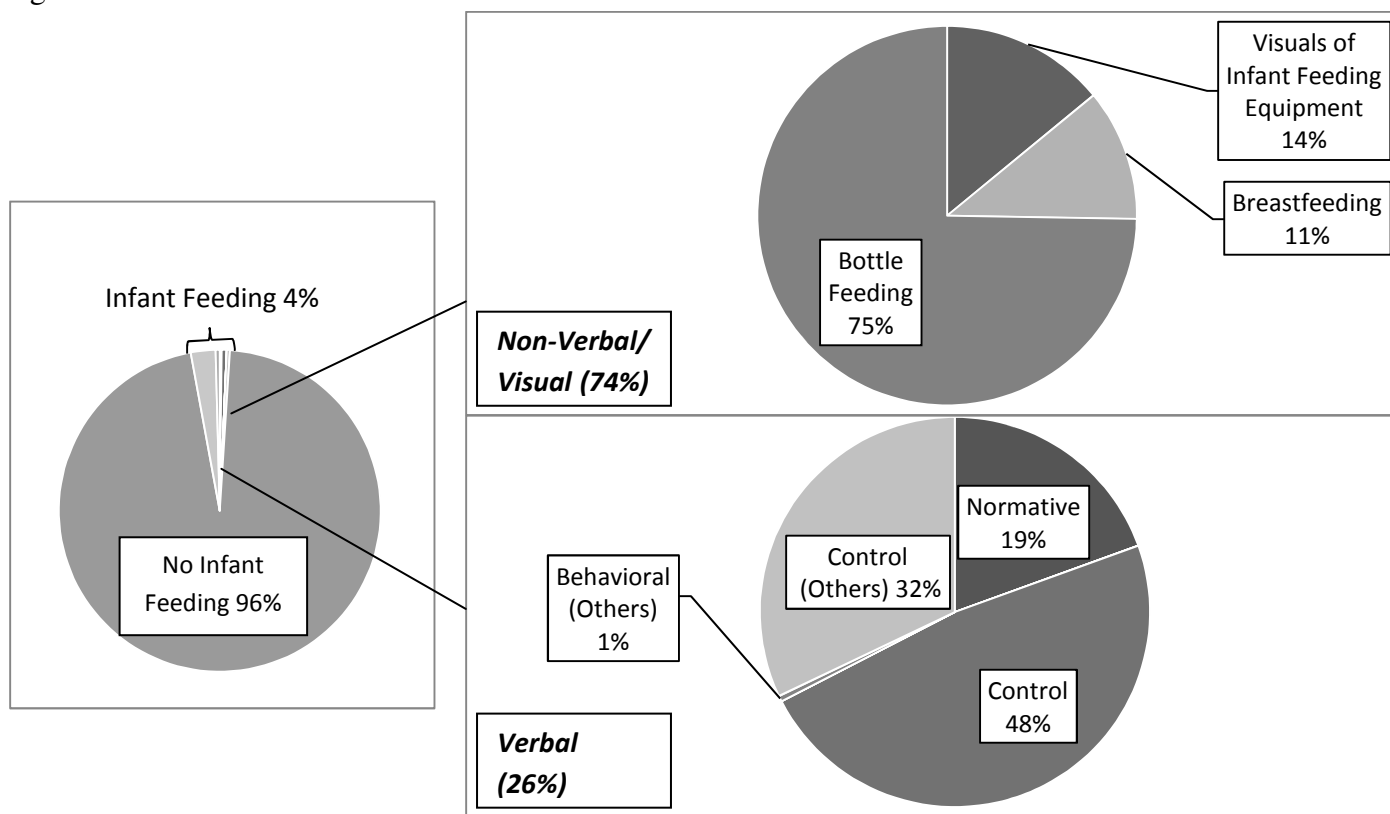
Vignette 7



All of the infant feeding content in this episode was portrayed visually (100%). Of this, 55% showed the infant bottle-feeding, 7% showed the adolescent breastfeeding and the remainder was visuals of infant feeding equipment (38%). The infant is primarily formula fed throughout the whole episode, except the last visual of infant feeding, which portrayed breastfeeding. There was no verbal

explanation of the switch from formula to breast milk, or why breastfeeding was not shown earlier in the episode. These representations imply that an adolescent can both breastfeed and formula feed, and the two behaviors are interchangeable.

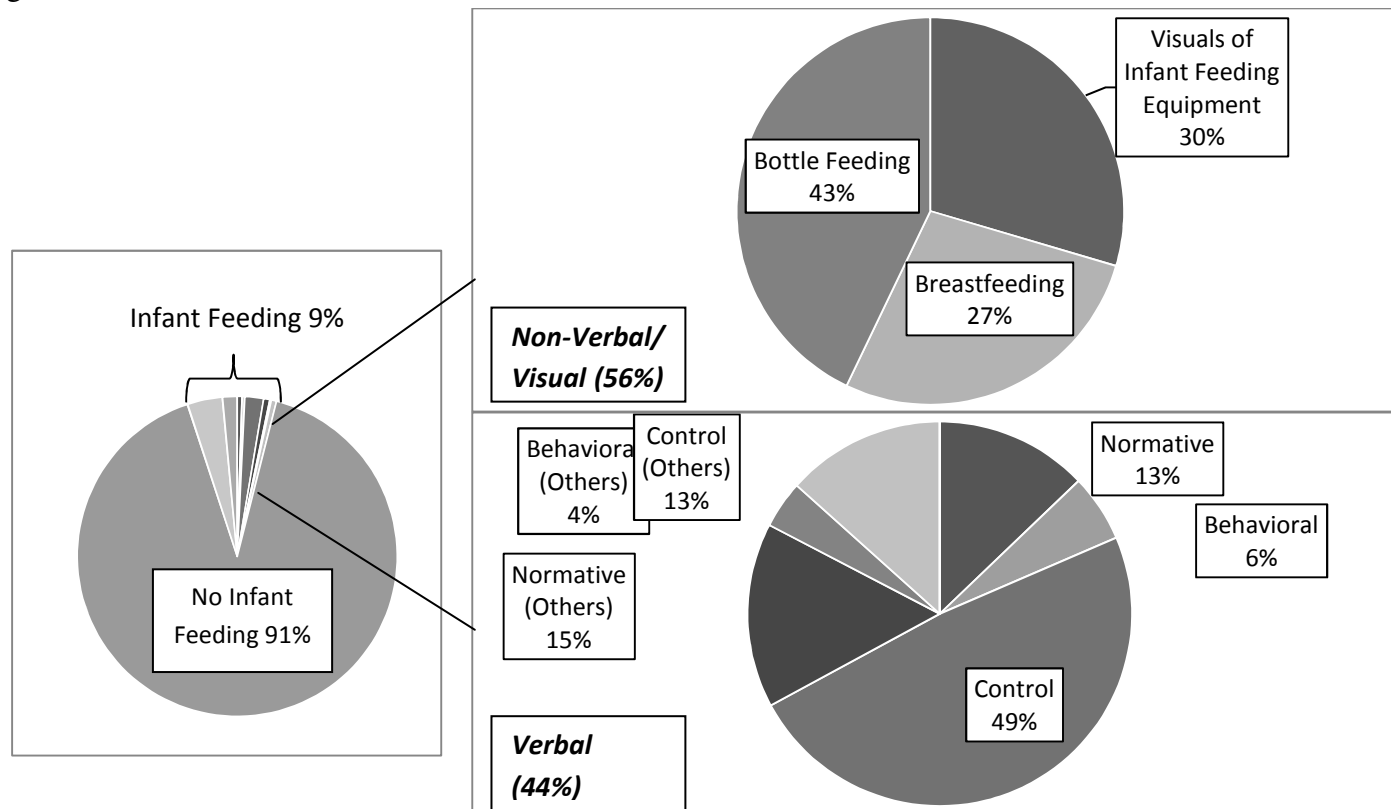
Vignette 9



Well over half of the infant feeding in this episode was visually portrayed (74%) with 75% showing bottle-feeding, 11% showing breastfeeding and the remainder was visuals of infant feeding equipment (14%). This particular adolescent expressed most of her opinions through Control (48%) and Normative beliefs (19%), but did not express any Behavioral beliefs. Those around the adolescent

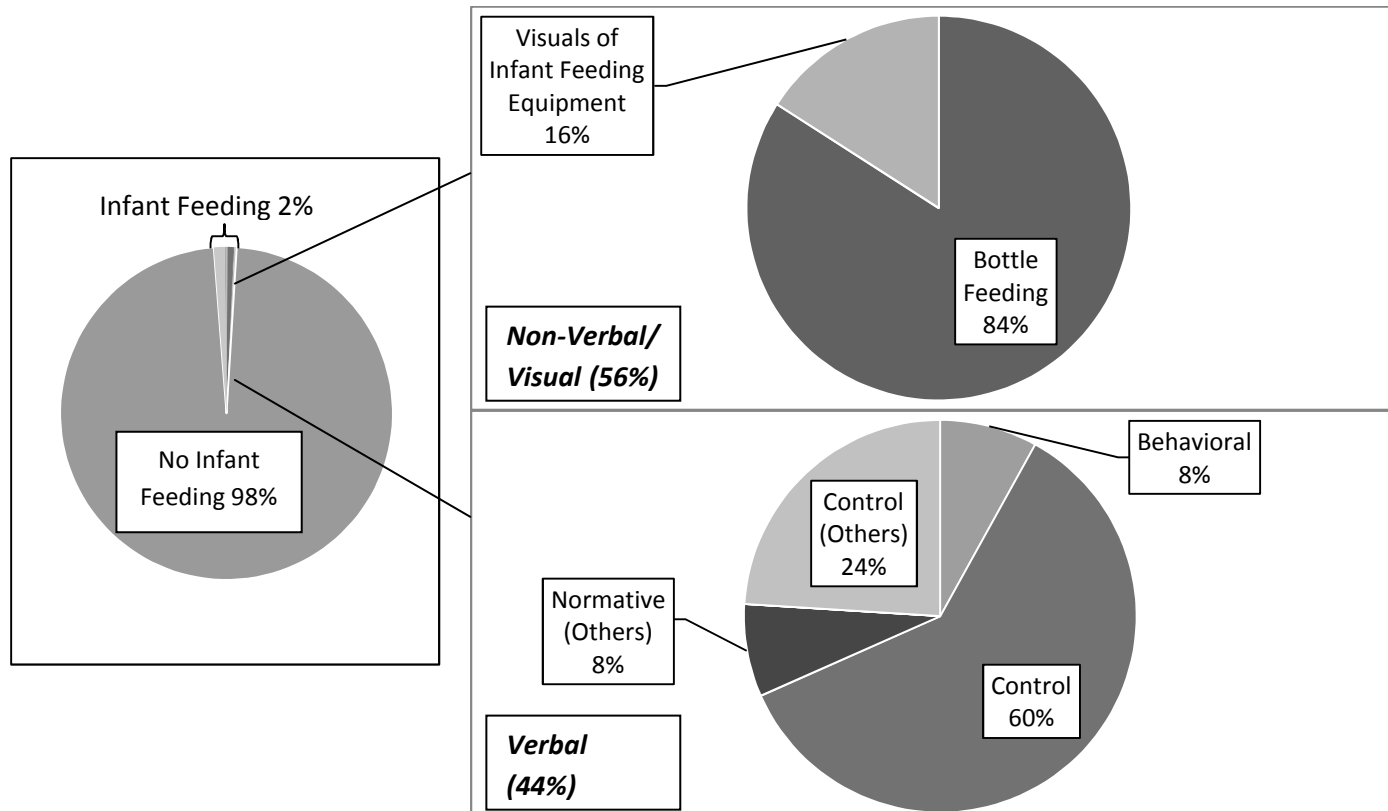
expressed Control beliefs (32%) with minimal opinions about Behavioral beliefs (1%) and no Normative beliefs. Of all the verbal codes, 93% were about breastfeeding and 7% were about formula feeding (**Table 4**). The adolescent portrayed an interest in breastfeeding, but due to unpredicted circumstances, the infant was initially portrayed being tube fed and then fed by a bottle. The adolescent was shown handling a breast pump, but never using it. The adolescent's initiation of breastfeeding was portrayed as being very painful and difficult. The adolescent is eventually seen formula feeding and no longer breastfeeding with no discussion as to why she stopped the behavior. These representations imply that despite the desire to breastfeed, modifiable factors may cause for a behavioral change. Additionally, breastfeeding may be difficult and painful for the adolescent mother, which may ultimately cause her to switch to infant formula.

Vignette 12



This episode portrayed that highest amount of infant feeding content at 9%. Of that, 56% was shown visually with breastfeeding 27% of the time, bottle-feeding 43% of the time and the remainder was visuals of infant feeding equipment (30%). This particular individual expressed Control (49%), Normative (13%) and Behavioral beliefs (6%) about infant feeding. Those around the adolescent were also verbal about infant feeding expressing Normative (15%), Control (13%) and Behavioral beliefs (4%). Of the verbal comments made about infant feeding, 65% were about breastfeeding and 35% were about formula feeding. This situation portrayed the adolescent being very interested in breastfeeding and having several conversations, prenatally, with the infant's father about her desires to breastfeed because of the benefits it offers the infant, and how it is more economical. The infant's father was portrayed as being very supportive and in agreement with the adolescent's desire to breastfeed. After the infant was born, the adolescent was portrayed as struggling with breastfeeding because of how painful and time consuming it was (i.e. not being able to shower or eat because of breastfeeding). The infant's father was portrayed as very supportive even when the adolescent decided to formula feed because of the physical demands it had on her body. These representations imply that, despite the cost saving and long-term benefits of breastfeeding, the physical toll on the adolescent mother's body may be too inconvenient and taxing and ultimately result in her decision to formula feed.

Vignette 13

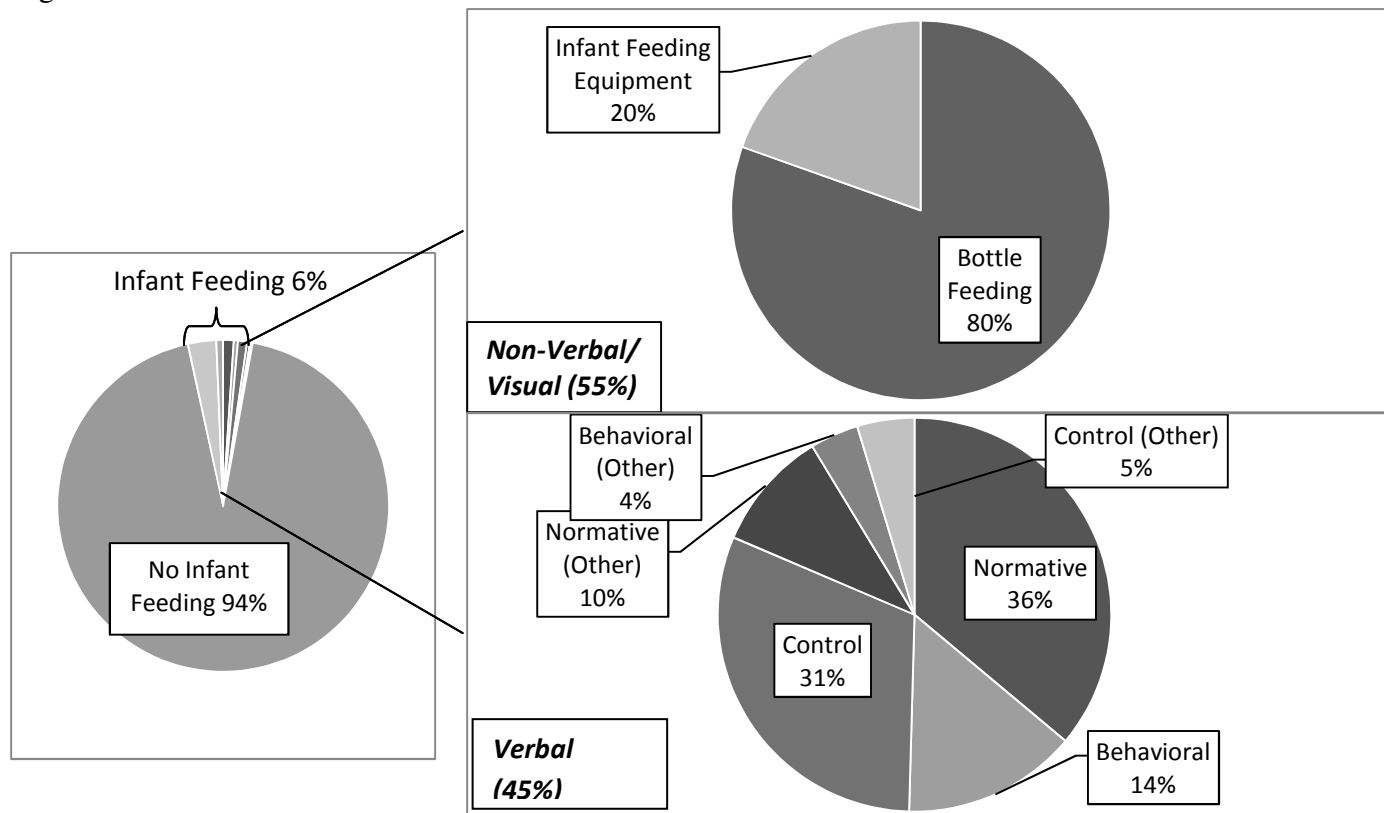


A little over half of the infant feeding portrayal in this episode was visual (56%). Of this 56%, the infant was shown bottle-feeding 84% of the time and the remainder was visuals infant feeding equipment (16%). In one incidence, the adolescent is portrayed as needing to find a quiet place to breastfeed alone. However, this behavior is never visually portrayed. After this one portrayal of her desire to breastfeed, the adolescent only mentions, and is shown, using formula to make bottles, and bottle-feeding. The adolescent expressed most of her opinions through Control (60%) and Behavioral beliefs (8%) and did not express any Normative beliefs. Others around the adolescent expressed both Control (24%) and Normative opinions (8%) and no Behavioral beliefs. Seventy percent of

comments about infant feeding were of breastfeeding and 30% were of bottle or formula feeding. These representations imply that breastfeeding is not a behavior that should be portrayed publicly, and that one needs privacy in order to feed their infant.

**Episodes Containing Formula Feeding Adolescents**

Vignette 1

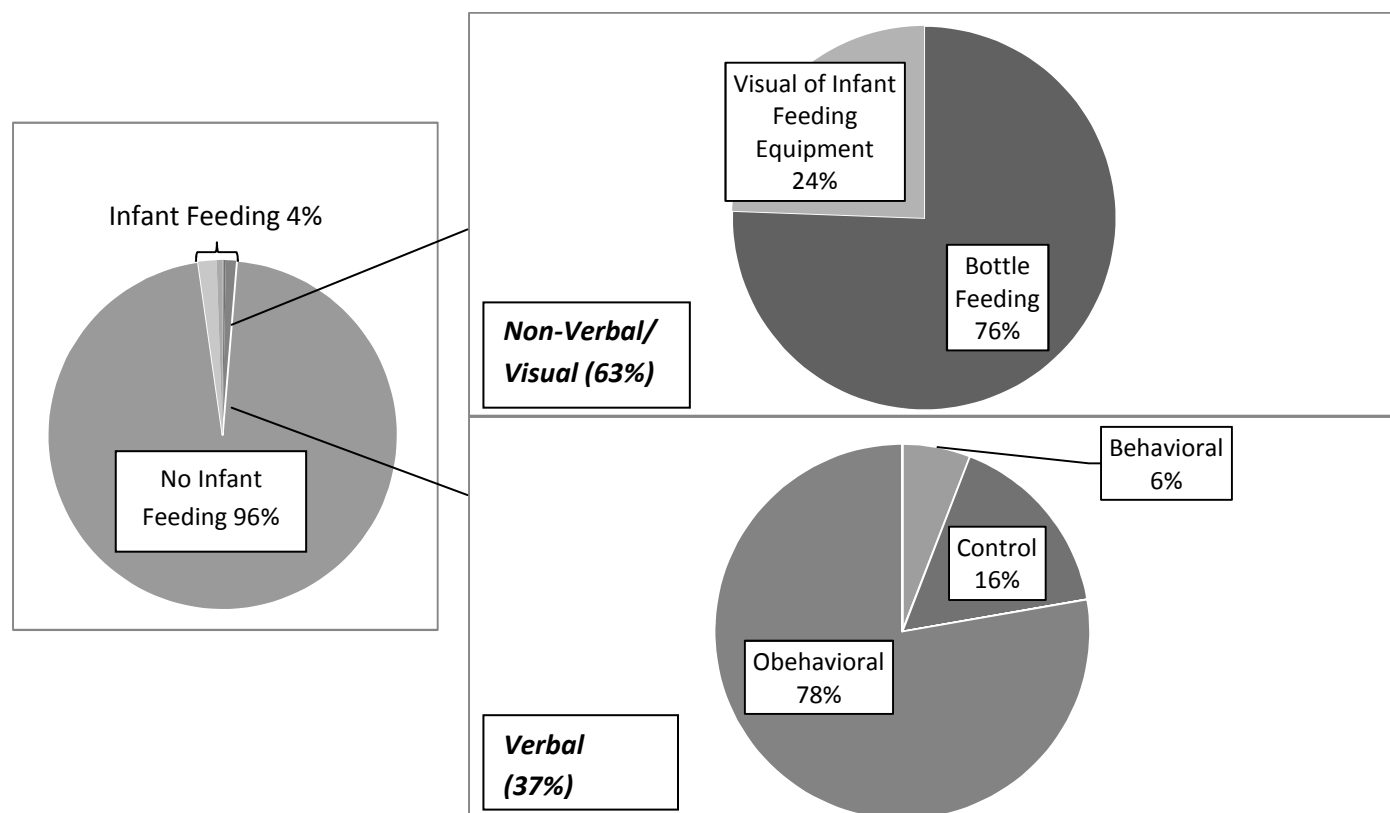


More than half of the infant feeding content of this episode was visual (55%), with 80% showing bottle-feeding and 20% showing visuals of infant feeding equipment. This particular individual expressed an almost equal amount of Normative influences (36%) and issues with Control (31%), while the influence of others was minimally expressed through Normative (10%), Control (5%) and

Behavioral beliefs (4%). Fifty-seven percent of the verbal codes about infant feeding focused on breastfeeding (**Table 4**), primarily portrays the adolescent's lack of desire to engage in this behavior despite recognized benefits to the infant. For example, the adolescent notes that, though she has been told that breastfeeding is the healthier choice for the infant, this has not been her experience, as both she and the infant's father are generally healthy, despite being formula-fed. In addition, the adolescent discusses undesirable physical changes associated with breastfeeding and the belief that it would be overwhelming and inconvenient. Finally, the adolescent discusses a lack of concern from the infant's father, regarding infant-feeding choices, outside of the potential cost-savings related to breastfeeding. These representations imply that, despite the potential cost-savings and long-term benefits to the infant, the potential physical toll on the adolescent mother's body and the perceived inconvenience of breastfeeding result in her decision to formula-feed.



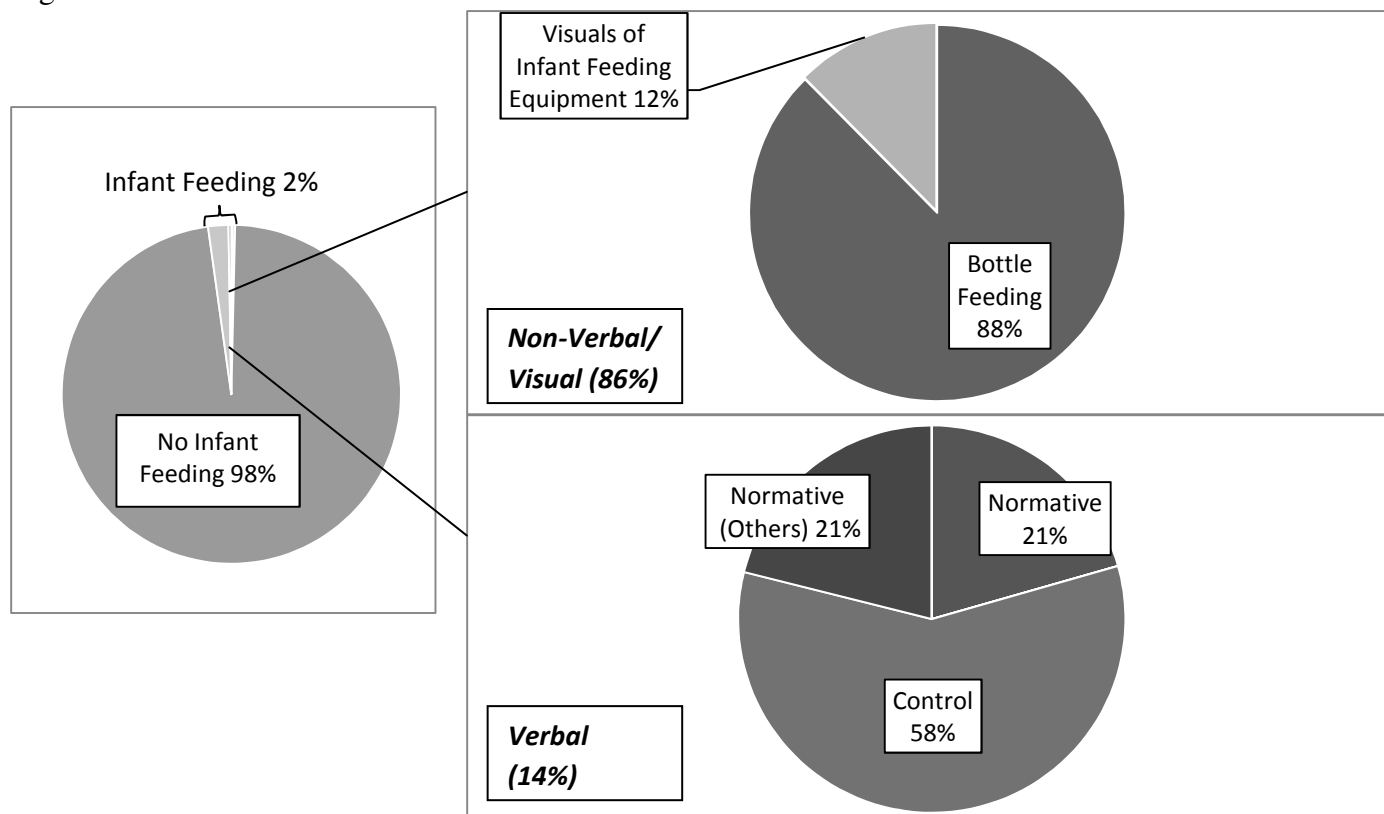
## Vignette 2



A little over half of the infant feeding content was portrayed visually (63%) with 76% showing bottle-feeding and the remainder showing visuals of infant feeding equipment (24%). All verbal codes focused on breastfeeding (**Table 4**) and the adolescent's choice to opt out of the behavior. Individuals other than the adolescent expressed many Behavioral beliefs about breastfeeding (78%) and the adolescent commented on few Control beliefs (16%) and Behavioral beliefs (6%). The adolescent did not express any Normative beliefs, nor did those around the adolescent express any Control or Normative beliefs. Despite the portrayal of the adolescent's medical doctor's encouragement to breastfeed because of its many healthful benefits, the adolescent's choice to formula feed was supported by the portrayal of her unwavering belief that breastfeeding would cause many undesired physical changes to her breasts.

This belief was also supported by the maternal grandmother who was portrayed as being more concerned about the adolescent's physical appearance instead of the benefits of breastfeeding. These representations imply that, despite the encouragement of a medical professional, the potential physical changes to the adolescent mother's body may result in her decision to formula-feed.

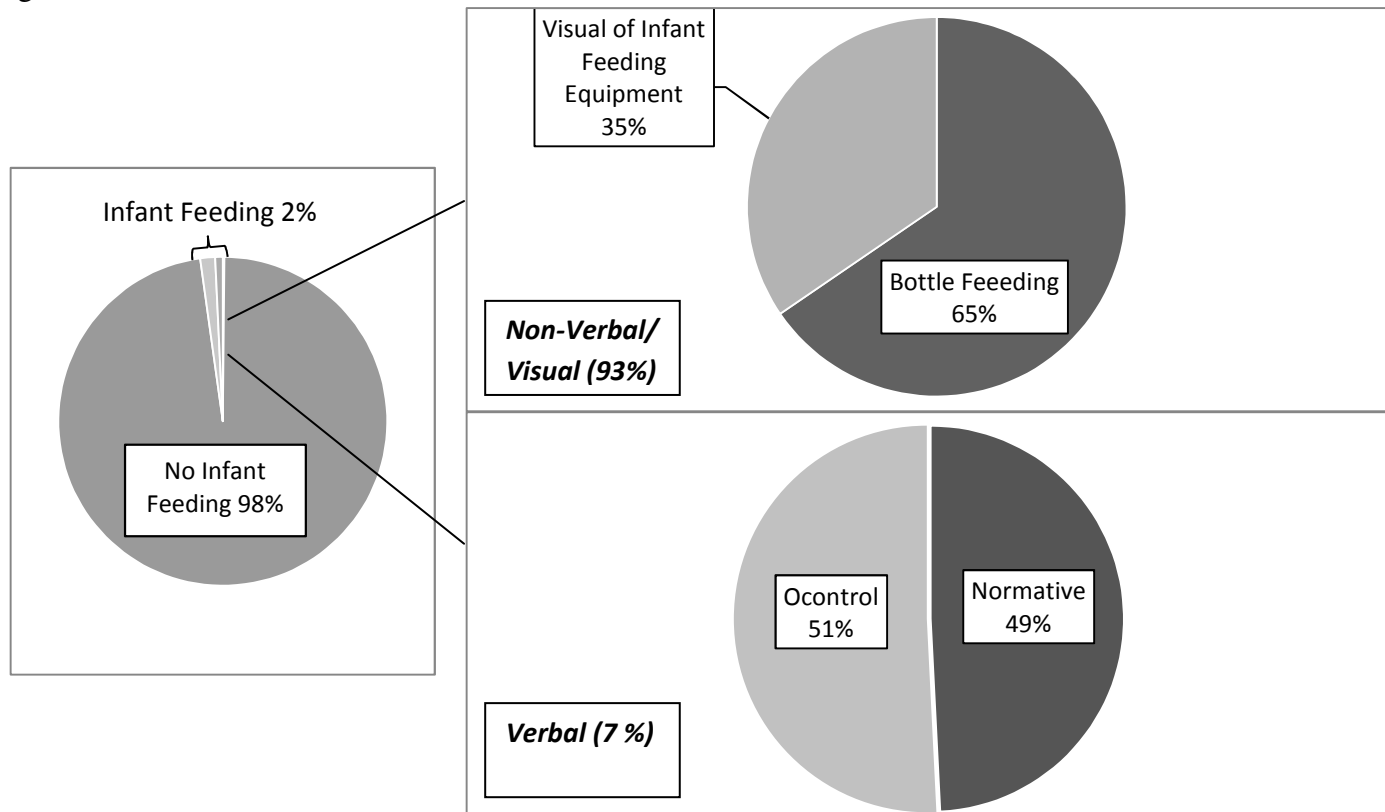
Vignette 3



Well over half of the infant feeding content was visually portrayed (86%) with 88% showing bottle-feeding and the remainder showing visuals of infant feeding equipment (12%). The adolescent expressed many opinions through Control (58%) and Normative beliefs (21%) but no Behavioral beliefs. Those around the adolescent expressed Normative beliefs (21%). All verbal codes come from

the adolescent and the infant's father and are portrayed as being focused on sharing the responsibilities of preparing bottles of formula and feeding the infant. The infant's father contributes to over half of the feedings (54%) (**Table 4**) and breastfeeding is never mentioned. These representations imply that infant feeding can be challenging for an adolescent couple, and that the responsibilities of making bottles of formula and feeding the infant can be time-consuming and trying on a relationship

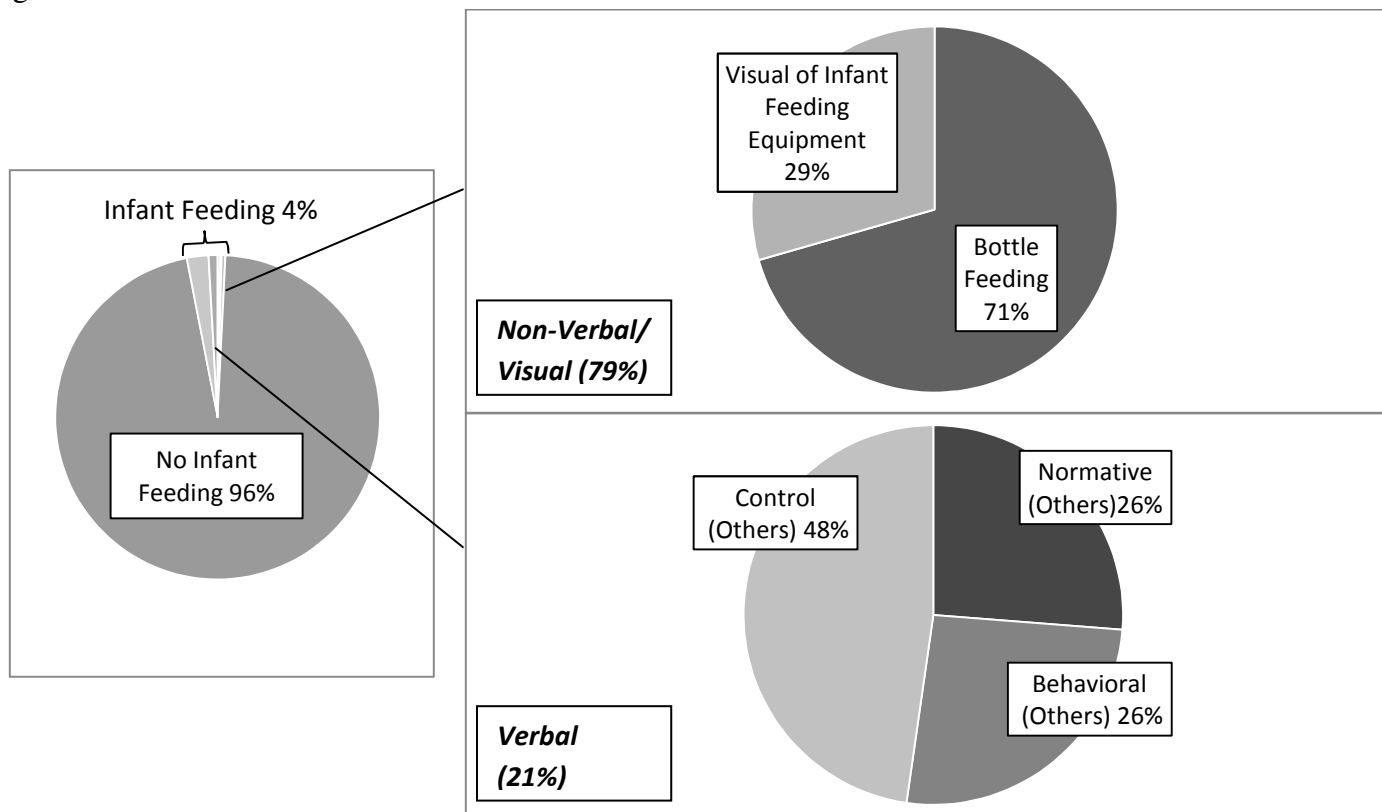
Vignette 5



Almost all the infant feeding content was visual (93%) with 65% showing bottle-feeding and the remainder showing visuals of infant feeding equipment (35%). This particular individual expressed only Normative influences (49%) and those other than the adolescent

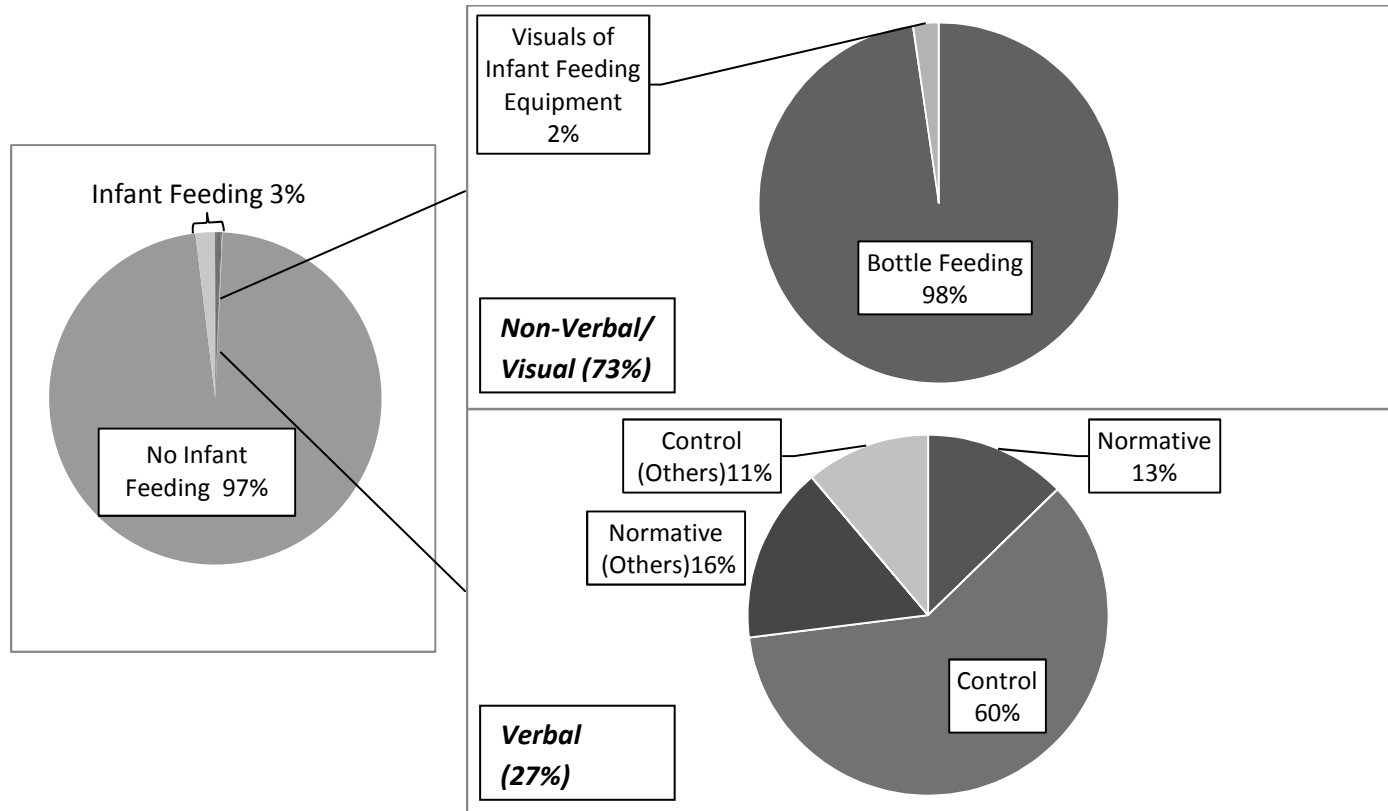
expressed only issues with Control (51%). No Behavioral or Control beliefs were stated by the adolescent, and no Normative or Behavioral beliefs were expressed by those around her. All of the verbal codes were about formula or bottle-feeding (**Table 4**) primarily portraying the adolescent's difficult adjustment to motherhood and her appreciation of the infant's father in preparing bottles of formula and helping to feed the infant. The infant's father was portrayed as being very helpful with feeding the infant, being shown feeding 33% of the time, versus the adolescent who fed 22% of the time. The situation portrayed the adolescent's mother also being pregnant and having her baby before the adolescent delivers hers. The adolescent's mother is portrayed exclusively formula feeding her infant. These representations imply that the responsibilities of making bottles of formula and feeding an infant can be difficult and stressful for adolescent parents; however a supportive father can assist with these responsibilities and can reduce the burden for the adolescent mother

## Vignette 8



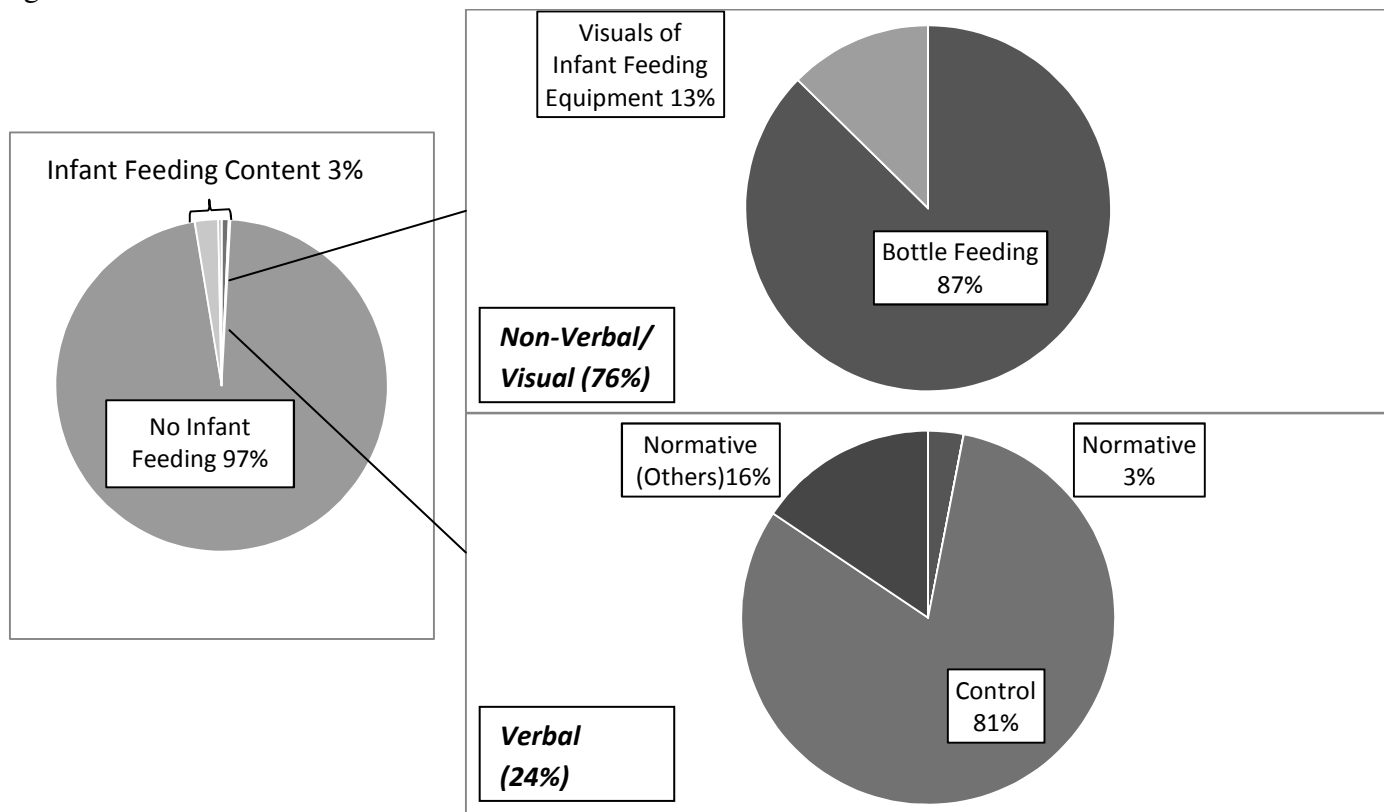
Well over half the infant feeding content was visual (79%), with 71% showing bottle-feeding and the remainder showing visuals of infant feeding equipment (29%). This particular adolescent did not express any opinions or beliefs, and all verbal comments came from those around the adolescent. The influence of others was expressed through Control (48%), Behavioral (26%) and Normative (26%) beliefs. All of the verbal codes about infant feeding referred to a future time when the infant would be able to drink juice (**Table 4**) and the ways that it could be diluted for the baby's health and to save money. These representations imply that the focus is not always on breastfeeding or formula feeding, but also what the infant may be consuming at a later time.

Vignette 10



A large portion of the infant feeding content was portrayed visually (73%) with 98% showing bottle-feeding and the remainder showing visuals of infant feeding equipment (2%). The adolescent expressed most of her opinions through Control (60%) and Normative beliefs (13%) and did not share any Behavioral beliefs. Those around the adolescent expressed mainly Normative beliefs (16%) and opinions about Control beliefs (11%) and also did not state any Behavioral opinions. All verbal codes about infant feeding were about formula feeding, or the father joking about the infant eating a happy meal. This situation portrayed the infant being formula fed primarily by the adolescent and adolescent boyfriend. These representations imply that infant father's may not completely understand what food is age-appropriate for an infant, and that education to inform them may be necessary.

## Vignette 11



Well over half of the infant feeding content was portrayed visually (76%) with 87% showing bottle-feeding and the remainder showing visuals of infant feeding equipment (13%). The adolescent expressed most of her opinions through Control (81%) and Normative beliefs (3%) and did not express any Behavioral beliefs. Others around the adolescent expressed only Normative beliefs (16%) about infant feeding. Only one comment is made about breastfeeding, and this is by a friend of the adolescent before the infants are born. The adolescent does not breastfeed. The adolescent (72%) shares the responsibility of feeding with the adolescent boyfriend (7%), adolescent mother (7%) and adolescent friend (14%). On one instance the adolescent talks about the infants starting to cry and how she was trying to soothe them by feeding them, but it was very difficult to feed them both at the same time. These

representations imply that despite the friend's encouragement to breastfeed, the choice of infant feeding decision is up to the adolescent mother.



## **Appendix E: Defining Beliefs Codebook**

| Development of Normative Beliefs   | Development of Behavioral Beliefs  | Development of Control Beliefs  |
|--|--|---|
| When a statement is made in a way that the teen expects the behavior will be judged  | When a statement is made in way that a teen expresses her opinion or personal belief   | When they say something that conveys that either have complete control, or no control over the situation. (e.g. You can feed him. Go make a bottle. ) |
| If stated that is expressed by others  | If directly stated as a belief   |   |
| When statements are given about behavior in an environment the mother exists in.   | When they state something they believe to be an acceptable behavior (e.g. formula, adding cereal to bottle, breastfeeding, etc.) |   |
| When the teen “speaks for someone else”. The teen makes a statement about how someone else feels/thinks. (e.g. He doesn’t care if I breastfeed or not) |  |   |
| The individual’s perception of how acceptable the behavior is, both amongst close friends and family and in the broader context of society             |  |   |

| Development of Other's Normative Beliefs  | Other's Behavioral Beliefs   | Other's Control Beliefs   |
|---|--|---|
| When others instigate conversations related to normative beliefs  | When a statement is made in way that someone other than the teen expresses their opinion or personal belief                      | When others say something that conveys that either have complete control, or no control over the situation. |
| When other stated something that is expressed by others   | If directly stated as on belief  |   |
| When statements are given about behavior in an environment another exists in.   | When they state something they believe to be an acceptable behavior (e.g. formula, adding cereal to bottle, breastfeeding, etc.) |   |
| When others make statements that suggest there are trying to figure out what is normal, or acceptable (e.g. how much should I feed the infant?) |  |   |

All Visual information is considered to be a **NORMATIVE** belief. When no verbal comments are made about the visual behavior, it is conveyed as being a behavior in an environment that the teen exists in, and therefore the audience will view it as an acceptable behavior, and therefore, normal.

## **Appendix F: Inter-Coder Reliability**

Table 6. Inter-Coder Reliability Result from Beginning of Transcript

| Beginning of Transcript |                       |    |         |                             |                     |    |         |                             |                    |    |         |                             |                   |    |         |                             |
|-------------------------|-----------------------|----|---------|-----------------------------|---------------------|----|---------|-----------------------------|--------------------|----|---------|-----------------------------|-------------------|----|---------|-----------------------------|
| Vignette                | Total Number of Codes |    | Matched | Inter-Coder Reliability (%) | Number of Normative |    | Matched | Inter-Coder Reliability (%) | Number of Behavior |    | Matched | Inter-Coder Reliability (%) | Number of Control |    | Matched | Inter-Coder Reliability (%) |
|                         | R1                    | R2 |         |                             | R1                  | R2 |         |                             | R1                 | R2 |         |                             | R1                | R2 |         |                             |
| 1                       | 35                    | 29 | 20      | <b>57-69</b>                | 6                   | 5  | 4       | <b>67-80</b>                | 2                  | 6  | 2       | <b>33-100</b>               | 8                 | 3  | 3       | <b>38-100</b>               |
| 2                       | 14                    | 17 | 11      | <b>65-79</b>                | 0                   | 0  | 0       | <b>100</b>                  | 0                  | 1  | 0       | <b>0</b>                    | 4                 | 5  | 4       | <b>80-100</b>               |
| 3                       | 4                     | 13 | 3       | <b>23-75</b>                | 0                   | 0  | 0       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 1                 | 2  | 0       | <b>0</b>                    |
| 4                       | 3                     | 9  | 2       | <b>22-67</b>                | 1                   | 0  | 0       | <b>0</b>                    | 0                  | 0  | 0       | <b>100</b>                  | 0                 | 0  | 0       | <b>100</b>                  |
| 5                       | 5                     | 10 | 5       | <b>50-100</b>               | 0                   | 0  | 0       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 0                 | 0  | 0       | <b>100</b>                  |
| 6                       | 30                    | 34 | 25      | <b>74-83</b>                | 0                   | 0  | 0       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 3                 | 4  | 1       | <b>25-33</b>                |
| 7                       | 9                     | 8  | 6       | <b>67-75</b>                | 0                   | 0  | 0       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 0                 | 0  | 0       | <b>100</b>                  |
| 8                       | 20                    | 18 | 17      | <b>85-94</b>                | 0                   | 0  | 0       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 0                 | 0  | 0       | <b>100</b>                  |
| 9                       | 36                    | 36 | 26      | <b>72</b>                   | 0                   | 1  | 0       | <b>0</b>                    | 0                  | 1  | 0       | <b>0</b>                    | 7                 | 4  | 1       | <b>14-25</b>                |
| 10                      | 17                    | 15 | 11      | <b>65-73</b>                | 2                   | 0  | 0       | <b>0</b>                    | 0                  | 0  | 0       | <b>100</b>                  | 1                 | 2  | 1       | <b>50-100</b>               |
| 11                      | 18                    | 17 | 15      | <b>83-88</b>                | 0                   | 0  | 0       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 1                 | 1  | 1       | <b>100</b>                  |
| 12                      | 47                    | 40 | 28      | <b>60-70</b>                | 1                   | 2  | 0       | <b>0</b>                    | 0                  | 5  | 0       | <b>0</b>                    | 22                | 12 | 11      | <b>50-92</b>                |
| 13                      | 17                    | 14 | 9       | <b>53-64</b>                | 0                   | 2  | 0       | <b>0</b>                    | 0                  | 1  | 0       | <b>0</b>                    | 7                 | 4  | 3       | <b>43-75</b>                |

(R1= Researcher 1, R2= Researcher 2)

Table 6. Inter-Coder Reliability Result from Beginning of Transcript (Cont.)

| Beginning of Transcript |                           |    |         |                             |                          |    |         |                             |                         |    |         |                             |                             |    |         |                             |
|-------------------------|---------------------------|----|---------|-----------------------------|--------------------------|----|---------|-----------------------------|-------------------------|----|---------|-----------------------------|-----------------------------|----|---------|-----------------------------|
| Vignette                | Number of Other Normative |    | Matched | Inter-Coder Reliability (%) | Number of Other Behavior |    | Matched | Inter-Coder Reliability (%) | Number of Other Control |    | Matched | Inter-Coder Reliability (%) | Total number of Visual Cues |    | Matched | Inter-Coder Reliability (%) |
|                         | R1                        | R2 |         |                             | R1                       | R2 |         |                             | R1                      | R2 |         |                             | R1                          | R2 |         |                             |
| 1                       | 4                         | 0  | 0       | <b>0</b>                    | 2                        | 2  | 2       | <b>100</b>                  | 2                       | 2  | 1       | <b>50</b>                   | 11                          | 11 | 8       | <b>73</b>                   |
| 2                       | 0                         | 0  | 0       | <b>100</b>                  | 4                        | 5  | 3       | <b>60-75</b>                | 0                       | 1  | 0       | <b>0</b>                    | 7                           | 5  | 4       | <b>57-80</b>                |
| 3                       | 0                         | 0  | 0       | <b>100</b>                  | 0                        | 0  | 0       | <b>100</b>                  | 0                       | 1  | 0       | <b>0</b>                    | 3                           | 10 | 3       | <b>30-100</b>               |
| 4                       | 0                         | 0  | 0       | <b>100</b>                  | 0                        | 0  | 0       | <b>100</b>                  | 0                       | 0  | 0       | <b>100</b>                  | 2                           | 9  | 2       | <b>22-100</b>               |
| 5                       | 0                         | 0  | 0       | <b>100</b>                  | 0                        | 0  | 0       | <b>100</b>                  | 0                       | 0  | 0       | <b>100</b>                  | 5                           | 10 | 5       | <b>50-100</b>               |
| 6                       | 0                         | 1  | 0       | <b>0</b>                    | 0                        | 1  | 0       | <b>0</b>                    | 5                       | 4  | 4       | <b>80-100</b>               | 22                          | 24 | 20      | <b>83-91</b>                |
| 7                       | 0                         | 0  | 0       | <b>100</b>                  | 0                        | 0  | 0       | <b>100</b>                  | 0                       | 0  | 0       | <b>100</b>                  | 9                           | 8  | 6       | <b>67-75</b>                |
| 8                       | 1                         | 2  | 1       | <b>50-100</b>               | 1                        | 0  | 0       | <b>0</b>                    | 2                       | 0  | 0       | <b>0</b>                    | 16                          | 16 | 16      | <b>100</b>                  |
| 9                       | 0                         | 1  | 0       | <b>0</b>                    | 0                        | 1  | 0       | <b>0</b>                    | 3                       | 0  | 1       | <b>0-33</b>                 | 26                          | 28 | 25      | <b>89-95</b>                |
| 10                      | 0                         | 0  | 0       | <b>100</b>                  | 0                        | 0  | 0       | <b>100</b>                  | 2                       | 1  | 1       | <b>50-100</b>               | 12                          | 12 | 9       | <b>75</b>                   |
| 11                      | 0                         | 1  | 0       | <b>0</b>                    | 0                        | 0  | 0       | <b>100</b>                  | 1                       | 0  | 0       | <b>0</b>                    | 16                          | 15 | 14      | <b>88-93</b>                |
| 12                      | 2                         | 3  | 1       | <b>33-50</b>                | 1                        | 3  | 1       | <b>33-100</b>               | 6                       | 0  | 0       | <b>0</b>                    | 15                          | 15 | 15      | <b>100</b>                  |
| 13                      | 1                         | 1  | 1       | <b>100</b>                  | 0                        | 0  | 0       | <b>0</b>                    | 3                       | 1  | 1       | <b>33-100</b>               | 6                           | 5  | 4       | <b>67-80</b>                |

Table 7. Inter-Coder Reliability Results from End of Transcript

| <b>End of Transcript</b> |                       |    |         |                             |                     |    |         |                             |                    |    |         |                             |                   |    |         |                             |
|--------------------------|-----------------------|----|---------|-----------------------------|---------------------|----|---------|-----------------------------|--------------------|----|---------|-----------------------------|-------------------|----|---------|-----------------------------|
| Vignette                 | Total Number of Codes |    | Matched | Inter-Coder Reliability (%) | Number of Normative |    | Matched | Inter-Coder Reliability (%) | Number of Behavior |    | Matched | Inter-Coder Reliability (%) | Number of Control |    | Matched | Inter-Coder Reliability (%) |
|                          | R1                    | R2 |         |                             | R1                  | R2 |         |                             | R1                 | R2 |         |                             | R1                | R2 |         |                             |
| 1                        | 48                    | 48 | 48      | <b>100</b>                  | 6                   | 6  | 6       | <b>100</b>                  | 4                  | 4  | 4       | <b>100</b>                  | 8                 | 8  | 8       | <b>100</b>                  |
| 2                        | 22                    | 22 | 22      | <b>100</b>                  | 0                   | 0  | 0       | <b>100</b>                  | 1                  | 1  | 1       | <b>100</b>                  | 3                 | 3  | 3       | <b>100</b>                  |
| 3                        | 16                    | 16 | 16      | <b>100</b>                  | 1                   | 1  | 1       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 2                 | 2  | 2       | <b>100</b>                  |
| 4                        | 12                    | 12 | 12      | <b>100</b>                  | 0                   | 0  | 0       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 2                 | 2  | 2       | <b>100</b>                  |
| 5                        | 19                    | 19 | 19      | <b>100</b>                  | 1                   | 1  | 1       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 0                 | 0  | 0       | <b>100</b>                  |
| 6                        | 36                    | 36 | 36      | <b>100</b>                  | 0                   | 0  | 0       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 6                 | 6  | 6       | <b>100</b>                  |
| 7                        | 8                     | 8  | 8       | <b>100</b>                  | 0                   | 0  | 0       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 0                 | 0  | 0       | <b>100</b>                  |
| 8                        | 20                    | 20 | 20      | <b>100</b>                  | 0                   | 0  | 0       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 0                 | 0  | 0       | <b>100</b>                  |
| 9                        | 42                    | 42 | 42      | <b>100</b>                  | 3                   | 3  | 3       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 7                 | 7  | 7       | <b>100</b>                  |
| 10                       | 18                    | 18 | 18      | <b>100</b>                  | 2                   | 2  | 2       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 3                 | 3  | 3       | <b>100</b>                  |
| 11                       | 22                    | 22 | 22      | <b>100</b>                  | 1                   | 1  | 1       | <b>100</b>                  | 0                  | 0  | 0       | <b>100</b>                  | 3                 | 3  | 3       | <b>100</b>                  |
| 12                       | 55                    | 55 | 55      | <b>100</b>                  | 6                   | 6  | 6       | <b>100</b>                  | 4                  | 4  | 4       | <b>100</b>                  | 17                | 17 | 17      | <b>100</b>                  |
| 13                       | 19                    | 19 | 19      | <b>100</b>                  | 0                   | 0  | 0       | <b>100</b>                  | 1                  | 1  | 1       | <b>100</b>                  | 7                 | 7  | 7       | <b>100</b>                  |

Table 7. Inter-Coder Reliability Results from End of Transcript (Cont.)

| End of Transcript |                           |    |         |                             |                          |    |         |                             |                         |    |         |                             |                             |    |         |                             |
|-------------------|---------------------------|----|---------|-----------------------------|--------------------------|----|---------|-----------------------------|-------------------------|----|---------|-----------------------------|-----------------------------|----|---------|-----------------------------|
| Vignette          | Number of Other Normative |    | Matched | Inter-Coder Reliability (%) | Number of Other Behavior |    | Matched | Inter-Coder Reliability (%) | Number of Other Control |    | Matched | Inter-Coder Reliability (%) | Total number of Visual Cues |    | Matched | Inter-Coder Reliability (%) |
|                   | R1                        | R2 |         |                             | R1                       | R2 |         |                             | R1                      | R2 |         |                             | R1                          | R2 |         |                             |
| 1                 | 4                         | 4  | 4       | 100                         | 2                        | 2  | 2       | 100                         | 2                       | 2  | 2       | 100                         | 22                          | 22 | 22      | 100                         |
| 2                 | 0                         | 0  | 0       | 100                         | 4                        | 4  | 4       | 100                         | 0                       | 0  | 0       | 100                         | 14                          | 14 | 14      | 100                         |
| 3                 | 1                         | 1  | 1       | 100                         | 0                        | 0  | 0       | 100                         | 0                       | 0  | 0       | 100                         | 12                          | 12 | 12      | 100                         |
| 4                 | 0                         | 0  | 0       | 100                         | 0                        | 0  | 0       | 100                         | 0                       | 0  | 0       | 100                         | 10                          | 10 | 10      | 100                         |
| 5                 | 0                         | 0  | 0       | 100                         | 0                        | 0  | 0       | 100                         | 1                       | 1  | 1       | 100                         | 17                          | 17 | 17      | 100                         |
| 6                 | 2                         | 2  | 2       | 100                         | 0                        | 0  | 0       | 100                         | 6                       | 6  | 6       | 100                         | 22                          | 22 | 22      | 100                         |
| 7                 | 0                         | 0  | 0       | 100                         | 0                        | 0  | 0       | 100                         | 0                       | 0  | 0       | 100                         | 8                           | 8  | 8       | 100                         |
| 8                 | 1                         | 1  | 1       | 100                         | 1                        | 1  | 1       | 100                         | 2                       | 2  | 2       | 100                         | 16                          | 16 | 16      | 100                         |
| 9                 | 0                         | 0  | 0       | 100                         | 1                        | 1  | 1       | 100                         | 4                       | 4  | 4       | 100                         | 27                          | 27 | 27      | 100                         |
| 10                | 1                         | 1  | 1       | 100                         | 0                        | 0  | 0       | 100                         | 1                       | 1  | 1       | 100                         | 11                          | 11 | 11      | 100                         |
| 11                | 2                         | 2  | 2       | 100                         | 0                        | 0  | 0       | 100                         | 0                       | 0  | 0       | 100                         | 16                          | 16 | 16      | 100                         |
| 12                | 6                         | 6  | 6       | 100                         | 2                        | 2  | 2       | 100                         | 4                       | 4  | 4       | 100                         | 16                          | 16 | 16      | 100                         |
| 13                | 2                         | 2  | 2       | 100                         | 0                        | 0  | 0       | 100                         | 3                       | 3  | 3       | 100                         | 6                           | 6  | 6       | 100                         |



## **Vita**

Driven by a passion for healthy communities, Mary Pate-Bennett will be finishing her graduate education at The University of Tennessee in Public Health Nutrition in August 2013. She has developed professional, leadership qualities through the Maternal and Child Health Nutrition Leadership Education and Training Grant, under which she managed several projects including continuing education events, cultural competency workshops, and an alumni survey tool. Mary's interest in promoting healthy living began at an early age, eating foods that would sustain her through soccer games and exploring the natural world. She also loves the culinary arts, having cooked at a French Bistro in Nashville, Tennessee. With undergraduate degrees in Psychology from The University of the South and Nutrition and Food Science from Middle Tennessee State University, Mary looks forward to bringing her well-rounded knowledge to the field. Her thesis has brought new insight into the role of media and its portrayal of young women infant feeding. When Mary completes her field experience at the San Diego County Health Department, she will be working as a Registered Dietitian in the field of maternal and child health.