

## Relationship between Anxiety and Breast Milk Expulsion in Lactating Mothers

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### ABSTRACT

**Background:** Breastfeeding is the process of giving mother's milk to babies from birth to two years. Exclusive breastfeeding can protect babies and children against dangerous diseases and strengthens the affection (bonding) between mother and child. However, the exclusive breastfeeding coverage rate is still low due to failure to breastfeed. One of the factors that influence failure in the breastfeeding process can be caused by not releasing milk. The smoothness of breastfeeding is strongly influenced by psychological factors, namely anxiety. This study aims to analyze the relationship between anxiety and the smoothness of breastfeeding in breastfeeding mothers in Slahung District, Ponorogo Regency.

**Subjects and Method:** A cross-sectional study was conducted in Slahung District, Ponorogo Regency in November 2022. A total of 83 breastfeeding mothers were selected for this study. The dependent variable is the smooth expulsion of breast milk. The independent variable is anxiety. The instrument used is a questionnaire. The data were analyzed by Chi-Square test and odds ratio (OR).

**Results:** Anxiety affects the smooth release of breast milk in nursing mothers. Breastfeeding mothers who experience anxiety are at risk of experiencing a milk ejection process that is not smooth as much as 26.18 times compared to breastfeeding mothers who do not experience anxiety, and these results are statistically significant (OR= 26.18; 95% CI= 3.20 to 214.12; p<0.001).

**Conclusion:** Anxiety affects the smooth release of breast milk in nursing mothers.

**Keywords:** anxiety, smooth milk production.

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### BACKGROUND

Breast milk is the main food for babies which contains a complete nutritional composition and is needed for their growth and development (Liliek Fauziah, 2020). Breast

milk is a natural source of nutrition for babies. Human breast milk contains special components that prevent malnutrition and offer optimal growth for infants (Martini et al., 2020). Breast milk is produced by the ma-

mmary glands, namely the alveoli cells. The milk that has been produced will flow into the lactiferous sinuses and gather in the lactiferous duct organs, then the breasts experience pressure and reflex release of milk (let down reflex) through both mother's breasts (Putri, 2020).

The WHO (World Health Organization) and the United Nations International Children's Emergency Fund (UNICEF) recommend that babies should only be given breast milk (ASI) for at least 6 months and continued breastfeeding until the child is 2 years old (Korompis, 2019). The government has regulated breastfeeding in Law Number 33 of 2012 to support exclusive breastfeeding mothers. However, even though breastfeeding is mandatory, it turns out that many mothers choose not to breastfeed their babies for several reasons. According to Aprilia 2011 (in Korompis, 2019) In the process of breastfeeding there are two important processes, namely the process of forming breast milk (milk production reflex) and the process of expressing breast milk (reflex let down), both of which are influenced by hormones regulated by the hypothalamus. several factors, namely the baby's weight at birth, frequency of breastfeeding, exposure to cigarette smoke, gestational age at birth, age and parity of the mother, stress and acute illness, IMD (Early Breastfeeding Initiation), alcohol consumption, breast care, contraceptive use, and nutritional status (Hastuti and Wijayanti, 2017). In premature babies, there is Immunoglobulin A and breast milk is the main source of Ig A but levels decrease with age (Handayani et al., 2012).

Breastfeeding mothers are mothers who give breast milk to babies from birth to two years of age from the breast. The results of research on the benefits of breastfeeding for the physical health of mothers include reducing blood pressure, reducing the risk of breast cancer and ovarian cancer as well as

for their psychological health, namely reducing stress and sleep which is increasing (Figueiredo et al., 2013). Breastfeeding is associated with improved infant health and immune development, fewer incidences of gastrointestinal disease and lower mortality than formula-fed infants. As well as providing basic nutrition for baby growth. Breast milk is a source of commensal bacteria which further improves infant health by preventing adhesion of pathogens and promoting beneficial microbial colonization of the gut. Breast milk is produced by the mammary glands i.e. in alveoli cells. The milk that has been produced will flow into the lactiferous sinuses and gather in the lactiferous duct organs, then the breasts experience pressure and reflex release of milk (let down reflex) through both mother's breasts (Putri, 2020). The calm mental and emotional condition of the mother greatly influences the smooth flow of milk. If the mother experiences stress, depressed thoughts, uneasy, anxious, sad, and tense it will affect the smoothness of breastfeeding (Riksani, 2012).

Anxious mothers will secrete less milk than mothers who are not anxious. Based on the results of the study (Iin Febrina, 2011) said that there is a relationship between the level of anxiety and the smoothness of breastfeeding in primiparous postpartum mothers. Efforts to keep breastfeeding running smoothly start from a mother's strong desire to provide the best nutrition, namely breast milk for her baby. Strong motivation will affect the physical and emotional mother to produce breast milk. Mothers who have strong and sincere desires and high affection, breast milk production can be stimulated. This study aimed to analyze the relationship between anxiety and the smooth release of breast milk in breastfeeding mothers in Slahung, Ponorogo Regency.

## SUBJECTS AND METHOD

### 1. Study Design

This study uses an observational analytic study design with a cross sectional approach. The location of this research is in Slahung District, Ponorogo Regency, East Java, and will be held in November 2022.

### 2. Population and Sample

The population in this study were all breastfeeding mothers in Slahung District, Ponorogo Regency. The sample size in this study was 83 samples using a simple random sampling technique.

### 3. Study Variable

The dependent variable was the smooth expulsion of breast milk. The independent was anxiety.

### 4. Operational Definition of Variables

**Expenditure of breast milk** is the process of releasing breast milk as measured by several indicators, namely scheduled or unscheduled breastfeeding time, condition of the mother's breast milk seeping or not, sensation in the mother, namely feeling tingly, swallowing sound and feeling tired, the baby's response remains fussy or not after being breastfed, BAK normal or abnormal, normal or abnormal bowel movements. Code 1 for breastfeeding is not smooth. Code 2 is for breastfeeding smoothly.

**Anxiety** is a feeling of anxiety, tension, fear, insomnia, intellectual, depressed feelings, somatic symptoms in muscles and sensory, cardiovascular symptoms, respiratory, gastrointestinal, autonomic symptoms and also behavior shown by breastfeeding mothers. Code 1 for anxiety. Code 2 for no anxiety.

### 5. Study Instrument

The instruments used in data collection were anxiety questionnaires and breastfeeding expenditure questionnaires which were distributed offline to breastfeeding mothers who were research subjects or samples. Data management techniques include editing, coding, data entry, cleaning and tabulating

techniques. Questions in the questionnaire included 14 questions about anxiety and 24 questions about breastfeeding.

### 6. Data Analysis

The data analysis method of this study uses univariate and bivariate analysis. Univariate analysis in the form of frequency distribution and percentage of each variable and bivariate analysis using the chi-square statistical test with a significance level of 5% ( $p = 0.05$ ) to determine the relationship between anxiety and the smoothness of breastfeeding.

### 7. Research Ethics

Research ethics namely with informed consent, anonymity, confidentiality. A research ethics permit approval letter was obtained from the Health Research Ethics Committee, Faculty of Medicine, Airlangga University, Surabaya, Indonesia, No.187/EC/KEPK/-FKUA/2022, on October 3, 2022.

## RESULTS

### 1. Characteristics of Sample

Table 1 shows that of the 83 subjects, the majority of breastfeeding mothers aged 20-35 years were 75 (90.4%), and 56 (67.5%) had normal deliveries. The gestational age at birth in this study was mostly in the term group of 66 (79.5%) people. Most of the subjects were mothers who did IMD as many as 49 (59.0%) people. The majority of subjects with maternal parity who had 1 child were 49 (59.4%) people, and used non-hormonal contraception as many as 52 (67.2%) people. Most of the subjects were mothers who did not have dietary restrictions as many as 51 (61.4%) people and their family members did not smoke as many as 49 (59.0%) people. Most of the babies at the time of study were aged < 6 months as many as 62 (74.7%) babies, with babies weighing 2500-4000 g as many as 65 (78.3%) babies.

### 2. Univariate Analysis

Univariate analysis in this study included anxiety and the smoothness of expressing

breast milk which can be seen in Table 2. Table 2 shows that the majority of breastfeeding mothers experienced anxiety as many as 13 (15.7%) breastfeeding mothers, and 34 (41.0%) experienced a process of ejecting milk that was not smooth. breastfeeding mothers.

**3. Bivariate Analysis**

Bivariate analysis was carried out to see the relationship between anxiety and the smoo-

thness of expressing milk in nursing mothers. Table 3 shows that anxiety has an effect on the smooth release of milk in nursing mothers. Breastfeeding mothers who experience anxiety are at risk of experiencing a milk ejection process that is not smooth as much as 26.18 times compared to breastfeeding mothers who do not experience anxiety, and this was statistically significant (OR= 26.18; 95% CI= 3.20 to 214.12; p<0.001).

**Tabel 1. Study subject characteristics**

Characteristics	Category	Frequency (n)	Percentage (%)
Maternal Age	20-35 Years	75	90.4
	>35 Years	8	9.6
Baby's age	< 6 months	62	74.7
	> 6 months	21	25.3
Type of Childbirth	Normal paravaginal	56	67.5
	SC	27	32.5
Birth Weight	<2500 gram	18	21.7
	2500-4000 gram	65	78.3
Gestational Age at Birth	Preterm	17	20.5
	Aterm	66	79.5
Early Breastfeeding Initiation	Yes	49	59.0
	No	34	41.0
Parity	1 child	49	59.4
	2-4 children	34	41.0
Contraception	Non-Hormonal	52	62.7
	Hormonal	31	37.3
Eating Abstinence	No	51	61.4
	Yes	32	38.6
Smoking Family	No	49	59.0
	Yes	34	41.0

**Tabel 2. Univariate analysis**

Variable	Category	Frequency (n)	Percentage (%)
Anxiety	Yes	13	15.7
	No	70	84.3
Smooth milk production	Smooth	49	59.0
	Not smooth	34	41.0

**Table 3. Bivariate results between anxiety and fluency in expressing milk in nursing mothers**

Variable Anxiety	Smooth milk production						OR (95% CI)	p
	No		Yes		Total			
	N	%	N	%	N	%		
Yes	12	92.3	1	7.7	13	100	26.18	<0.001
No	22	31.4	48	68.6	70	100	(3.20 to 214.12)	

## DISCUSSION

### 1. The relationship between anxiety and smooth milk expulsion

Based on the results of this study showed that most (84.3%) of the subjects had no anxiety. The results of this study also showed that the majority (59.0%) of the subjects had smooth breastfeeding. Anxiety is an emotion, a feeling that arises as an initial response to psychological stress and threats to values that are meaningful to individuals. Anxiety can be described as a feeling of uncertainty, doubt and helplessness, restlessness, worry, unrest which is often accompanied by physical complaints (Lilik, 2016). Anxiety is a major public health problem. Anxiety, like any class of mental disorders, is also associated with various medical conditions, exacerbating symptoms, when anxiety symptoms do not reach the criteria for a disorder, they can cause severe distress. (Christian Grillon, 2019)

Milk production is strongly influenced by psychological factors (Prasetyono, 2009). Postpartum stress conditions are experienced by 80% of women after giving birth. Feelings of sadness or gloom that hit the mother arise within two days to two weeks after delivery (Danuatmaja and Meiliasari, 2013). The condition of mothers who are easily anxious and stressed can interfere with lactation so that it can affect milk production. This is because stress can inhibit milk production (Kodrat, 2010). The higher the level of emotional disturbance, the less stimulation of the hormone prolactin is given to produce breast milk (Prasetyono, 2009). The mental and psychological factors of nursing mothers greatly influence the breastfeeding process and the smooth production of breast milk. Feelings of stress, pressure, and discomfort experienced by a mother can inhibit the amount of milk that comes out (Bahayatun, 2009).

Breastfeeding mothers must think

positively and relax so they don't experience anxiety and the mother's psychological condition becomes good, a good psychological condition can trigger the work of hormones that produce breast milk. The results of this study are in accordance with the results of research conducted by (Kamariyah et al. 2014) that there is a relationship between the psychological condition of the mother and the smooth production of breast milk, a good psychological state of the mother will motivate her to breastfeed her baby so that the hormones that play a role in milk production will increase because Breast milk production starts from the breastfeeding process and will stimulate milk production. Anxious conditions in postpartum mothers affect milk expenditure. Breastfeeding mothers should relax and think positively. A good mother's psychological condition can stimulate hormone work to produce breast milk (Aprilia and Krisnawati, 2017; Destri et al., 2022)

Factors that can affect breastfeeding failure due to not releasing milk are psychological factors (Mardjun, 2019). If the mother experiences anxiety, sadness, stress, depressed thoughts, unrest, or tension, it can affect the smooth flow of milk. Mothers who experience anxiety will secrete less milk compared to mothers who do not experience anxiety (Arfiah, 2018; Friscila et al., 2022).

### AUTHOR CONTRIBUTION

In this study, Martono Tri Utomo and Annisa Nur Rohma collaborated to create a conceptual framework and research methodology. Annisa Nur Rohma collected data. Risa Etika, Annisa Nur Rohma, and Woro Setia Ningtyas collaborated to analyze the data.

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The study was self-funded.

### CONFLICT OF INTERESTS

There is no conflict of interest in this study.

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