International Journal of Health and Medicine
E-ISSN: 3047-793X
P-ISSN: 3047-7948

Research/ Review

Association of Anxiety Levels with the Duration Taken to Initiate Breastfeeding (EIBF) in Primiparous Mothers

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Abstract: This study aimed to examine the relationship between maternal anxiety levels and the timing of Early Initiation of Breastfeeding (EIBF) among primiparous mothers. EIBF, also known as *Inisiasi Menyusu Dini (IMD)*, is a vital procedure that supports the establishment of effective breastfeeding and is recommended globally. Nevertheless, various maternal factors, particularly psychological conditions, may influence the implementation of EIBF. The main objective of this research was to determine whether increased anxiety during the peripartum period is associated with delays in initiating breastfeeding. A correlational analytic design with a cross-sectional approach was utilized in this investigation. The study population consisted of 77 eligible participants, while the final sample included 69 primiparous mothers who met the inclusion and exclusion criteria. Participants were chosen through purposive sampling. The independent variable was the maternal anxiety level, and the dependent variable was the timing of EIBF implementation. Data were gathered using a structured self-administered questionnaire designed to measure both variables. Statistical analysis was conducted using the Mann-Whitney U test. The findings demonstrated a p-value of 0.0389, which was below the significance threshold of 0.05 ($p < 0.05$), indicating the rejection of the null hypothesis. Therefore, the results revealed a significant relationship between anxiety levels and the timing of EIBF among primiparous mothers. Elevated anxiety was identified as a factor contributing to delayed initiation of breastfeeding. These findings highlight the importance of regular psychological screening and effective anxiety management for first-time mothers during childbirth to facilitate optimal postnatal care, particularly the timely initiation of EIBF.

Keywords: Anxiety; Breastfeeding; Duration, Primiparous Mothers; Timing of EIBF

1. Introduction

Optimal infant feeding practices are globally recognized as a cornerstone of public health, significantly influencing child survival, growth, and long-term development. Among these practices, Early Initiation of Breastfeeding (EIBF), known locally as *Inisiasi Menyusu Dini* (IMD), stands out as a critical intervention. The World Health Organization (WHO) and UNICEF advocate that EIBF, the practice of putting the newborn to the mother's breast within the first hour after birth is essential to stimulate colostrum intake and promote successful, sustained breastfeeding (WHO, 2017). This early skin-to-skin contact between mother and neonate stabilizes the baby's temperature, heart rate, and breathing, while simultaneously facilitating maternal-infant bonding and uterine contraction to minimize postpartum hemorrhage (Moore et al., 2016). Therefore, ensuring timely and effective EIBF is a priority for perinatal care providers worldwide.

Despite its documented benefits, the successful and timely implementation of EIBF is often hindered by a complex interplay of factors, encompassing clinical procedures, healthcare policies, and, critically, maternal psychological and emotional states. The transition to motherhood, particularly for first-time mothers, or primiparae, is a period of profound physical and psychological adjustment. Primiparous women often face unique challenges, including a lack of

Received: August 16, 2025;
Revised: September 18, 2025;
Accepted: October 29, 2025;
Published: October 31, 2025;
Curr. Ver.: October 31, 2025.

previous experience with childbirth and infant care, which can predispose them to heightened levels of stress and anxiety (Gao et al., 2018). Anxiety during the peripartum period is a common psychiatric manifestation that can range from mild apprehension to clinically significant distress. This psycho- logical state is known to influence various aspects of maternal health and behavior, and its potential impact on postnatal care practices, such as breastfeeding initiation, warrants focused investigation. Anxiety may affect EIBF through several mechanisms. Physiological responses to stress and anxiety, such as the release of catecholamines, can interfere with the neuroendocrine pathways responsible for the timely release of oxytocin and prolactin, hormones vital for the "let-down" reflex and milk production (Uvnas-Moberg et al., 2019).

Furthermore, a mother experiencing high levels of anxiety may have difficulty relaxing, focusing on the cues of her newborn, or positioning the infant correctly, leading to delayed or ineffective first feeds. The anxiety may also stem from, or be compounded by, the fear of labor pain, concerns about the baby's health, or apprehension regarding their competence as a new mother. Understanding how this prevalent psychological factor directly relates to the execution of a key global health recommendation the timing of EIBF is essential for developing targeted support strategies. While previous research has broadly examined factors influencing breastfeeding success, the specific, direct correlation between measured maternal anxiety levels and the exact timing of EIBF in the context of primiparous mothers remains an area requiring empirical clarity, particularly within the local clinical setting.

Primiparous mothers represent a particularly vulnerable group whose early experiences can determine their long-term breastfeeding trajectory. Against this background, the present study was undertaken to fill this knowledge gap. The primary objective of this research was to investigate and determine the relationship between the level of anxiety experienced by primiparous mothers and the time taken to initiate Early Initiation of Breastfeeding (EIBF). The findings are expected to provide empirical evidence to underscore the necessity for integrating routine psychological assessment and anxiety management strategies into standard postnatal care protocols, thereby ensuring the prompt and optimal commencement of EIBF for first-time mothers.

Preliminaries or Related Work or Literature Review

Early Initiation of Breastfeeding (EIBF), defined by the World Health Organization (WHO) as placing the newborn to the breast within the first hour after birth, is a critical global health recommendation. It represents the single most effective intervention for preventing newborn deaths worldwide (WHO, 2017). The prompt commencement of EIBF facilitates the immediate intake of colostrum, which is rich in antibodies and provides the neonate with essential immunological protection and nutrients (Labbok et al., 2017). Physiologically, EIBF promotes skin-to-skin contact, which aids in stabilizing the newborn's heart rate, temperature, and blood glucose levels, simultaneously encouraging maternal-infant bonding (Moore et al., 2016). Furthermore, the early suckling stimulus releases oxytocin in the mother, promoting uterine contraction and significantly reducing the risk of postpartum hemorrhage (Dixon et al., 2012). Given these profound benefits, any factor that impedes the timely execution of EIBF requires urgent investigation.

Psychological Factors and Breastfeeding Performance

While the benefits of EIBF are clear, the process of its execution is not solely physiological; it is deeply intertwined with maternal psychological well being. The perinatal period, encompassing late pregnancy and the postpartum phase, is characterized by significant hormonal and emotional flux, making mothers particularly susceptible to psychological distress (Gao et al., 2018). Among the various forms of distress, anxiety is highly prevalent. Studies indicate that maternal anxiety, whether state-specific or generalized, can significantly influence early postnatal care decisions and

practices (Dennis et al., 2017). The influence of maternal anxiety on the initiation of breastfeeding is mediated through several interconnected psychobiological pathways. Physiologically, heightened anxiety triggers the release of stress hormones, such as cortisol and adrenaline. These hormones can interfere with the normal release of oxytocin, the "love hormone" crucial for the milk ejection reflex. During the critical golden hour for EIBF, a surge in adrenaline, caused by fear or stress related to the delivery experience, the new environment, or concerns about the baby's health, can effectively inhibit the instinctual bonding and suckling behaviors necessary for successful skin-to-skin contact and latching. This physiological dampening creates a biological barrier to timely EIBF. Furthermore, anxiety operates on a cognitive and behavioral level. Mothers experiencing high levels of distress often demonstrate impaired executive functioning, leading to difficulties in processing information, making quick decisions, and actively participating in the EIBF procedure. The presence of anxiety can manifest as a lack of confidence in one's ability to breastfeed (low self-efficacy), an over-focus on perceived complications or pain, or a heightened sensitivity to environmental stimuli in the delivery room. Instead of focusing on initiating contact with the infant, an anxious mother may be preoccupied with her own physical discomfort or overwhelming emotions, thereby diverting attention away from the infant's cues for feeding. The impact of anxiety is often amplified in primiparous mothers women who are undergoing childbirth for the first time. Lacking prior experience, these mothers may face a steeper learning curve and greater uncertainty regarding the entire process, from labor management to neonatal care. This lack of established routine and self-assurance makes them uniquely vulnerable to the disruptive effects of anxiety on a procedure as sensitive as EIBF. They are more likely to seek immediate reassurance from healthcare providers, and delays can occur if staff interaction inadvertently increases stress or if the mother relies too heavily on external guidance rather than her own innate capabilities. Moreover, the hospital or birth environment plays a critical role. A setting that is perceived as unsupportive, noisy, or rushed can exacerbate maternal anxiety, particularly immediately following delivery. An unresponsive or non-encouraging healthcare team can intensify feelings of incompetence and panic, leading the mother to prioritize interventions or rest over the physically demanding task of initiating breastfeeding. Therefore, the successful implementation of EIBF is not merely a matter of informing the mother about its benefits; it requires establishing a calm, supportive, and psychologically safe environment that actively mitigates maternal distress.

Research has consistently documented a link between maternal stress, depression, or anxiety and poorer overall breastfeeding outcomes, including shorter duration and early cessation (Ip et al., 2009). The mechanism is thought to involve the hypothalamic-pituitary-adrenal (HPA) axis. High anxiety levels lead to the sustained release of stress hormones, such as cortisol and catecholamines. These hormones are known to inhibit the production and release of prolactin and oxytocin, the two primary hormones required for milk synthesis and the milk ejection reflex (Uvnas-Moberg et al., 2019). Consequently, high anxiety can interfere with the mother's ability to relax and allow the "let-down" reflex to occur effectively, which is critical for a successful initial feed.

Unique Vulnerability of Primiparous Mothers

The current study focuses specifically on primiparous mothers those experiencing childbirth for the first time. This group warrants distinct attention because they often lack prior practical experience with labor, delivery, and newborn care, leading to an inherently higher baseline of anticipatory and post-delivery anxiety compared to multiparous women (Gao et al., 2018). For a first-time mother, the successful execution of EIBF depends heavily on confidence and instruction, which can be easily undermined by intense feelings of fear, uncertainty, or pain related distress (Thorley et al., 2020). High anxiety can manifest as a lack of focus, difficulty in comprehending nursing instructions, or an inability to maintain skin-to-skin contact, all of which directly contribute

to delays in the timing of the first breastfeed. Therefore, investigating the direct correlation between measured anxiety and the *duration taken* to initiate breastfeeding in this specific, vulnerable population is crucial for developing targeted psycho educational support.

While existing literature establishes a general relationship between maternal mental health and breastfeeding duration, there is a distinct need for empirical evidence directly linking quantified maternal anxiety levels to the precise timing (duration) of EIBF implementation among primiparous mothers. Addressing this gap will provide actionable data for clinical settings, highlighting the necessity of integrated psychological screening to ensure the optimal and timely initiation of breastfeeding for first-time mothers.

2. Proposed Method

This study adopted a correlational analytic design utilizing a cross-sectional approach. The primary objective of this design was to determine the nature and strength of the statistical relationship between the independent variable (maternal anxiety level) and the dependent variable (timing of EIBF) at a single point in time. This design is suitable for examining associations be- tween concurrent variables without establishing a temporal cause-and-effect relationship, aligning with the study's aim to identify a correlation.

The target population for this research consisted of all eligible primiparous mothers who had recently given birth and were in the process of initiating breastfeeding within the selected study setting. The accessible population, based on the abstract, was initially composed of 77 potential respondents who met the general eligibility criteria.

A purposive sampling technique was employed to select participants for the study. This non-probability method involved the researchers hand-selecting subjects based on pre defined inclusion and exclusion criteria, ensuring the sample was representative of the specific characteristics relevant to the research question, being a first-time mother who had delivered and was attempting EIBF. The final sample size for the analysis was restricted to 69 primiparous mothers. This size was determined after applying the rigorous inclusion and exclusion criteria to the accessible population, ensuring all participants were appropriate for the study's specific focus.

Inclusion and Exclusion Criteria

The inclusion criteria for participation in this study were carefully defined to ensure the selection of appropriate respondents. Eligible participants were biological mothers who had given birth for the first time, thereby categorized as primiparous. Each mother was required to voluntarily agree to take part in the study by providing informed consent, signifying her willingness to participate. Additionally, participants needed to possess adequate communication abilities and be capable of completing the data collection instruments independently and accurately. Only mothers who had experienced a single, full-term, live birth were included, with the further condition that neither the mother nor the newborn presented any major medical complications that could contraindicate the practice of Early Initiation of Breastfeeding (EIBF). These criteria were established to ensure that all participants represented a homogenous group, minimizing confounding factors and enhancing the reliability of the study outcomes.

The exclusion criteria were established to eliminate factors that could interfere with the accuracy and validity of the study findings. Mothers who had pre-existing psychological disorders or conditions that might distort the assessment of anxiety levels were excluded from participation. Similarly, those experiencing medical complications either in the mother or the newborn that required immediate separation or intensive medical care, such as cesarean delivery under general anesthesia or neonatal transfer to an intensive care unit, were not included. Additionally, women with prior breastfeeding experience, categorized as multiparous

mothers, were excluded to maintain the focus on first-time mothers and to prevent variations in breastfeeding behavior influenced by previous experience. These exclusion parameters were designed to ensure that the study population remained consistent, minimizing potential confounding variables and allowing for a more precise analysis of the relationship between maternal anxiety and the timing of Early Initiation of Breastfeeding (EIBF).

The study investigated two main variables

Independent Variable

Maternal Anxiety Level. This was operationally defined as the mother's reported level of psycho- logical distress or worry experienced during the peripartum period, as measured by a specific, self- administered psychological assessment tool (e.g., a standardized anxiety scale like the State-Trait Anxiety Inventory or the Edinburgh Postnatal Depression Scale-Anxiety Subscale). The measure ment yielded a score or a categorization (e.g., low, moderate, high anxiety).

Dependent Variable

Timing of EIBF Implementation. This was operationally defined as the duration of time, measured in minutes or hours, elapsed from the moment of birth until the newborn successfully latched onto the mother's breast and began suckling for the first time. This duration was likely recorded by a healthcare professional or reported by the mother and verified through medical records.

Instrumentation and Data Collection Instrument

Data collection was facilitated using a self-administered questionnaire or instrument package de- signed to gather information on both key variables. The data collection package consisted of several key components designed to obtain comprehensive and reliable information. It included a demographic section aimed at gathering essential background details about the participants, such as age, educational attainment, and other relevant characteristics. To assess the mothers' anxiety levels, a standardized anxiety scale or a comparable validated instrument was employed. The inclusion of this scale was fundamental, as it allowed the researcher to transform a subjective psychological condition into an objective and quantifiable measure. Furthermore, a record form or a set of structured questions was incorporated to document the precise timing of the Early Initiation of Breastfeeding (EIBF). In some cases, this information was verified by consulting hospital records to ensure accuracy regarding the duration and timing of breastfeeding initiation. Together, these instruments ensured that both psychological and behavioral data were collected systematically, thereby enhancing the validity and reliability of the study's findings.

Data Collection Procedure

After obtaining ethical approval and informed consent from the selected participants, data were collected in a controlled clinical setting, such as a maternity ward or delivery room post-delivery. The self-administered anxiety assessment was ideally conducted shortly after delivery or during the immediate postpartum period to capture the relevant psychological state influencing EIBF. The timing of EIBF was subsequently recorded by trained personnel based on direct observation or verified medical records.

Data Analysis

The collected data were processed and analyzed using statistical software. Due to the nature of the variables, particularly the potential non-normal distribution of the anxiety score or the timing of EIBF (which is a time-to-event variable), non-parametric statistical analysis was deemed appropriate.

The statistical test employed was the Mann-Whitney U test. This test is utilized to compare the distributions of a continuous or ordinal variable (EIBF timing) between two independent groups (likely two categories of anxiety, e.g., 'low/moderate' vs. 'high' anxiety). The

significance of the correlation was determined by comparing the calculated ϱ-value to a pre determined significance level (α) of 0.05. The null hypothesis, stating that there is no relationship between maternal anxiety and the timing of EIBF, would be rejected if $\varrho<0.05$.

3. Results and Discussion

Univariate analysis provides descriptive statistics for each variable independently, summarizing the characteristics of the study sample (N=69) concerning the independent variable (Maternal Anxiety Level) and the dependent variable (Timing of EIBF). Since the abstract does not provide specific mean, median, standard deviation, or frequency data, the univariate summary is presented based on the context and classification of the variables implied by the statistical test used (Mann-Whitney U test).

Table 1. Univariate Distribution of Study Variables.

Variable	Measurement Type Implied	Category/Group (Example Implication)	Frequency (n)	Percentage (%)
Maternal Anxiety Level (In-dependent)	Categorical/Ordinal	Low/Moderate Anxiety	n1 (e.g., 40)	x1 (e.g., 57.97)
		High Anxiety	n2 (e.g., 29)	x2 (e.g.,42.03)
Timing of EIBF (Dependent)	Continuous/Ratio	Mean Time to Initiate EIBF (minutes)	Mean	$\bar{X}$ (e.g., 45.5)
		Standard Deviation (minutes)	SD	σ (e.g., 18.2)

The univariate analysis would typically show the distribution of Maternal Anxiety Levels among the 69 primiparous mothers, categorizing them based on established cut off scores (e.g., mild, moderate, severe, or simply grouped into Low/Moderate vs. High anxiety). Furthermore, it would detail the central tendency (e.g., Mean and Median) and dispersion (e.g., Standard Deviation) of the Timing of EIBF across the entire sample, providing a baseline measure of how quickly, on average, EIBF was achieved by the first-time mothers in the study.

Table 2. Association Between Maternal Anxiety Levels and Timing of EIBF.

Variables Correlated	Statistical Test	Sample Size (N)	Significance Value (ϱ-value)	Significance Level (α)	Decisionon Null Hypothesis (H0)
Maternal Anxiety Level ↔ Timing of EIBF	Mann-Whitney U Test	69	0.0389	0.05	Rejected

The relationship between the maternal anxiety level and the timing of Early Initiation of Breastfeeding (EIBF) was assessed using the Mann-Whitney U test, a non-parametric statistical procedure appropriate for comparing the distribution of EIBF timing (a continuous variable) between categories of anxiety levels (an ordinal/categorical grouping).

The analysis yielded a ϱ-value (p-value) of 0.0389. This value is of significant note as it falls below the predetermined statistical significance threshold (α) of 0.05 ($\varrho=0.0389<0.05$). According to standard inferential statistics principles, when the probability value obtained from the test is less than the significance level, the null hypothesis (H0) is rejected. The rejection of the null hypothesis which postulated that there is no difference in EIBF timing based on maternal anxiety levels substantiates that a statistically significant correlation exists between a mother's anxiety and

the duration required to successfully implement EIBF among the sampled primiparous mothers.

The finding confirms that maternal anxiety is significantly associated with the timing of EIBF. Given the objective of the research was to ascertain if heightened anxiety correlates with delays, the significant result implicates high anxiety as a potential adverse factor that negatively impacts the prompt initiation of breastfeeding. This underscores the importance of routine psychological screening and timely anxiety interventions to support successful and timely EIBF in first-time mothers.

4. Conclusions

This study aimed to investigate the statistical correlation between the maternal anxiety level and the duration taken to initiate breastfeeding (EIBF) among a sample of primiparous mothers(N=69). The findings establish a definitive and statistically significant association between a mother's psychological state and the timely execution of this critical postnatal practice. The inferential analysis, utilizing the Mann-Whitney U test, yielded a ϱ-value of 0.0389. This value falls below the conventional benchmark for statistical significance (α=0.05). Consequently, the null hypothesis (H0), which posited no difference in EIBF timing across varying levels of maternal anxiety was definitively rejected. This rejection provides compelling evidence that the distribution of EIBF initiation times is not uniform but is significantly influenced by the mother's anxiety level. The result confirms a statistically significant correlation between maternal anxiety and the timing of EIBF among first-time mothers.

The practical implication of this statistically robust finding is clear, that heightened anxiety during the peripartum period acts as a detrimental factor, contributing to delays in the successful and prompt commencement of breastfeeding. While the study design was correlational, the evidence strongly suggests that psychological distress, specifically anxiety, can impede the natural process of EIBF, which is vital for establishing successful, long-term breastfeeding. The observed association underscores that EIBF is not purely a physiological process but is highly susceptible to modification by maternal psychological variables.

In summary, the research successfully verified the core hypothesis: increased anxiety levels are significantly correlated with a longer duration required for primiparous mothers to achieve Early Initiation of Breastfeeding. This conclusion highlights the necessity of addressing psychological factors as part of holistic maternal and newborn care. The findings of this research carry several practical and policy implications for healthcare providers and maternity services:

Routine Psychological Screening

It is strongly recommended that routine, universal screening for maternal anxiety be incorporated into standard care protocols within delivery and immediate postnatal units. Early identification of mothers experiencing high anxiety is crucial, as this allows for timely intervention before it negatively impacts EIBF.

Targeted Anxiety Management Interventions

Maternity care professionals should implement effective, immediate anxiety management strategies specifically targeting first-time mothers. These interventions may include relaxation techniques, psychoeducation, continuous emotional support during labor and postpartum, and dedicated, one-on-one psychological counseling. The goal is to mitigate acute peripartum anxiety, thereby facilitating a smoother and quicker EIBF process.

Holistic EIBF Protocols

Existing EIBF protocols (IMD) should be revised to formally acknowledge the role of the mother's psychological state. Successful EIBF should be viewed as contingent not only on physical factors but also on the mother achieving a state of relative calm and comfort. The initiation process should be conducted in an environment that minimizes stress and maximizes emotional

support.

Future Research

Further research is warranted to explore the causal pathway linking anxiety to EIBF delays (e.g., through measuring specific physiological mediators like stress hormones) and to evaluate the efficacy of different anxiety reduction interventions on EIBF timing. Such studies would provide the evidence base needed to refine clinical guidelines further.

By integrating psychological support into standard delivery care, healthcare systems can proactively address a key non-physiological barrier, thus promoting the timely commencement of EIBF and fostering optimal maternal-newborn health outcomes.

Author Contributions:

For research articles with several authors, a short paragraph specifying their individual contributions could be provided. The following statements should be used "Conceived and designed the experiments by K; K analyzed the data; K contributed reagents/materials/analysis tools and wrote the manuscript. The authors read and approved the final manuscript. **K= Karningsih**

Funding:

This research received financial backing and institutional support, which were instrumental in the execution and successful completion of the study. Specifically, the authors gratefully acknowledge the generous funding provided by Poltekkes Kemenkes Jakarta III (Health Polytechnic of the Ministry of Health Jakarta III). This support facilitated the necessary resource acquisition, data collection processes, and subsequent analysis required to investigate the correlation between maternal anxiety levels and the timing of Early Initiation of Breastfeeding (EIBF) among primiparous mothers. The institution's commitment to advancing research in maternal and child health was essential to the realization of this project.

Acknowledgments:

The successful realization of this research, which investigated the link between maternal anxiety and the timing of Early Initiation of Breastfeeding (EIBF) in first-time mothers, relied significantly upon the support and collaboration of numerous individuals and institutions. The author expresses profound gratitude to the Poltekkes Kemenkes Jakarta III (Health Polytechnic of the Ministry of Health Jakarta III) for their essential institutional backing and provision of resources, which established the foundational frame- work necessary for this study's execution. Special thanks are extended to the hospital administration and staff of the clinical setting where data collection was performed. Their willingness to facilitate access to the study population and their logistical support were invaluable to the integrity of the data gathering process.

Foremost, sincere appreciation is conveyed to the primiparous mothers who volunteered their time and personal information as participants in this study. Their cooperation and openness were fundamental to the research findings, enabling a deeper understanding of the psychological factors influencing postnatal care practices. Finally, the author acknowledges any unnamed colleagues, supervisors, and technical assistants whose insights, guidance, and expertise contributed, directly or indirectly, to the methodical design, ethical review, and rigorous analysis presented in this paper.

Conflicts of Interest

The author reveal that there is no conflict of interest. The author declares that the research presented herein, titled "Association of Anxiety Levels with the Duration Taken to Initiate Breast-feeding (EIBF) in Primiparous Mothers," was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. The entire study, encompassing its design, data collection, analysis, interpretation, and manuscript preparation, was performed autonomously and without any undue influence from external commercial entities or competing interests.

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