**Guilt, Shame, and Postpartum Infant Feeding Outcomes: A Systematic Review**

Leanne Jackson, BSc (Hons); Leonardo De Pascalis, PhD; Jo Harrold, PhD; & Victoria Fallon, PhD

**Institutional affiliation:** All named authors are affiliated with the University of Liverpool, Eleanor Rathbone Building, Bedford Street South, Liverpool, L69 7ZA

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*Abstract*

Negative maternal affect (e.g., depression, anxiety) has been associated with shorter breastfeeding duration and poorer breastfeeding intention, initiation, and exclusivity. Other affective states, including guilt and shame, have been linked with formula feeding practice, though existing literature has yet to be synthesised. A narrative synthesis of quantitative data, and a framework synthesis of qualitative and quantitative data were conducted to explore guilt and/or shame in relation to infant feeding outcomes. Searches were conducted on the DISCOVER database between December 2017 and March 2018. The search strategy was re-run in February 2020, together yielding four hundred and sixty-seven studies. The study selection process identified twenty articles, published between 1997 and 2017. Quantitative results demonstrated formula feeders experienced guilt more commonly than breastfeeding mothers. Formula feeders experienced external guilt most commonly associated with healthcare professionals, whereas breastfeeding mothers experienced guilt most commonly associated with peers and family. No quantitative literature examined shame in relation to infant feeding outcomes, warranting future research. The framework synthesis generated four distinct themes which explored guilt and/or shame in relation to infant feeding outcomes: “Underprepared and ineffectively supported”, “Morality and perceived judgement” (breastfeeding); “Frustration with infant feeding care”, and “Failures, fears, and forbidden practice” (formula feeding). Both guilt and shame were associated with self-perception as a bad mother and poorer maternal mental health. Guilt and shame experiences were qualitatively different in terms of sources and outcomes, dependent on infant feeding method. Suggestions for tailored care to minimise guilt and shame while supporting breastfeeding are provided.

*Keywords*

Systematic Review

Breastfeeding

Infant Formula

Postpartum

Maternal Mental Health

Infant Feeding

*Introduction*

Breastfeeding provides health benefits to infants, such as reduced risk of infectious morbidity and mortality, dental malocclusions, and overweight and diabetes later in life (Victora et al, 2016). Breastfeeding also protects mothers from breast and ovarian cancer and reduces risk of diabetes (Victora et al, 2016). As such, the World Health Organisation (WHO) recommend exclusive breastfeeding for the first six months postpartum (UNICEF, 2017). Despite awareness of breastfeeding benefits and promotional campaigns (Thomas, 2014), WHO recommendation compliance remains poor in developed countries.

A systematic review involving eleven European countries completing a standardised national survey, found that in all participating countries, breastfeeding rates declined gradually from initiation after birth to one to two months postpartum and at six months postpartum (e.g., in the Netherlands, from 80% initiation, to 64% prevalence at two months postpartum, and 51% prevalence at six months postpartum; Theurich et al, 2019). A similar decline can be seen between breastfeeding initiation and breastfeeding duration in other developed countries, including: Australia (Australian Government: Department of Health, AGDH, 2019), Canada (Chalmers et al, 2009), United Kingdom (McAndrew et al, 2012) and the United States (Center for Disease Control and Prevention, CDCP, 2019). Given these trends, it is important to explore potential factors contributing to the gap between breastfeeding initiation and breastfeeding prevalence at six months postpartum in developed countries.

Maternal emotional state is a modifiable factor which affects breastfeeding outcomes. In a systematic review of forty-eight studies, higher postpartum depressive symptomatology was significantly associated with shorter breastfeeding duration and early exclusive breastfeeding cessation, compared with mothers reporting fewer depressive symptoms (Dias & Figueiredo, 2015. See also: Dennis & McQueen, 2009). A narrative synthesis of thirty-three studies indicated higher postpartum anxiety was associated with reduced likelihood of exclusive breastfeeding and increased risk of early breastfeeding cessation, compared with mothers reporting fewer anxiety symptoms (Fallon et al, 2016a). High prenatal anxiety was also associated with reduced breastfeeding intention and exclusivity (Fallon, Bennett & Harrold, 2016; Grigoriadis et al, 2018).

Guilt has also been an associated outcome of infant feeding, and especially so for formula supplementation. Guilt has been defined as feelings of remorse concerning a moral transgression (Niedenthal, Tangney, & Gavanski, 1994). In existing literature, formula feeding was perceived as a moral failing, as maternal discourse was frequently spoken of synonymously with having not done ‘right’ by one’s infant (Brodribb, Fallon, Jackson, & Hegney, 2010; Lakshman, & Ong, 2009) and with having failed to meet one’s expectations of oneself postnatally (Kair, Flaherman, Newby, & Colaizy, 2015). Such feelings of guilt have been reportedly exacerbated by breastfeeding education and promotion which inefficiently prepares women for postnatal infant feeding difficulties (Groleau, et al, 2016). Guilt has also been associated with feelings of anger being held towards healthcare professionals, when mothers perceived that they had received ineffective support (Humphries & McDonald, 2012).

Perceiving that healthcare professionals were promoting breastfeeding as a moral obligation, and perceiving that breastfeeding was overly medicalised, were both linked with guilt and undermined maternal autonomy (Benoit, Goldberg, & Campbell-Yeo, 2016). Indeed, perceiving that formula feeding was risky to infant health and perceiving that one had moral responsibility over infant feeding method, were both associated with feelings of guilt for women who were supplementing with formula (Taylor & Wallace, 2017; Williams, Kurz, Summers, & Crabb, 2012). Interestingly, women who perceived that supplementing with formula milk was not their decision did not experience guilt to the same degree, highlighting the importance of perceived responsibility in determining the presence or absence of maternal guilt (Holcomb, 2017).

Shame also occurs in association with infant feeding experiences. Shame has been defined as the internalisation of guilt to the self, especially if one perceives themselves to be failing in front of others (Niedenthal et al, 1994). Although both guilt and shame concern a perceived or actual moral transgression, guilt is externalised and behaviour-orientated, whilst shame concerns the internalisation of said transgression to the self (Niedenthal et al, 1994). Taylor and Wallace (2012) further supported this definition in finding that globalised assessments of the self as a bad mother, in association with formula feeding practice or public breastfeeding, exceeded the behaviour-focused feelings of guilt and instead focused on the self as a failing entity. In infant feeding literature, feeling that one was failing their moral obligation to breastfeed when challenges were experienced, and feeling like one was failing in front of others, were linked with feelings of shame (Hanell, 2017). For breastfeeding mothers, objectification of infant feeding was also associated with shame and distress (Thomson, Ebisch-Burton, & Flacking, 2015).

In quantitative infant feeding literature, guilt has been examined through binary response options ‘yes/no’ in response to direct questions about feeling guilty due to one’s infant feeding method (Chezem et al, 1997; Fallon et al, 2016b; Komninou et al, 2016). To the author’s knowledge, there are currently no quantitative studies examining shame in relation to infant feeding outcomes. In qualitative infant feeding literature, guilt and shame have been identified in thematic analysis (e.g., identified theme ‘Relief and guilt’ in Fahlquist, 2016, and ‘shame’ examination in Hanell, 2017) and have occasionally been grouped in thematic analysis (e.g., identified theme, ‘Stress, shame, and guilt’ in Asiodu et al, 2017). Framework analyses have also been used to offer a holistic picture of how shame is experienced in an infant feeding context, which have considered both individual vulnerabilities e.g., idealised expectations of ‘good mothering’, and social factors e.g., fears concerning breastfeeding in public (Thomson et al, 2015).

Current literature evidences the relationship between poorer breastfeeding outcomes and negative maternal affect, such as anxiety, depression, guilt, and shame, in developed countries. While there are existing reviews examining the relationship between infant feeding outcomes and maternal anxiety and depression, guilt and shame literature has yet to be synthesised in relation to infant feeding outcomes. Understanding this relationship may allow better identification of women vulnerable to experiencing these emotions and provide recommendations for tailored care. Given the identified decline in breastfeeding prevalence at six months postpartum compared with initiation rates in developed countries (AGDH, 2019; CDCP, 2019; Chalmers et al, 2009; Theurich et al, 2019; McAndrew et al, 2012) the current review will synthesise data from developed countries, only. This mixed-methods systematic review aims to a) examine the relationship between guilt and/or shame and different infant feeding outcomes, and b) examine how guilt and/or shame are experienced differentially depending on infant feeding method.

*Key messages*

Guilt is more prevalent among formula feeding mothers than among breastfeeding mothers. Sources of guilt also differ by infant feeding method.

Framework synthesis identified the following themes: “Underprepared and ineffectively supported”, “Morality and perceived judgement” (breastfeeding); “Frustration with infant feeding care” and, “Failures, fears, and forbidden practice” (formula feeding).

Analyses identified a need for: realistic, non-judgemental, mother-centred support (breastfeeding); and a need to provide emotional and practical support about safe formula feeding practice (formula feeding).

A shift is recommended from a ‘six months exclusive breastfeeding’ to an ‘every feed counts’ approach to providing breastfeeding support.

*Method*

The current review was pre-registered on PROSPERO in November 2018: <https://www.crd.york.ac.uk/PROSPERO/#recordDetails>. A protocol was developed based on a scoping literature search.

*Eligibility Criteria*

Studies were included if they explicitly explored guilt and/or shame as variables or if they reported them as key themes in an infant feeding context, and if they were conducted in developed countries, as defined by the Statistical Annex (Country Classification, 2014). Given cultural variation in breastfeeding practices and maternal wellbeing between developed (Leahy-Warren, Creedon, O’Mahony, & Mulcahy, 2017) and developing (Wanjohi et al, 2017) countries, it was deemed appropriate to only include studies from the former. This is also supported by the identified decline in breastfeeding prevalence at six months postpartum compared with initiation rates reported in developed countries (AGDH, 2019; CDCP, 2019; Chalmers et al, 2009; Theurich et al, 2019; McAndrew et al, 2012). See Table 1 for inclusion criteria for study selection.

[Table 1]

*Search strategy*

A search strategy was developed in line with Population Exposure Outcomes criteria (PEO; University of London, 2020. See Table 2). PEO criteria were utilised to develop clear study aims and research questions, as recommended by O’Harhay & Donaldson (2020) and in line with other attempts to answer health-related questions (Davies, 2011). PEO criteria were also utilised to map inclusion criteria for article selection at title, abstract, and full text screening stages. Key terms utilised in the final search strategy were determined via a scoping literature search and the subsequent identification of relevant key words included in identified papers. All named authors agreed upon the final search strategy.

[Table 2]

Key words used to search for articles included: ‘shame\*’; ‘guilt\*’; ‘stigma\*’; ‘moral\*’; ‘breastfeed\*’; ‘breast feed\*’; ‘breast-feed\*’; ‘bottle feed\*’; ‘bottle-feed\*’; ‘infant feed\*’; ‘infant-feed\*’; ‘formula feed\*’; ‘formula-feed\*’; ‘combi\* feed\*’; and, ‘human lactat\*’. Boolean operators were used to blend keywords, and truncation was used to identify variations of keywords. Articles were screened for suitability against eligibility criteria, outlined in Table 1, at title, abstract, and full text stages. For an example of the search strategy being utilised in a single database, please see Appendix 1.

Searches were conducted between December 2017 and March 2018. Inter-rater reliability was assessed by a second researcher who independently screened 25% of included articles, generating an almost perfect unweighted kappa statistic of .933 (McHugh, 2012). Reference lists of included articles were systematically screened, identifying three additional articles. Authors of included articles were contacted for inclusion of unpublished work(s) which identified one additional article. No date or language limitations were placed on the search strategy. The search strategy identified seven papers which were written in French, one study which was written in Polish, one study which was written in Spanish, and one study which was written in Portuguese. Studies not written in English were translated by independent researchers and screened using the outlined search strategy and inclusion criteria. The search strategy was re-run in February 2020, identifying one additional article.

During screening, one paper was identified which examined a sample of mothers who experienced breastfeeding aversion. It was decided to remove this paper due to associated feelings of shame which may have otherwise confounded findings (Morns, Steel, Burns, & McIntyre, 2020). Two papers involved samples of women who had a history of sexual abuse. These papers were excluded due to evidence suggesting that historic sexual abuse may affect parenting style and anxieties and may contraindicate breastfeeding comfort due to feelings of shame (Haiyasoso, 2019; Wood & Esterik, 2010). A further paper involved mother-infant dyads who had been separated shortly after birth due to medical emergency. This paper was excluded due to subsequent interruption of breastfeeding initiation in the first hour of giving birth (Phillips, 2013). Finally, one study involved a sample of refugee women. This study was excluded due to evidence suggesting that this particularly vulnerable group have exceptionally inadequate access to social and healthcare professional support which may have otherwise confounded findings (Lerseth, 2013; Madanat, Farrell, Merrill, & Cox, 2007). See Figure 1 for Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Moher et al, 2009) diagram.

[Figure 1]

*Quality assessment*

The Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields (SQAC; Kmet, Cook, & Lee, 2004) was used for quality assessment. The SQAC contains separate point-based checklists for quantitative and qualitative methodologies. Mixed methods studies were assessed using both checklists. Quality assessment was conducted by two researchers independently. Any discrepancies were discussed and if agreement could not be reached then a third member of the research team was consulted. Quality assessment framed suggestions made for future research.

*Data extraction*

Data extraction from the twenty included studies comprised: references; aims and/or hypotheses; inclusion and exclusion criteria; sampling method and characteristics; drop-out rate; design; location; methodology; outcome variables; descriptive statistics; analysis method; summary of guilt and/or shame findings; outline of guilt and/or shame definition; secondary findings; related keywords; and methodological comments. The following information was extracted from quantitative studies only: control for confounders; and exposure/outcome variable(s). Data extraction was conducted by two researchers independently. Any discrepancies were discussed and if agreement could not be reached then a third member of the research team was consulted.

*Analysis*

A narrative synthesis (Rodgers et al, 2009) of quantitative papers was conducted, due to the small number and heterogeneity of identified papers, to address research question a. Qualitative and quantitative studies were examined using framework synthesis (Ritchie, Lewis, Nicholls, & Ormston, 2013), to address research question b. Framework syntheses have been utilised in previous infant feeding literature (Thomson et al, 2015). Stages of conducting a framework synthesis included: familiarisation with methodology and results sections of included articles; construction of initial thematic framework; utilisation of framework to index and sort identified themes to address research questions; and reviewing and refining applied framework for coherence. Since infant feeding practices were clearly reported in all included literature, data was synthesised in relation to infant feeding method (i.e., breastfeeding and formula feeding mothers) to enable the comparison of guilt and shame experiences. For mixed methods papers, quantitative components were included in the narrative synthesis, and qualitative components and relevant quantitative components were included in the framework synthesis. Data sharing was not applicable to this article as no new data were created or analysed in this study.

*Results*

After removal of duplicates, the search strategy yielded four hundred and sixty-seven studies dating 1948-2017, across thirty-four databases (see Table 3 for tabulation of article frequencies by database, before and after removal of duplicates). The study selection process identified twenty articles, published between 1997 and 2017. Of included literature, thirteen studies examined guilt, three studies examined shame, and four studies examined both guilt and shame. No included quantitative literature analysed shame. Included studies came from the following developed countries: UK (eleven studies), USA (three studies), online, open internationally (three studies), Norway (one study), France (one study), and Sweden (one study).

Of included literature, twelve studies used qualitative methodologies. Data collection methods were as follows: five studies used semi-structured interviews, three studies used semi-structured interviews and focus groups, one study used semi-structured interviews with field observations, one study used a case study, one study used an auto-ethnographical approach, and one study used an online survey with open text responses. Of included qualitative literature, three studies used a longitudinal design, and nine studies used a cross-sectional design. Qualitative sample sizes ranged from (with n indicating the total number of participants involved in this form of data collection): nine to thirty-six for semi-structured interviews (n=111), fifty-one to seventy-eight for focus groups (n=192), two studies used single unit participation (n=2), and one study consisted of two qualitative online surveys, with five and forty-two participants. Total qualitative sample size was three hundred and eighty-eight. Given that only two included papers examined shame in relation to infant feeding outcomes, and neither of these included papers examined shame quantitatively, guilt and shame were grouped together in the framework synthesis, and results were split by infant feeding method.

Of the three included quantitative papers, two studies used a cross-sectional, online methodology and one study used a longitudinal, telephone questionnaire. Quantitative sample size ranged from fifty-three to six hundred and seventy-nine. Total quantitative sample size was one thousand, three hundred and thirty-three. The search strategy identified five mixed methods studies, four of which used the same dataset (Lee, 2007a, 2007b, 2007c; Lee & Furedi, 2005) using a structured questionnaire and semi-structured interviews. The fifth study involved quantitative analysis of telephone questionnaires and semi-structured interviews. Sample size for mixed methods papers ranged from: twelve to thirty-three for qualitative components (n=45), and eighty-six to five hundred and four for quantitative components (n=590). Total sample size for mixed methods studies was six hundred and thirty-five. See Table 4 for summary table of included literature.

[Table 4]

*Study Quality*

Missing statistical information (Chezem et al, 1997) and lack of inter-rater reliability testing (Crossley, 2009) may warrant caution regarding study credibility and transferability. Binary examination of guilt (Fallon et al, 2016b; Komninou et al, 2016) provides a reductionist view of this emotional experience, which lacks rich exploration of emotional experiences, and lack of survey item validity testing (Fallon et al, 2016b) questions the content validity of examined constructs. Studies with unrepresentative samples (Chezem et al, 1997; Fallon et al, 2016b; Komninou et al, 2016) also limits generalisability of study findings. Lack of provided definitions of guilt and/or shame in included literature (Asiodu et al, 2017; Chezem et al, 1997; Crossley, 2009; Dalzell, 2007; Fahlquist, 2016; Fallon et al, 2016b; Fox et al, 2015; Hvatum & Glavin, 2016; Komninou et al; 2016; Lagan et al, 2014; Lamontagne et al, 2008; Lee, 2007a, 2007b, 2007c; Lee & Fuerdi, 2005; Mozingo et al, 2000; Murphy, 2000; Spencer et al, 2014) and lack of conceptual use of terms is also problematic as it potentially limits construct validity of terms and transferability of findings.

In the current review, four included articles engaged in data splicing and had missing information regarding data analyses (Lee, 2007a, 2007b, 2007c; Lee & Fuerdi, 2005). This methodological issue was overcome in the narrative synthesis by considering sample characteristics and results as a single unit during analysis. Studies not reporting clear exclusion criteria (Fox et al, 2015; Thomson et al, 2015) was problematic because motherhood involves diverse and complex experiences which may influence infant feeding outcomes e.g., traumatic birth (Garthus-Niegel et al, 2017). By not utilising exclusion criteria, study findings were potentially vulnerable to sampling bias. Small study sample size (Lamontagne et al, 2008) and some missing information regarding: participant demographics (Crossley, 2009; Fahlquist, 2016; Thomson et al, 2015), and study sampling strategy and study design (Hanell, 2017), may also limit transferability of findings.

*Narrative synthesis of quantitative and mixed methods studies*

Multivariate analyses were given reporting precedence over bivariate, univariate, and descriptive analyses reported within included articles with quantitative components. Of the eight included quantitative papers, only two quantitative studies used multivariate analyses.

*Study descriptions and findings*

1. *Examine the relationship between guilt and/or shame and different infant feeding outcomes*

Three quantitative studies yielding thirteen analyses (Chezem et al, 1997; Fallon et al, 2016b; Komninou et al, 2016), and four mixed methods studies yielding one analysis (Lee, 2007a, 2007b, 2007c; Lee & Fuerdi, 2005) addressed research question a.

*Breastfeeding*

There were no significant differences between guilt scores of women with exclusive breastfeeding intentions and women with combination feeding intentions during pregnancy (Komninou et al, 2016). However, postnatally, risk of guilt was six times higher for combination feeders compared with exclusive breast feeders (Adjusted RRR: .17, 95% CI: .10, .27).

*Formula feeding*

Risk of guilt was seven times lower for formula feeding women who had had exclusive formula feeding intentions during pregnancy (Adjusted RRR: .14, 95% CI: .08, .26) and two times lower for women with combination feeding intentions (RRR: .48, 95% CI: .29, .79), compared with women who had had exclusive breastfeeding intentions in pregnancy but whom were exclusively formula feeding postpartum (Fallon et al, 2016b). Risk of guilt was four times lower for women who had exclusively formula fed since birth (Adjusted RRR: .45, 95% CI: .25, .79), and two times lower for combination feeders since birth (Adjusted RRR: .38, 95% CI: .21, .64) compared with women who initiated exclusive breastfeeding but whom were exclusively formula feeding postpartum (Fallon et al, 2016b).

In bivariate analyses, not meeting breastfeeding intentions was associated with significantly higher guilt compared with women who met antenatal goals when returning to work within one year postpartum (*p*=.004; Chezem et al, 1997). In descriptive analyses, 33% of exclusively formula feeding women with antenatal breastfeeding intentions felt guilty in relation to their infant feeding method (Lee, 2007a, 2007b, 2007c; Lee & Fuerdi, 2005).

*Summary*

Guilt was experienced more frequently by formula feeding mothers compared with combination feeding (Fallon et al, 2016b) and breastfeeding (Komninou et al. 2016) mothers. Guilt was also more pronounced when antenatal breastfeeding intentions were unmet (Chezem et al, 1997; Lee, 2007a, 2007b, 2007c; Lee & Fuerdi, 2005)

*Framework synthesis of qualitative, mixed methods, and quantitative studies*

Framework synthesis identified four themes split by infant feeding method (breastfeeding and formula feeding mothers), to answer research question b. The search strategy identified four studies which were included in the breastfeeding analyses (Asiodu et al, 2017; Fox et al, 2015; Hanell, 2017; Spencer et al, 2014), eleven studies which were included in the formula feeding analyses (Crossley, 2009; Fahlquist, 2016; Hvatum & Glavin, 2017; Lagan et al, 2014; Lamontagne et al, 2008; Lee, 2007a, 2007b, 2007c; Lee & Fuerdi, 2005; Mozingo et al, 2000; Murphy; 2000), and two studies which were included in both the breastfeeding and formula feeding analyses as they sampled across both feeding methods (Dalzell, 2007; Thomson et al, 2015). Each theme is presented alongside illustrative quotes. Where verbatim quotes are used, these retained the non-identifying label (e.g., pseudonym) used within the given study. Figure Two provides a diagrammatic overview of the thematic structure.

[Figure Two]

1. *Examine how guilt and/or shame are experienced differentially depending on infant feeding method*

Framework synthesis identified two major themes from six studies for breastfeeding mothers: “Under-prepared and ineffectively supported” and “Morality and perceived judgement”. Due to only two included studies examining experiences of combination feeding mothers, findings from combination feeding and exclusively breastfeeding mothers were collapsed into the category *breastfeeding mothers*.

*Theme one: Under-prepared and ineffectively supported*

Mothers perceived that health professionals ineffectively prepared them for postpartum breastfeeding challenges and postnatal experiences were consequentially often at odds with prenatal expectations (Fox et al, 2015). This disparity led to feelings of self-doubt, anxiety (Thomson et al, 2015), and undermined breastfeeding self-efficacy, “In the hospital they kept repeating that it shouldn’t be painful, if you are doing it right it shouldn’t hurt. And that wasn’t particularly helpful, because it was painful for me.” (*pg.6,* *Mother,* Fox et al, 2015).

Feeling unprepared for breastfeeding challenges also led to feelings of guilt (Asiodu et al, 2017) and shame (Hanell, 2017) when antenatal expectations were unreflective of postpartum experiences, “I broke down. It’s like oh I can’t make enough [breast milk] to feed my baby like that’s what I’m supposed to do…” (*pg.870,* *postpartum participant,* Asiodu et al, 2017), “I still want to breastfeed her until she is, at least breastfed exclusively until she’s five or six months…Because [otherwise] it’s one of those shame things.” (*pg.237, Veronica*, Hanell, 2017).

Breastfeeding women also felt shame in response to perceptions of over-involved care, and non-consensual breast handling by healthcare professionals (Thomson et al, 2015). Breastfeeding mothers would have instead preferred to receive more hands-off, practical support and also expressed a preference to have received more individualised infant feeding support (Dalzell, 2007). Breastfeeding mothers felt ineffectively supported by critical comments made by healthcare professionals about their infant and maternal shortcomings (for example, their breasts or nipples being ‘too big’ or ‘too small’), which was associated with feelings of shame, “[Midwife] literally just got hold of it [breast], squeezed it and went like that [demonstrating the action] I was mortified…” (*pg.38,* *Lorraine*, Thomson et al, 2015), “Staff should observe feeding; being shown sooner may have helped.” (*pg. 81,* *M18,* Dalzell, 2007).

*Theme two: Morality and perceived judgement*

In most included qualitative studies, breastfeeding mothers felt morally obliged to adhere to ‘breast is best’ discourse, which was associated with guilt when breastfeeding difficulties were experienced (Fox et al, 2015). Quantitative analysis also identified that guilt was equally likely to be experienced in association with internal as with external factors, with 37.6% of breastfeeding women experiencing internal (feelings of guilt originating from how one feels about their infant feeding method) and 32.7% of breastfeeding women experiencing external (feelings of guilt originating from how one perceives others to feel about their infant feeding method) guilt. Guilt was, however, also felt through both internal and external channels for 26.7% of mothers (Komninou et al, 2016). It was identified commonly in the framework synthesis that trying and failing to breastfeed were more morally acceptable than formula feeding from birth, and alternative feeding methods were often perceived as wrongful (Spencer et al, 2014), “I couldn’t help but feel that I was sort of, I wasn’t doing my job properly, if I didn’t at least give it my absolute best shot” (*pg.6, Mother,* Fox et al, 2015).

Formula feeding was equated with inadequate mothering (Dalzell, 2007) and was commonly associated with loss of maternal identity (Hanell, 2017) in the framework synthesis. Some mothers felt the need to defend their infant feeding choice to maintain positive maternal identities, if exclusive breastfeeding were not possible, “I mean giving him one formula bottle like every couple of nights, is that still exclusively breastfeeding?...I don’t like that because it makes me feel like, oh it’s not enough. But I know it’s enough because 99.99.99% of his meals are from my boob.” (*pg. 870, postpartum participant,* Asiodu et al, 2017), “There is definitely elements of you’re a better mother if you breast feed.” (*pg.53, M6,* Dalzell, 2007),

Perceived judgement influenced maternal feelings of self-blame. Indeed, many women feigned effortless breastfeeding experiences which were often at odds with their actual private experiences, in fear of being judged as a bad mother by healthcare professionals (Spencer et al, 2014) or by family members (Hanell, 2017). Judgemental comments regarding breastfeeding from family and friends (Fox et al, 2015) led to social sphere withdrawal (Thomson et al, 2015). Quantitative analysis also provided evidence for the relationship between guilt and social support networks, with 58.7% of breastfeeding women experiencing external guilt in relation to family, and 31.7% experiencing external guilt in relation to other mothers (Komninou et al, 2016). The following illustrative quotes support this argument, “The other midwives, they were all nice, they was all oh how are you getting on and that and she’s putting on weight, all fine all fine and I was thinking, it’s not though, she’s always not latching on properly...I didn’t want to cry and [healthcare professionals] to think I wasn’t coping” (*pg. 1080, Jenny*, Spencer et al, 2014), “…I started to cry in front of my dad too. […] Because I do want to be able to breastfeed. And be a good mother…[dad’s] not judging me, but I, it felt like that.” (*pg.241, Veronica*, Hanell, 2017).

Breastfeeding mothers resisted seeking help and often spoke of fearing being perceived as a failure. This was often discussed by women experiencing guilt in the context of breastfeeding pressure (Spencer et al, 2014). Lack of public breastfeeding exposure resulted in shame and contradicted breastfeeding efforts (Thomson et al, 2015). Several respondents spoke of avoiding help-seeking behaviour due to perceived breastfeeding pressure, “I daren’t say I’ve got problems because [other mothers] would go in to a whole ‘oh breast is best’...” (*pg.1080, Kelly,* Spencer et al, 2014), “I was more concerned with people looking and thinking…she should be [breastfeeding] somewhere behind closed doors…” (*pg.38,* *Ava,* Thomson et al, 2015).

*Formula feeding mothers*

Framework synthesis identified two major themes from nine studies which examined the experiences of formula feeding women: “Frustration with infant feeding care”, and “Failures, fears, and forbidden practice”.

*Frustration with infant feeding care*

Inconsistent guidance and support (Lamontagne et al, 2008) was perceived as frustrating and confusing (Lagan et al, 2014), and there was an expressed need for better quality in infant feeding care. Healthcare professionals were quick to blame mothers for breastfeeding difficulties, which led to feelings of guilt for women who were unable to breastfeed and who, subsequently, were formula feeding at the time of investigation (Fahlquist, 2016). Quantitative analysis also found that 64% of formula feeding women experienced external guilt in relation to healthcare professionals (Fallon et al. 2016b). Feeling undermined by healthcare professionals and publicly embarrassed was also mentioned by mothers experiencing guilt, “I felt awful, my daughter was crying, she didn’t eat enough, lost weight, I panicked all the time and didn’t know what to do. The child health center told me the problem was mine, I did something wrong…no one helped me, and everyone was just nagging about how good it is to breastfeed.” (*pg.235, Mother,* Fahlquist, 2016).

Lack of respect from healthcare professionals regarding maternal wishes to supplement with formula exacerbated feelings of guilt and shame (Hvatum & Glavin, 2017) and resulted in resentment being held towards healthcare professionals (Murphy, 2000), “My baby didn’t gain in weight but lost 750g, but even then I wasn’t allowed to give substitute. I got the understanding that there had to be a complete crisis first. Almost like they had to legalize it. It makes you feel even more unsuccessful.” (*pg.3149, Mother 8,* Hvatum & Glavin, 2017).

Mothers often felt frustrated with healthcare professional support (Murphy, 2000). Mothers also disliked time constraints experienced during care (Mozingo et al, 2000). Frustration with quality of care resulted in concealment of infant feeding method and provoked feelings of guilt (Lee, 2007b), “I was lying a lot, especially with the health visitor because every week…’still breastfeeding?’ It got to a stage when I was like, ‘yeah still, still doing a bit but giving [baby] the formula at night-time.’ Because it was just the same question and they make you feel guilty.” (*pg.304, Mother,* Lee, 2007b).

*Theme two: Failures, fears, and forbidden practice*

Women experiencing guilt often internalised feelings that they were letting their baby down and feared potential infant health consequences of formula supplementation (Fahlquist, 2016), whereas shame was attributed to the self and experienced for seemingly having failed in front of other mothers (Crossley, 2009). Formula feeding often led to dissociation from one’s maternal identity (Murphy, 2000) and defensiveness over infant feeding method (Lee & Fuerdi, 2005). Failing to breastfeed was also associated with self-blame (Mozingo et al, 2000) and postnatal depression (Thomson et al, 2015). Quantitative analysis also found that for formula feeding mothers, guilt was experienced more commonly in relation to internal feelings (30%) than in relation to external factors (12%). Guilt was, however, also felt through both internal and external channels for 55% of formula feeding mothers (Fallon et al, 2016b). The following participant accounts reflect these findings that formula feeding was linked with internalised perceptions of the self as having failed to achieve good mothering status, “It was all ‘Well, I breast fed for two years,’, ‘Well I breastfed for a year’…I said to Clare afterwards, they’ll never speak to me again because I’m not a real Mum, you know.” (*pg.307, Mother,* Murphy, 2000), “I ended up suffering from quite severe postnatal depression, I have always wondered…if I could have breastfed would it have happened.” (*pg.41,* *Jill.* Thomson et al, 2015).

Formula feeding mothers often avoided help-seeking behaviour and frequently spoke of fearing judgement for their infant feeding method from healthcare professionals and social support networks (Crossley, 2009; Lee & Fuerdi, 2005). Quantitative findings also demonstrated that 68% of formula feeding mothers experienced external guilt associated with other mothers (Fallon et al, 2016b). Prohibition of formula discussions also led mothers to feel that formula feeding was forbidden and that there was pressure to breastfeed (Crossley, 2009; Lee, 2007b), “The antenatal class I had attended was heavily biased towards breastfeeding. For instance, in the session on feeding, a flip chart was put up and we were asked to list the advantages and disadvantages of feeding babies in particular ways. The midwife only wrote down the advantages of breastfeeding and ignored anyone who mentioned bottle-feeding advantages.” (*pg.81, in text,* Crossley, 2009), “When no one talks about formula, and the paediatric nurse says that she cannot ‘promote’ formula, you feel like a criminal, like you are doing something illegal.” (*pg.236, Mother,* Fahlquist, 2016).

*Discussion*

This mixed methods systematic review aimed to address two research questions, *‘*Examine the relationship between guilt and/or shame and different infant feeding outcomes’ and, ‘Examine how guilt and/or shame are experienced differentially depending on infant feeding method’. A framework synthesis of qualitative and quantitative data and a narrative synthesis of quantitative data were utilised to address the research questions. The framework synthesis identified four key themes: ‘Underprepared and ineffectively supported’, ‘Morality and perceived judgement’ (breastfeeding); ‘Frustration with infant feeding care’ and, ‘Failures, fears, and forbidden practice’ (formula feeding).

*Research question a: Examine the relationship between guilt and/or shame and different infant feeding outcomes*

Guilt occurred more frequently among exclusively formula feeding mothers than combination feeders (Fallon et al, 2016b) and exclusive breast feeders (Komninou et al, 2016), respectively. All studies with quantitative components (Chezem et al, 1997; Fallon et al, 2016b; Lamontagne et al, 2008; Lee, 2007a, 2007b, 2007c; Lee & Fuerdi, 2007) found guilt was more pronounced in formula feeding women when breastfeeding intentions were unmet.

Previous reviews have found depression (Dennis & McQueen, 2009; Dias & Figueiredo, 2015) and anxiety (Fallon et al, 2016b; Fallon, Bennett & Harrold, 2016; Grigoriadis et al, 2018) to be related to formula supplementation and early breastfeeding cessation. The current review extends this work to other domains of negative affect known to be associated with poorer breastfeeding outcomes, namely guilt and shame. From a biological standpoint, depression and anxiety (Stuebe, Grewen, & Meltzer-Brody, 2013) are suggested to adversely affect hormones necessary for breastfeeding (Lonstein, 2007). Oestrogen plays an important role in the process of milk ejection during breastfeeding ([Uvnäs‐Moberg](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorStored=Uvn%C3%A4s-Moberg%2C+K) & Eriksson, 1996) and is lowered in women with postnatal depression (Harris, 1996). Similarly, women who do not breastfeed demonstrate elevated cortisol levels, heart rate, and lowered oxytocin in response to external stressors, compared with breastfeeding women (Cox et al, 2015). Given the link between shame and postnatal depression in the current review, biological theories underlying the relationship between negative maternal affect and poorer breastfeeding outcomes might extend to include the roles of guilt and shame.

*Research question b: Examine how guilt and/or shame are experienced differentially depending on infant feeding method.*

*Under-prepared and ineffectively supported*

Previous literature has found that antenatal breastfeeding preparation fails to adequately prepare mothers for common breastfeeding difficulties, which has a negative emotional impact when postnatal challenges are experienced (Hoddinott, Craig, Britten, & McInnes, 2012; Trickey & Newburn, 2014). The current review identified the theme “Under-prepared and ineffectively supported” which extends this evidence, finding that unanticipated and unaddressed breastfeeding challenges were associated with guilt and shame. Depicting a more realistic portrayal of common breastfeeding difficulties and providing strategies to overcome challenges may enhance maternal breastfeeding confidence and extend postnatal breastfeeding duration (Brown, 2016; Hoddinott et al, 2012; Trickey & Newman, 2014). Additionally, providing more balanced infant feeding guidance may allow mothers to make more informed decisions about their infant feeding status and help to minimise guilt and shame experiences (Appleton et al, 2018; Blixt et al, 2019; Ericson & Palmér, 2018).

Guilt and shame were also experienced by breastfeeding mothers in relation to receiving over-involved care and non-consensual breast handling by healthcare professionals, which was reflective of midwives providing support as ‘technical experts’ (Swerts, Westhof, Bogaerts, & Lemiengre, 2016). In line with current review findings, participants in Swerts et al’s (2016) study viewed ‘technical experts’ as paternalistic and preferred a ‘skilled companions’ approach to receiving infant feeding care. This links with a recent mixed-methods systematic review examining women’s experiences of Baby Friendly Initiative (BFI) compliant care in the UK, which found that health professional support was highly influential to women’s experiences of care but that current delivery in the UK may foster negative emotional experiences, including guilt, particularly for those who formula feed (Fallon, Harrold, & Chisholm, 2019). While midwives desire to be ‘skilled companions’, they often find it difficult to provide this support due to resource constraints and work environment barriers (Burns et al., 2013; Dykes, 2005; Mclelland et al., 2014).

*Morality and perceived judgement*

This theme is supported by existing literature highlighting that mothers frequently experience social and societal pressures to breastfeed through synonymous associations with ‘good mothering’ (Hunt & Thomson, 2017)).This can lead to feelings of guilt, failure, fears of being judged, and inhibition of help seeking behaviour (Regan & Brown, 2019; Taylor & Wallace, 2017; Williams, Donaghue, & Kurz, 2012; Williams, Kurz, Summers, & Crabb, 2013). It is therefore important to move away from moral-based language to minimise negative emotions for those experiencing breastfeeding difficulties or early breastfeeding cessation. No quantitative literature examined shame in relation to infant feeding outcomes. This is concerning, given both its associations with negative breastfeeding experiences in qualitative literature, and its associations with postnatal depression and help-seeking avoidance (Dunford & Granger, 2017). Future research should therefore aim to quantify the relationship between maternal shame and infant feeding outcomes.

*Frustration with infant feeding care*

Formula feeding mothers commonly experienced external guilt in relation to perceived ineffective healthcare professional support (Fallon et al, 2016b). Review findings were also reflected in existing literature suggesting that unbalanced and inconsistent formula feeding guidance was linked with feelings of frustration, confusion, shame, guilt, and abandonment (Almeida, Luz, & Ued, 2015; Cescutti-Butler, Hemmingway, & Hewitt-Talyor, 2019; Harrison, Hepworth, & Brodribb, 2018; Lakshman, Ogilvie, & Ong, 2010). Formula feeding mothers also expressed a desire for more information about safe formula supplementation (Appleton et al, 2018; Blixt et al, 2019; Ericson & Palmér, 2018). While it is important to promote and support breastfeeding, it is also necessary to ensure that formula feeding mothers have adequate emotional and practical support to feed their baby safely and responsively.

*Failures, fears, and forbidden practice*

Formula feeding mothers who experienced guilt were more prone to feelings of failure which were discussed in the context of ‘breast is best’ discourse. This may be explained by self-discrepancy theory, which proposes that maternal guilt and shame result from discrepancies between one’s actual and ideal self (Liss, Schiffrin & Rizzo, 2012). This suggests a need for a more flexible promotional message which dissipates an ‘all or nothing’ breastfeeding mentality and instead focuses on a more incremental ‘every feed counts’ approach to providing breastfeeding support (Braimoh & Davies, 2014; Brown, 2016; Símonardóttir, & Gíslason, 2018).

*Limitations*

Thequality of included studies limited the ability to form firm conclusions. The majority of included quantitative literature did not report statistical analyses in full (Chezem et al, 1997; Lee, 2007a, 2007b, 2007c; Lee & Fuerdi, 2005) and one study lacked scale validity testing (Fallon et al, 2016b), collectively suggesting caution should be taken regarding validity of findings. Some quantitative papers involved binary examination of guilt (Fallon et al, 2016b; Komninou et al, 2016). Binary examination of concepts is problematic as it provides a reductionist view of how guilt and shame are experienced within an infant feeding context. Future research should therefore aim to explore contributing factors and outcomes of guilt and/or shame, to gain a clearer narrative for these negative affective states within an infant feeding context.

Only two of the twenty included papers defined shame (Hanell; 2017; Thomson et al, 2015) and one paper defined guilt (Thomson et al, 2015), and both mixed methods and qualitative literature grouped guilt and shame in thematic analysis (e.g. Fahlquist, 2016). This is problematic due to the overlap between term definitions (Niedenthal et al, 1994) and the differing outcomes of guilt and shame (e.g. Hvatum & Glavin, 2016) which may question construct validity of concepts. Future research should therefore aim to create infant feeding specific definitions of guilt and shame to improve research homogeneity.

Some qualitative literature included unrepresentative samples of mainly White, highly educated, partnered, primiparous women of high socioeconomic status (Asiodu et al, 2017; Hvatum & Glavin, 2017; Fox et al, 2015; Lagan et al, 2014; Lamontagne et al, 2008; Mozingo et al, 2000; Murphy, 2000; Spencer et al, 2014; Thomson et al, 2015), limiting transferability of findings. Several included qualitative literature had some missing demographic information (Crossley, 2009; Fahlquist, 2016; Thomson et al, 2015). Given the role that demographic variables play in determining breastfeeding outcomes e.g., higher educational attainment, being multiparous and being partnered have been associated with increased chances of breastfeeding exclusively postpartum (Yngve & Sjöström, 2001), not reporting this information hinders the ability to form firm conclusions.

*Conclusion*

A mixed-methods systematic review synthesising the findings from twenty papers, examined how guilt and/or shame were related to different infant feeding outcomes, and examined how guilt and/or shame were experienced differentially depending on infant feeding method. Quantitative findings suggest guilt is experienced more frequently as breastfeeding exclusivity declines, especially when breastfeeding intentions are unmet. For breastfeeding mothers, guilt was experienced in relation to family and peers, whereas, for formula feeding mothers, guilt was experienced in relation to healthcare professionals and peers. Lack of quantitative exploration of shame in relation to infant feeding outcomes prompted suggestions for future research. Qualitative findings identified a need for more realistic, non-judgemental, and mother-centred support to minimise guilt and shame experiences for those who breastfeed. For formula feeding mothers, providing practical support about how to feed safely and providing emotional support to those who are unable to meet their breastfeeding intentions is critical for maternal wellbeing. A shift is also recommended from a ‘six months exclusive breastfeeding’ to an ‘every feed counts’ approach to providing breastfeeding support.

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*Table legends*

Table 1: Inclusion criteria for study selection, mapped on to PEO criteria

Table 2: Population Exposure Outcomes (PEO) for exploring guilt and shame in relation to infant feeding outcomes

Table 4: Summary table to demonstrate extracted information of included articles in narrative synthesis of quantitative studies and framework synthesis of qualitative and quantitative studies

*Figure legends*

Figure 1: PRISMA 2009 flow diagram identifying three stage systematic screening process for article inclusion

Figure 2: Diagrammatic overview of framework synthesis structure

*Appendices*

Appendix 1: Full electronic search strategy for PsycINFO

*Supplementary information*

Table 3: Frequency table to display articles identified from search strategy per database, before (and after) removal of duplicates