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PSYCHOLOGICAL EFFECTS OF BREASTFEEDING FOR MOTHERS-CHILD AND ITS RELATIONSHIP WITH ISLAM: A SYSTEMATIC REVIEW

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Abstract

Psychological Effects of Breastfeeding for Mothers-Child and Its Relationship with Islam: A Systematic Review. At least mothers recommend that all babies worldwide be exclusively breastfed for 6 to 24 months. However, very limited studies have examined the psychological effects of mother-child specifically for exclusive breastfeeding and related to the duration of breastfeeding in Islam up to 24 months. This article aims to review the literature on the relationship between the psychological effects of mother-child breastfeeding and Islam from the PubMed database in the last six years using the PRISMA method. As a result, four papers from five studies were found to be eligible for review. Such maternal-child psychological effects have been reported to be highly predictive such as anxiety, postpartum depression, neurological and emotional development, and maternal self-efficacy for breastfeeding, attitudes towards breastfeeding towards the duration of exclusive breastfeeding up to 24 months. It is related to the Islamic teaching that breastfeeding is associated with the belief system and Islamic values, which play an essential role in improving health education, moral and spiritual, and psycho-spiritual (physical, mental, intellectual, and heart. Research to date shows that the mother-child psychosocial effect is not only influenced by the duration of exclusive breastfeeding up to 24 months but can also be changed through the intervention and the experience of both. However, there are very limited studies that specifically examine the psychological effects of exclusive breastfeeding duration of up to 24 months. Interpreting the results of the available literature is difficult due to the various methodologies and definitions of breastfeeding duration and the small sample size. Further studies, in particular, longitudinal cohort studies are needed that examine the determinants of the psychological effects of breastfeeding duration and infant feeding methods from pregnancy to 24 months postpartum.

Keywords*: Psychological effects, mother-child, Islam, breastfeeding.*

Introduction

The influence of breastfeeding (lactation) has been widely associated with the welfare of children and mothers. Breastfeeding is helpful for children's physical and psychological status, such as a reduction in the risk of infectious and obese diseases, a decrease in blood pressure, and reducing cholesterol levels (Amiel Castro, Glover, Ehlert, & O'Connor, 2017; Krol & Grossmann, 2018; Swanson, Keely, & Denison, 2017), improved cognitive and motor performance (Krol & Grossmann, 2018; Zanardo, Bertin, Sansone, & Felice, 2017). Positive health results for physical health mothers include a decrease in blood pressure(Yu, Wells, Wei, & Fewtrell, 2019), breast and ovarian cancer risk (Bublitz, Bourjeily, Bilodeau, & Stroud, 2019; Jonas & Woodside, 2016) also to mother-child psychological health, including lower stress responses and better sleep (Caparros-Gonzalez et al., 2019; Krol & Grossmann, 2018; Mohd Shukri et al., 2019).

Studies have shown that the overall health benefits of breastfeeding increase with the duration and intensity of breastfeeding (Chantry, Howard, & Auinger, 2006; de Jager, Skouteris, Broadbent, Amir, & Mellor, 2013; O'Brien, Buikstra, & Desley Hegney, 2008; O'Brien, Buikstra, Fallon, & Hegney, 2009). World Health Organization (World Health Organization, 2009, pp. 3–4) and (the American Academy of Pediatrics, 2012) recommends that all infants be breastfed exclusively for the first six months of life, with breastfeeding lasting for the next two years. More than that, breastfeeding is a fundamental human right in Islam which strongly recommends completing the breastfeeding cycle for two years (Bensaid, 2019). However, only a small percentage of women worldwide meet this recommendation (de Jager et al., 2013). While, in Indonesia, only half of the children under the age of 6 months are fully breastfed, and only slightly more than 5% of children are still breastfed at 23 months of age (Karana, 2021). This means that almost half of Indonesian children do not receive the nutrition they need in the first two years of life. More than 40% of infants introduce complementary foods prematurely before 6 months of age, and the foods provided often cannot meet the infant's

nutritional needs (Kemenkes RI, 2019, pp. 135–136). Therefore, identifying the impact of breastfeeding for mothers and children influences scientific development related to both psychological and duration of breastfeeding in Islam.Given the proportion of mothers who do not adhere to the WHO global recommendations for exclusive breastfeeding for up to 23 months, especially when it is associated with breastfeeding in Islam for 24 months. There has been very little research into psychological predictors of exclusive breastfeeding duration up to 24 months. There is a large body of literature examining the effects of psychological effects on breastfeeding in general, but given the complexity of screening and the small proportion of studies achieving exclusive breastfeeding for up to 24 months, this can be a difficult topic to research. The current review aims to identify empirical studies from the last decade that investigated psychological effects associated with the duration of exclusive breastfeeding for up to 24 months in Islam. The following are the specific questions addressed in this review: *(1) What psychological effects for mother-child have been investigated as the correlation of breastfeeding duration, and is there any relationship with Islam (up to 24 months breastfeeding)? (2) what conclusions, methodological issues emerged, and future recommendations can be made based on the current research?* The PRISMA statement for systematic reviews served as the foundation for this review (Liberati et al., 2009).

Methods

The systematic literature review conducted uses PRISMA methods (participant, intervention, comparison, outcome, study design) (Liberati et al., 2009). The literature review then matched it by the review keywords from the PubMed database search engine.

Tabel I. Literature Review Keywords

No	Search strategy	Keyword
1	Title Medical Subject (psychological breastfeeding)	("*Psychological effect*" and "*breastfeeding*" (a) or "*breast feeding*" (b) "*lactation*" (c) or "*breast milk*" (d) or "*human milk*" (e))
2	Medical Subject title (breastfeeding in Islam)	"Islam" and "*breastfeeding*" (fa) or "*breast feeding*" (fb) "*lactation*" (fc) or "*breast milk*" (fd) or "*human milk*" (fe)
3	1 and 2 (combined search key)	("*Psychological effect*" and "*breastfeeding*" or "*breastfeeding*" *lactation* or "*breast milk*" or "*human milk*") and Islam (g))

The literature was reviewed from the PubMed database in the last six years. The planned publication date is the 2015-2020 year. Following PRISMA guidelines, all titles were screened, followed by a review of the abstract and content of the article. Then, to extract the data and assess the feasibility of the article, as shown in Figure 1.

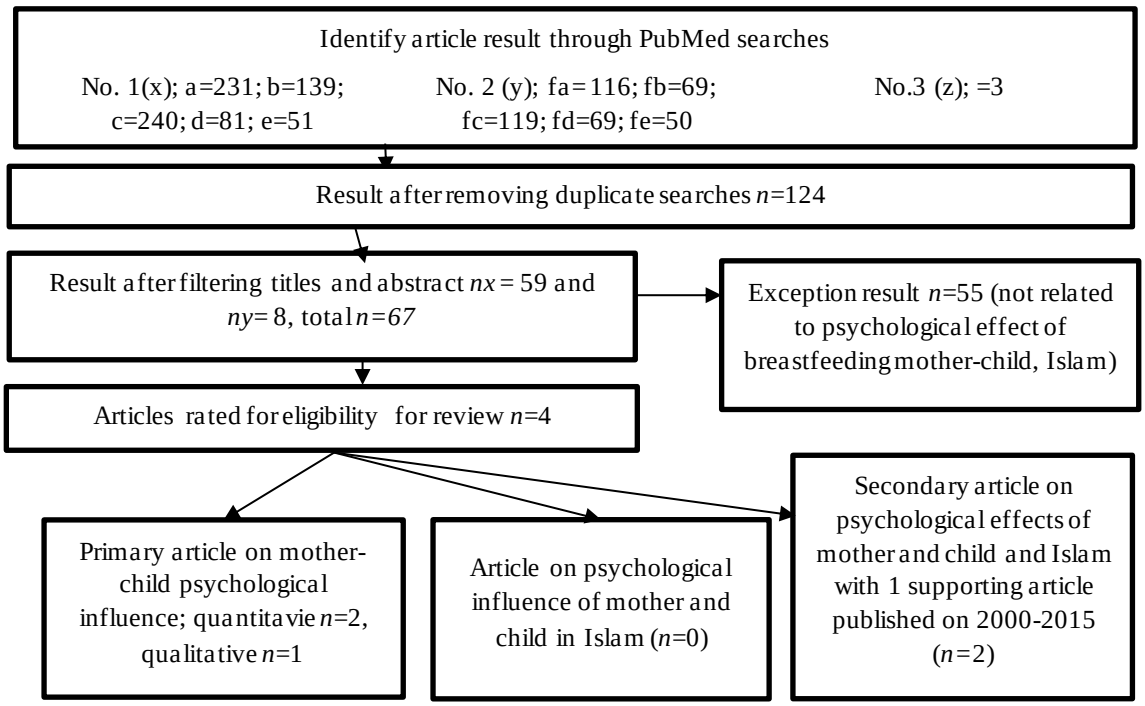

Figure 1. Literature Data Extractio

Results

Refer to the search strategy (Table 1), 67 references were identified and exported to endnotes. As shown in Figure 1, after removing duplicates and titles and abstracts screened according to eligibility criteria, five articles were eligible for inclusion in the analysis. Three quantitative studies reported the main results related to the psychological effects of breastfeeding: a high index of psychomotor development with exclusive breastfeeding and hemoglobin levels and infant birth height according to monthly breastfeeding, but no mental product for those who only breastfed for only four months, month after birthing (Jardí et al., 2018) or continuous breastfeeding for up to 24 months has psychological benefits for mothers and babies, namely maintaining mental health status (Abul-Fadl et al., 2005), breastfeeding by mothers to infants for six months has a lower risk of major depression, lower risk of illness, and lower symptoms of severe depression (De Mola et al., 2016). and the other presents qualitative data: breastfeeding impacts children's brain, cognitive and socio-emotional development. In mothers, research showed that breastfeeding affects the mood, affect, stress, and care of mothers (Krol & Grossmann, 2018), as well as qualitative data that Islam upholds breastfeeding as a fundamental human right for life and has an impact on morals and spirituality (Bensaid, 2019).

The study that presented preliminary results (empirical) on the psychological effects of breastfeeding involved mothers of healthy infants who has exclusively breastfed for more than six months. (Abul-Fadl et al., 2005; De Mola et al., 2016; Jardí et al., 2018). While the psychological state of mother-infant caused by other bioactive factors in breast milk, including DHA (*Docosahexaenoic acid*) and ARA (*arachnoid acid*) (Abul-Fadl et al., 2005; De Mola et al., 2016; Jardí et al., 2018; Krol & Grossmann, 2018) and striking psychological effects are the reduction of maternal anxiety and depression as well as increased cognitive and mental development for the child. One in five studies is a longitudinal study (Jardí et al., 2018), cohort study of the impact of breastfeeding and its psychological effects (De Mola et al., 2016), as well as testing the mixed method between breastfeeding and the psychological relationship of a mother, child, and father (Abul-Fadl et al., 2005). Three studies using recordings *Beck Depression Inventory* (BDI) (Abul-Fadl et al., 2005; De Mola et al., 2016; Jardí et al., 2018), two studies using *Mental Development Index* (MDI) (De Mola et al., 2016; Jardí et al., 2018), and primary studies conducted in Spain, Egypt, and Brazil. Table 2 shows a detailed description of all the studies, including the study's length and the results.

Only three studies in the review used self-report measures, and two used a literature review to scrutinize breastfeeding duration and psychological effects. In one study, participants completed questionnaires (De Mola et al., 2016) and in two others, face-to-face interviews were recorded at different time points to collect data (Abul-Fadl et al., 2005; Jardí et al., 2018) Only one study determined specific follow-up methods for breastfeeding durations up to 24 months (Abul-Fadl et al., 2005).

Outcome measures Of the five studies reviewed, four studies that examined exclusive breastfeeding or WHO recommended breastfeeding for 6 months postpartum and its correlation with mental health (Abul-Fadl et al., 2005; De Mola et al., 2016; Jardí et al., 2018; Krol & Grossmann, 2018). One study (De Mola et al., 2016) measures only 'full breastfeeding' up to 6 months postpartum related with symptoms severity and common mental disorders. One of the studies measured exclusive breastfeeding for up to 12 months postpartum with given nutritious complementary foods related to iron status, mental and psychomotor development (Jardí et al., 2018), and also (Krol & Grossmann, 2018) reviewed it related to neurobiological mechanisms. And one of the other studies that measured breastfeeding up to 24 months related maternal anxiety and depression scores, behavior, and health status of infants (Abul-Fadl et al., 2005). Given that little has been discussed about the psychological effects of breastfeeding on mother-child and Islam, (Bensaid, 2019) explore the peculiar perspectives on its relationship to the duration of breastfeeding in Islam, this study was deemed eligible for inclusion in this review.

*Psychological effect investigated***.** Four of the five studies reviewed examined the psychological effects of breastfeeding on the duration of exclusive breastfeeding (Abul-Fadl et al., 2005; De Mola et al., 2016; Jardí et al., 2018), only two of the studies reviewed examined the effect of breastfeeding on the duration of 12 months to 24 months postpartum (Abul-Fadl et al., 2005; Jardí et al., 2018). Depression and anxiety were examined by two studies (Abul-Fadl et al., 2005; De Mola et al., 2016) and psychomotor and cognitive development were examined by three studies (Abul-Fadl et al., 2005; Jardí et al., 2018; Krol & Grossmann, 2018). Two studies examined the effect of exclusive breastfeeding on mother-child (Abul-Fadl et al., 2005; Krol & Grossmann, 2018), and two studies examining attitudes and relationships towards exclusive breastfeeding only to children (De Mola et al., 2016; Jardí et al., 2018). One study examined the effect of mother-infant attachment on breastfeeding duration in Islam (Bensaid, 2019). However, in particular, a factor consistently examined in the literature is the psychological effect of breastfeeding on mental health (Abul-Fadl et al., 2005; Bensaid, 2019; De Mola et al., 2016; Jardí et al., 2018; Krol & Grossmann, 2018).

*Depression and anxiety for mother-child***.** Two studies examined the relationship between postpartum depressive symptoms and exclusive breastfeeding duration around 12 up to 24 months (Abul-Fadl et al., 2005; De Mola et al., 2016). The child who breastfed for six months or more had a lower risk of major depression, less severe depressive symptoms (BDI-II), and Generalized Anxiety Disorder and social anxiety disorder, event, showed a lower risk of the disease who have breastfed longer (De Mola et al., 2016). Furthermore, anxiety levels were significantly higher among mothers who stopped breastfeeding during the first postnatal year, whereas depression levels were higher among mothers who continued breastfeeding until the second year, owing to social support, lifestyle, and the impact of maternal self-efficacy. (Abul-Fadl et al., 2005). Mothers should be encouraged to continue breastfeeding into the second year of life to ensure their babies' optimal psychological development and to maintain their mental health.

Psychomotor and cognitive development of maternal breastfeeding. Three studies examined psychomotor and cognitive development (Abul-Fadl et al., 2005; Jardí et al., 2018; Krol & Grossmann, 2018). At 6 and 12 months of age, the child who had received BF for at least four months had a higher psychomotor development index (PDI). Furthermore, gestational age and body mass index (BMI) at six months were positively associated with PDI at six months, while hemoglobin levels at 12 months and birth height were positively associated with PDI and MDI at 12 months (respectively) there is no progression (Jardí et al., 2018). In addition, breastfeeding affects the brain, cognitive, and socio-emotional development of children (Krol & Grossmann, 2018). Furthermore, children who continue to breastfeed until the second year have better developmental and behavioral outcomes than those who stop breastfeeding during the first year (Abul-Fadl et al., 2005).

Psychological effect relation to Islam. The psychological effects of breastfeeding for mother and child still have shown that breastfeeding is very influential on socio-emotional due to hormonal increases in breastfeeding mothers, including reducing stress, depression, and anxiety. Although there is a change in the level of depression and anxiety for mothers who breastfeed until the second year, this is not influenced by breastfeeding but because of psychosocial, communication, and unseen motoric factors which do not significantly affect the neurological and emotional development of children. The psychological effects of exclusive breastfeeding for children affect children's neurocognitive and behavioral and mental development, namely increased brain development, lower general mental disorders, and low levels of high depressive symptoms. Another study suggested that children breastfed for up to 24 months or more also showed a lower disease risk. It is related to the Islamic teaching that breastfeeding is associated with the belief system and Islamic values, which play an essential role in improving health education, moral and spiritual, and psycho-spiritual (physical, mental, intellectual, and heart). Thus, this study shows that breastfeeding has a relationship between mother-child psychological effects and Islamic teachings in improving mother-child psycho-spiritual.

Table 2. Summary Of Literature Review

First author, country, Research aims/questions	Type and duration of breastfeeding	Outcome measure	Participant, Sample, & design/method	Measures used/ Analysis	Findings (Psychological effects for mother-child)
(Jardí et al., 2018), **Spain** ***Aims***: To analyze how breastfeeding during the first 4 months of life affects infant mental and psychomotor development (MPD) at 6 and 12 months in a group of healthy infants from a Mediterranean Spanish city considering many important potentials confounds.	Exclusively breastfeed (EBF) during their child's first six months with given nutritious complementary foods, while breastfeeding should continue until the age of two years or more.	Type of feeding, clinical history, anthropometry, iron status, and mental and psychomotor development was assessed and analyzed	***Participant***: parents, infants from birth until the age of 12 months ***Sample size***: 154 healthy infants at 6 months, 136 infants were assessed at 12 months. ***Design Method***: Longitudinal study. Data was collected through self-reported on the infants were recruited at birth in the public Hospital Universitari Sant Joan de Reus (Tarragona, Spain) and followed for 12 months.	***Measured used***: Using the *Bailey Scale of Infant Development* (BSID) based on the *Mental Development Index* (MDI) and *the Psychomotor Development Index* (PDI) ***Analysis***: Multiple Linear Regression models were applied adjusting for potential prenatal, perinatal, and postnatal confounds.	***Child***: who received BF for at least four months presented higher psychomotor development index (PDI) at 6 and 12 months of age. Also, gestational age and body mass index (BMI) at six months were positively associated with PDI at six months, and hemoglobin levels at 12 months and birth height were associated with PDI and MDI at 12 months (respectively) no progression. Mentally during this period (during four months of breastfeeding).
(De Mola et al., 2016), **Brazil** ***Aims***: To assess the association	The time of breastfeeding (EBF) in four categories, less than 1 month, 1–2.9 months,	To evaluate depressive symptoms severity and *Common*	***Participant***: liveborn were examined and their mothers interviewed	***Measured used***: *Mini-International Neuropsychiatric Interview* (MINI), *Mental*	***Infant-adulthood***: subjects who breastfed for six months or more had a lower risk of major depression (PR¼0.69 95% CI [0.51À0.95]), less severe depressive symptoms (BDI-II), and GAD and SAD. Those who have breastfed longer also showed a lower risk of

between breastfeeding and mental health outcomes in young adults.	3–5.9 months, and 6 months or more.	*Mental Disorders* (CMD), respectively.	(evaluated 3657 individuals) ***Sample size***: 5914 liveborn in 1982, from June 2012 to February 2013, they were interviewed and examined ***Mean age***: 30.2 years ***Design Method***: Cohort study with participants were invited (from early childhood) to visit (in 2012–13, at 30 years of age) the research clinic to be interviewed and examined. Data collected through the self-reported questionnaire (SRQ-20); validated for Brazil in assessing the presence of common mental disorders (CMD)	*Development Index* (MDI), *Generalized Anxiety Disorder* (GAD), and social anxiety disorder (SAD). In addition, this study used the *Beck Depression Inventory* (BDI-II) and Self-report Questionnaire (SRQ-20). ***Analysis*:** multivariable regression models to evaluate the association between breastfeeding and mental health outcomes	disease. However, it is undeniable that socioeconomic status (information about the characteristics of the home environment during childhood) also has a different influence. ***Mother***: this study did not have information on home environment characteristics during childhood nor maternal-infant bonding (due to unable to assess whether the protective effect of breastfeeding on mental health is attributable to the biological components of breast milk, to mother-infant bonding, or a combination of both).
(Abul-Fadl et al., 2005), a supporting article, **Egypt**. ***Aims***: To examine the relationship between maternal	The time of breastfeeding (EBF) in first life and 18-24 months post-delivery of EBF.	to examine the relationship between extended breastfeeding into the second	***Participants***: 60 mother-infant who had continued to breastfeed into the second year and 60 who had discontinued	***Measured used:*** The mothers were assessed for depression using the Beck Depression	***Child***: high maternal depression scores among breastfed infants had a non-significant effect on neurological and emotional development. ***Mother***: revealed that anxiety scores were significantly higher among mothers who stopped breastfeeding during the first postnatal year.

psychological status, continued breastfeeding, and child development, and emotional status.		year, maternal anxiety and depression scores in mothers, and the developmental milestones, behavior, and health status of their infants as a guide to optimal breastfeeding duration.	breastfeeding over the first year post-delivery. ***Sample size***: 120 mother-infant pairs in Egypt (18-24 months post-delivery free of major clinical diseases, developmental delays, or chronic disabilities) ***Design Method***: mixed-method (qualitative to assess breastfeeding practices, mother-infant and interactions, and other factors that may be relevant that are worth considering), qualitative for analysis. The data collection is through interviews and assessment of maternal affective traits.	Inventory (BDI) and STAI for anxiety state and trait. The infants were assessed by WHO standard methods for anthropometry, Denver developmental screening test 12 (DDST-R) for developmental milestones. ***Analysis***: multivariable regression models with chi-square, T-test and one-way, ANOVA test.	Meanwhile, depression scores were higher among mothers who continued breastfeeding until the second year due to the social support, lifestyle, and impact of maternal self-efficacy. The developmental and behavioral outcomes of children who are still breastfeeding until the second year are higher than those who have stopped breastfeeding during the first year. Mothers' high anxiety and depression scores were associated with poor developmental and behavioral outcomes of their children. This study concludes that continuous breastfeeding has psychological benefits for both mother and baby and may protect infants whose mothers suffer from depression. Mothers should be encouraged to continue breastfeeding into the second year of life to ensure optimal psychological development of their babies and maintain their mental health status. Periodic counseling of breastfeeding mothers to support, detect and reduce the adverse impact of their psychological level on breastfeeding status and very high breastfed babies.
(Krol & Grossmann, 2018), **Germany** ***Aims*:** To provide a broad overview of existing findings on the psychological effects of breastfeeding, highlighting the	The breastfeeding (EBF) in six months of exclusive breastfeeding, which is defined by breast milk as the only source of sustenance.	To discuss potential neurobiological mechanisms that undergird the reviewed psychological effects in children and mothers	***Sample:*** existed literature ***Design Method***: Literature review	***Analysis***: Content analysis	***Infants/children***: breastfeeding has an impact on children's brain, cognitive and socio-emotional development. ***Mother***: shows that breastfeeding affects mood, stress, and maternal care, but this study provides an incomplete review of empirical evidence.

important role that breastfeeding plays across several dimensions of psychological functioning.					
(Bensaid, 2019), **Turkey** ***Aims*:** To discuss the Muslim religious, moral and spiritual understanding of breastfeeding as a basic natural right	Breastfeeding is a unique process for providing infants with vital nutrition, ensuring that children grow and develop in a healthy manner which reduces chances of acquiring severe infectious diseases or mortality, and recommended to complete the full 2 years breastfeeding period	To explore the peculiar perspectives of Islamic law and ethics on breastfeeding, to present a relevant coherent overview	***Sample:*** existed literature ***Design Method***: Literature review	***Analysis***: Content analysis	breastfeeding is intertwined with Islam's system of beliefs and values and hence continues to play a vital role in improving health education and increasing rates of exclusive breastfeeding.

Discussions

This review summarizes the findings of four recent studies that investigated the psychological effects and their relationship to breastfeeding duration in Islam. The differences in the definitions used for the effects of breastfeeding, as well as the various methodologies used. The differences in outcome measures from exclusive breastfeeding to 24 months make it difficult to compare and integrate the findings. While this review summarizes the findings of each type of psychological effect investigated separately, it is important to note that the majority of the studies examined a combination of these effects. According to the findings, breastfeeding duration is determined by a combination of psychological factors that either support or hinder a woman's ability to breastfeed exclusively for the recommended 6 to 24 months postpartum.
1) What psychological effects for mother-child have been investigated as the correlation of breastfeeding duration, and is there any relationship with Islam (up to 24 months breastfeeding)?

Mother-child psychological effects such as anxiety, postpartum depression, neurological and emotional development, and maternal self-efficacy for breastfeeding, attitudes toward breastfeeding, and social support have all been linked to the duration of exclusive breastfeeding up to 24 months. To date, the most empirically supported psychological effect for children is the mental effect on neurological and emotional development. The findings of the studies included in this review consistently show that anxiety and depression levels are predictive of increased breastfeeding duration and emphasize the importance of the early postpartum weeks in the development of decreased anxiety and depression because a mother's self-efficacy for breastfeeding is important variable of breastfeeding duration. According to self-efficacy theory, it can predict: (a) whether a mother chooses to exclusively breastfeed or not; (b) how much effort he or she will expend; (c) whether he or she will have a self-enhancing or self-defeating mindset; and (d) how she will respond emotionally to breastfeeding difficulties (Bandura, 1977; Dennis, 1999). Breastfeeding self-efficacy theory identifies four ways to develop or improve self-efficacy: I mastery experiences (for example, succeeding on previous breastfeeding attempts); (ii) representative experiences (for example, witnessing another mother successfully breastfeeding); and (iii) verbal inducements (for example, verbal encouragement from others, friends, family, or health professionals); and (iv) physiological state (satisfaction, bonding) (Bandura, 1977; Dennis, 1999).Breastfeeding efficacy theory states that mothers with high self-efficacy are more likely to initiate breastfeeding, persist when difficulties arise, adopt self-enhancing thoughts, and are more likely to react positively and overcome adversity (Bandura, 1977; Dennis, 1999). All of the empirical findings presented here are consistent with self-efficacy theory and emphasize the concept of mastery experience. If mothers have difficulty breastfeeding in the early postpartum period, they are less likely to develop the confidence to overcome any future breastfeeding difficulties.(Abul-Fadl et al., 2005; Krol & Grossmann, 2018) both provide strong support for the general breastfeeding literature finding that postpartum maternal depression symptoms are strongly related to breastfeeding duration. However, an important factor in studies of the relationship between postpartum depression, infant feeding outcomes, and cognitive and communication development outcomes of children is the timing of onset of depressive symptoms. In most cases, the onset of postpartum depression occurred before the cessation of exclusive breastfeeding, according to (Abul-Fadl et al., 2005; Krol & Grossmann, 2018). This lends support to the timing of depressive symptoms during the duration of exclusive breastfeeding for up to 24 months, so that depressive symptoms come before the cessation of exclusive breastfeeding rather than the other way around.

Maternal attitudes towards breastfeeding, socioeconomic and social support were consistently reported as strong predictors of the child's psychological benefits for the duration of exclusive breastfeeding up to 24 months. Breastfeeding attitudes and social support of a mother can greatly predict the intensity and duration of exclusive breastfeeding. Moreover, the supplementary breastfeeding literature has shown that the timing of infant feeding decisions can predict a child's psychological outcome concerning the earlier to longer duration of exclusive breastfeeding (O'Brien et al., 2008, 2009; O'Brien & Fallon, 2013). However, all of the studies in this review measuring only effects on neurological and emotional development after birth suggest that the effects of maternal attitudes toward breastfeeding and social support may be greater than those shown in this review when measured antenatal. The literature also shows that breastfeeding duration and child psychological effects are highly correlated. This may reflect that motor development, the prevalence of generalized mental disorders (depression and anxiety), and lower disease risk disorders were influenced by the mother's duration of breastfeeding up to 24 months. Mothers who do not have the self-efficacy to believe that they can succeed in exclusive breastfeeding for up to 24 months are more likely to have neurological and emotional development delays in their children.

Although the attitudes of mothers and fathers towards breastfeeding and the benefits of breastfeeding predict outcomes for the duration of exclusive breastfeeding up to 24 months, there is a gap in the literature regarding how mothers' attitudes towards breastfeeding itself may influence the outcomes of mother-child psychological effects, especially when it is associated with Islam. In particular, it is not known whether mothers who do not enjoy or who have negative attitudes

towards the duration of breastfeeding are less likely to affect the psychological development of both than mothers who have positive experiences and attitudes towards the length of the duration of postpartum breastfeeding. On the other hand, breastfeeding is intertwined with Islam's system of beliefs and values and hence continues to play a vital role in improving health education and increasing rates of breastfeeding duration (Bensaid, 2019). *(2) what conclusions, methodological issues emerged, and future recommendations can be made based on the current research?* There are two major challenges in measuring the mother-child psychological effect associated with breastfeeding duration of up to 24 months, as recommended by Islamic guidelines. First, the lack of validated breastfeeding measures, as well as definitions of attitudes and duration of breastfeeding, results in a different mother-child psychological effect. The Beck Depression Inventory and the Mental Development Index, for example, are two general measures that are used, however, the questions developed from both were to measure a mother's level of depression in breastfeeding in general and to measure the mental level of children when they were school-aged, with the psychological effect of exclusive breastfeeding lasting up to 24 hours, the months may differ, even if the validity of validated breastfeeding measures, such as mothers' self-efficacy in breastfeeding, did not differ, individuals' beliefs in their ability to breastfeed at all may differ significantly from their beliefs in their ability to exclusively breastfeed for up to 24 months.

Furthermore, while validated measures such as the Beck Depression Inventory and the Mental Development Index are widely used in the literature, such validity and reliable measures are not readily available for some psychological constructs. For example, constructs such as intentions, attitudes, and means to exclusively breastfeed for up to 24 months are frequently measured using scales or questions developed by researchers that are not explicitly stated in the paper. Furthermore, it is unclear in the literature whether the psychological effect constructs measured adequately capture the experiences of mothers who exclusively breastfeed, or whether other factors are involved that have not been determined. Other psychosocial and psychological factors, such as the mother's body image, the amount of exposure a woman has to other women who breastfeed, and her family's beliefs about infant feeding, may also be factors associated with exclusive breastfeeding for up to 24 months, but these factors have not been studied in depth.

The very small sample size in the studies published to date is a final limitation of the reviewed literature. Although the sample size of most studies started was adequate, many mothers did not achieve their goal of exclusive breastfeeding for up to 24 months, so more research is needed to investigate the psychological effects of mother-child in the duration of exclusive breastfeeding for up to 24 months. There is a need for research that specifically examines exclusive breastfeeding for up to 24 months, possibly temporarily based on the (World Health Organization, 2009) definition of exclusive breastfeeding or full breastfeeding, and continued postpartum breastfeeding for the next 12-18 months. A prospective longitudinal cohort study of the psychological effects and methods of infant feeding during pregnancy and postpartum will provide the most comprehensive picture of the psychological effects that may lead to premature cessation of exclusive breastfeeding for up to 24 months. This is relatively new because few studies have tracked mothers and thus collected data during pregnancy and postpartum.

There is currently evidence to support the use of enhanced psychological effects to improve infant feeding outcomes. However, there needs to be more consistency in the literature's definition of the duration of exclusive breastfeeding up to 24 months, as well as measures designed specifically for exclusive breastfeeding up to 24 months, rather than breastfeeding in general. Furthermore, other psychological factors, such as locus of control and body image, have been shown in the breastfeeding literature to be important predictors of breastfeeding duration and effect. However, no studies to date have specifically examined these psychological effects for exclusive breastfeeding up to 24 months, so none were eligible for review in this review.

Conclusions

In conclusion, given the psychological effects of exclusive breastfeeding for up to 24 months for both mother and child, as well as the low rate of mothers meeting this recommendation, there is very little research that specifically examines the correlation of exclusive breastfeeding for up to 24 months postpartum. According to the current literature review, the psychological effects on the mother's ability to maintain exclusive breastfeeding for up to 12 and 18 months only have been highlighted. Breastfeeding's psychological effects, such as depression and anxiety, as well as psychomotor and cognitive development are very strong predictors of the effects of exclusive breastfeeding for up to 24 months. It is related to the Islamic teaching that breastfeeding is associated with the belief system and Islamic values, which play an essential role in improving health education, moral and spiritual, and psycho-spiritual (physical, mental, intellectual, and heart). To better understand the contribution of these effects to the success or failure of a mother's exclusive breastfeeding experience, more research with a broader range of psychological factors and effects, such as locus of control, body image and exposure, and beliefs surrounding infant feeding practices, is needed. Furthermore, improved and standardized methodologies, consistent definitions of the duration and attitude of exclusive breastfeeding up to 24 months, and measurement methods will help us better understand infant or child feeding practices

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