

## Original Research Article

# CORRELATION BETWEEN ANXIETY AND BREAST MILK PRODUCTION AMONG BREASTFEEDING MOTHERS IN PUBLIC HEALTH CENTER OF JAGIR, SURABAYA

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### Abstract

**Background:** The low coverage of exclusive breastfeeding in Indonesia is caused by several factors, one of which is anxiety. The mother feels anxious because she is unable to provide enough milk for her baby.

**Objectives:** The purpose of this study is to analyze the correlation between anxiety and breast milk production among breastfeeding mother in Public Health Center of Jagir, Surabaya.

**Methods:** The design of this study was observational analytic with the cross-sectional approach. The study population were all of breastfeeding mothers in Public Health Center of Jagir, Surabaya who met the inclusion and exclusion criteria. The sample of this study was recruited through purposive sampling as many as 67 mothers. Data were collected by using the State Anxiety Inventory Questionnaire and the breast milk production observational sheet. The results of Cronbach Alpha test for the State Anxiety Inventory Questionnaire was .619 and the breast milk production observational sheet was .711. Descriptive statistics and Spearman Rank Test with significance value less than .05 were used to analyzed data.

**Results:** The results showed: 1) most breastfeeding mothers experienced moderate anxiety (91.04%), 2) some breastfeeding mothers showed smooth milk production (61.19%), 3) There was a correlation between anxiety and breast production in breastfeeding mothers ( $p = 0.001$ ).

**Conclusion:** The more severe anxiety in nursing mothers, the production of breast milk becomes not smooth. Future studies are expected to analyze other factors that can affect breast milk production in breastfeeding mothers.

**Keywords:** Anxiety, Breast Milk Production, Breastfeeding Mother

## INTRODUCTION

Breast milk contains many nutrients that are needed by babies in the first six months of life (Widayanti, 2014). Mental and psychological factors of breastfeeding mothers have a great influence on the process of

breastfeeding and the smooth production of breast milk (Kamariyah, 2014). Anxiety experienced postpartum mothers will inhibit the production of milk and the resulting process should stop breastfeeding early (Sari, Salimo, & Budihastuti, 2017). The decline in milk

production influence on body weight infants (Nugraheni & Kosma, 2017).

World Health Organization (WHO) and The United Nations Children's Fund (UNICEF) recommend that babies should only be given breast milk for at least 6 months and continued breastfeeding until the child is two years old. Breast milk is not contaminated and contains many nutrients needed by babies (Kemenkes, 2014). In Southeast Asia, the achievement of exclusive breastfeeding shows a number that is not much different. In comparison, exclusive breastfeeding coverage in India has reached 46%, in the Philippines 34%, in Vietnam 27% and in Myanmar 24% and in Indonesia 27.1%. The low coverage of exclusive breastfeeding in Indonesia has also received attention from the government. One of them is the Exclusive ASI program which is a priority program, because of its wide impact on the nutritional status and health of children under five (Kemenkes, 2014).

Women who are breastfeeding are susceptible to anxiety symptoms, as they are dominated by environmental and hormonal factors. Environmental factors may occur in the event of marital problems, unwanted pregnancies, and a history of anxiety in themselves or their family members. It further shows that women with lower socioeconomic status are more prone to anxiety. In relation to socioeconomic status, anxiety can also occur due to increased burden of children and reduced life satisfaction (Puspitosari & Prasetya, 2007).

Hormonal changes in women can lead to increased anxiety because estrogen can modulate serotonergic function. Corticotrophin-releasing hormone, which decreases can increase anxiety (Puspitosari & Prasetya, 2007). Psychological stress affects the hypothalamus and then it will affect the pituitary gland to express adrenocorticotrophic hormone (AC-TH). This can eventually affect the hormone adrenaline (a hormone that affects stress) and cause cortisol to increase. When the amount of cortisol is high, milk production will be inhibited (Christian, 2012). The purpose of this study is to analyze the correlation between

anxiety and breast milk production among breastfeeding mother in Public Health Center of Jagir, Surabaya.

## **METHODS**

### *Study Design*

The design of this study was observational analytic with the cross-sectional approach.

### *Setting*

The study was conducted in Public Health Center of Jagir, Surabaya on April 2020 and implemented via online.

### *Research Subject*

The population in this study were all breastfeeding mothers in Public Health Center of Jagir, Surabaya who met the inclusion criteria: 1) the age of the mother 21-40 years, 2) the age of the baby 0-1 years, 3) the condition of the mother's nipple protruding, 4) the suction reflex of the baby is good, 5) the mother able to read and use gadgets, 7) mothers are willing to be investigated and sign informed consent. Exclusion Criteria: 1) babies who are given formula milk. The sample of this study was recruited through purposive sampling as many as 67 mothers.

### *Instruments*

Data were collected by using the State Anxiety Inventory Questionnaire for measuring anxiety (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) consists of 20 question items, there are statements that indicate the existence of anxiety classified in favorable items and statements that indicate the absence of anxiety classified as unfavorable (Mardjun, Korompis, & Rompas, 2019). The reliability test of this questionnaire obtained a Cronbach's Alpha value .619, which means a reliable questionnaire. An instrument for measure breast milk production using the breast milk production observational sheet (Budiarti, 2009) consists of 14 items with Cronbach's Alpha .711, which means a reliable questionnaire. The questionnaires are distributed via Google forms online. Researchers distributed only to e-mails

that have been given by respondents and limited to only one response to one e-mail, thus preventing double filling on the Google form.

*Data Analysis*

Data analysis on this study used Spearmen Rank Test with significance value less than .05.

*Ethical Consideration*

This study has gone through an ethical test from Health Research Ethics Commission of

Nahdlatul Ulama University, Surabaya with Number 103/EC/KEPK/UNUSA/2020. When conducting the data collection, the researcher had asked beforehand about the willingness of the respondents in participating in this study. Researchers have also explained to respondents that the data obtained from this study will be used properly and guarantee the confidentiality of personal data of respondents.

**RESULTS**

*Characteristics of Respondents by Age, Educational, Parity, and Occupational*

**Table 1.** Distribution of Frequency of Respondents by Age, Educational, Parity, and Occupational in Public Health Center of Jagir, Surabaya on April 2020.

Characteristics	Number (n)	Percentage (%)
Age		
21-30 years old	44	65.7
31-40 years old	23	34.3
Educational		
Low	1	1.5
Higher	66	98.5
Parity		
Primipara	31	46.3
Multipara	36	53.7
Occupational		
Working	32	47.7
Non-working	35	52.3

Sources: Primary Data of Questionnaire, 2020.

Based on the data in table 1, it found that the majority of respondents aged 21-30 years old were 44 respondents (65.7%), educated at higher level of education were 66 respondents (98.5%), most of the parity is multipara with 36 respondents (53.7%) and most of them do not work as many as 35 respondents (52.3%).

*Analysis of Relationships between Anxiety and Breast Milk Production among Breastfeeding Mothers in Public Health Center of Jagir, Surabaya*

**Table 2.** Analysis of Relationships between Anxiety and Breast Milk Production among Breastfeeding Mothers in Public Health Center of Jagir, Surabaya on April 2020.

Anxiety	Breast milk production		p-value	Koeff. corr.
	Smooth	Non-smooth		
Mild	1	0		
Moderate	40	21	.001	-.381
Severe	0	5		

Sources: Primary Data of Questionnaire, 2020.

Based on table 2 above showed that most respondents showed moderate anxiety were 61 respondents (91.0%) and the majority of respondents showed smooth milk production were 41 respondents (61.2%). Based on the data above, it was found that there was a correlation between anxiety and breast milk production among breastfeeding mothers ( $p < .001$ ,  $r = -.381$ ).

## DISCUSSION

### *The Anxiety Level among Breastfeeding Mothers*

The results of observation of anxiety with SAI showed that almost all mothers (91.0%) had moderate anxiety. Anxiety in nursing mothers is caused by several factors, including age, education, and occupation. (Kamariyah, 2014). Most of the mothers who experience anxiety are in the age range of 21-30 years. Age factors determine maternal conditions and are related to conditions during pregnancy, childbirth and breastfeeding (Mardjun et al., 2019). The age factor is an important factor in making the decision to give exclusive breastfeeding, the more mature the more mature it is in thinking and determining what is best for mother and baby. Most of the mothers showed still experiencing anxiety even though the age is quite mature, this is due to some mothers who have no experience in breastfeeding babies

Education affects the behavior of a person, who is more educated will know better how to adjust to the adjustment to enter a new phase (Kamariyah, 2014). In reality though mostly high but they still have anxiety because higher education does not guarantee maturity in thinking

Most of the respondents are primipara, which is 46.3%. This is consistent with the study of Mardjun et al (2019) that the level of anxiety in primipara is higher than multipara. Most primiparous mothers worry about how their lives will be when caring for and caring for their babies. Primipara mothers still need to adapt to their situation after the delivery process while for multipara mothers are accustomed to the presence of new family members.

More than half of the respondents did not work (52.3%), where the work factor is a factor that affects the anxiety of breastfeeding. Housewives usually lack the latest information in particular about the health because they only

interact with the environment of his home course (Kamariyah, 2014). This is not in accordance with research from Puspitosari & Prasetya (2007) that there is no significant difference in the level of anxiety between breastfeeding mothers who are working and breastfeeding mothers who are not working. mothers have limited time between their many tasks so they need support from the work environment (Dewi & Windarti, 2017). In fact, working mothers also experienced anxiety because they were afraid that there would be no time to milking breast milk while working, was not supported by the work environment, and the workload was high.

Some respondents stated that they experienced anxiety during pregnancy. Anxiety in nursing mothers is also influenced by psychological conditions during pregnancy and family economic factors (Flaherman, Beiler, Cabana, & Paul, 2016). Many other factors need to be investigated to determine the cause of anxiety in breastfeeding mothers.

### *The Breast Milk Production among Breastfeeding Mothers*

The production of breast milk in most of the respondents showed smooth (61.2%). The smooth production of breast milk is seen from the baby indicator and the mother indicator. The indicators of this maternal factor that are seen are through breast tension, let down reflexes work well, this indicates the work of the hormone oxytocin which causes the occurrence of letdown reflexes also works well (Budiarti, 2009).

Most respondents in the age range of 21-30 years have non-smooth milk production. This is not in accordance with Budiarti's research (2009) which states that age is one of the factors that can affect breast milk production, mothers whose age is younger or less than 35 years will produce more breast

milk compared to mothers who are older. At this time younger women may perceive breastfeeding as being able to change the appearance of the breasts to be unattractive, so to maintain the shape of the breasts, they prefer not to breastfeed. This research is dominated by respondents with higher education, where mothers with higher education have more knowledge about breastfeeding. But the fact is that many have non-smooth milk production. This is not in line with Nuliawati's research (2010) which states that there is no relationship between education and milk production.

In this study most of the respondents did not work. Mothers who are not working experience fatigue in carrying out household tasks so that it affects milk production (Mardjun et al., 2019). On the other hand, working mothers are more enthusiastic about finding information about breastfeeding from books, the internet, or midwives.

In this study, milk production was not smoothly dominated by primipara, but there were also multiparous mothers who experienced non-smooth milk production. This is supported by Nurliawati's research (2010) which shows that parity factor has no relationship with milk production in breastfeeding mothers.

#### *The Relationship between Nurse's Knowledge about Nursing Care and Patient's Satisfaction*

More than half respondents who experience anxiety, both moderate and severe anxiety, experience non-smooth milk production. Spearman rank test results show  $p$  value = 0.001 which means there is a significant relationship between anxiety with breastfeeding production of breastfeeding mothers. This is in line with Mardjun's research (2019) which states that there is a relationship between anxiety and milk production in postpartum mothers.

Anxiety experienced by breastfeeding mothers can reduce the duration of breastfeeding. The anxiety starts at two weeks postpartum, and will have an impact on

breastfeeding, most mothers who experience anxiety will provide additional formula milk at 2-6 months old babies (Flaherman et al., 2016)

Factors that may inhibit the production of oxytocin is fear, anxiety, sadness, anger, disgust. If the mother is stressed or anxious there will be an obstacle from the letdown reflex. This occurs due to the release of epinephrine which causes vasoconstriction from the alveoli blood vessels, so that oxytocin is inhibited to reach the target organ namely myoepithelium. As a result of letdown reflexes that cause imperfect flow of milk which is not optimal which causes dams of breast milk and will eventually inhibit the hormone prolactin to produce milk (Nurliawati, 2010).

#### **CONCLUSION**

Based on the results of the study found that all breastfeeding mothers experience anxiety, but the most is moderate anxiety, all breastfeeding mothers experience anxiety, but the most is moderate anxiety, and more severe anxiety in breastfeeding mothers, the production of breast milk becomes not smooth.

#### **SUGGESTIONS**

Future studies are expected to analyze other factors that can affect breast milk production in breastfeeding mothers and analyze nursing interventions that can be given to breastfeeding mothers who experience anxiety thereby increasing breast milk production.

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#### **DECLARATION OF CONFLICTING INTEREST**

The authors declare that they have no conflict of interest.

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## AUTHOR CONTRIBUTION

**Yurike Septianingrum:** Designed the study, collected and analyzed data, contributed to the interpretation to the result, and wrote final manuscript.

**Nety Mawarda Hatmanti:** Collected and analyzed data, developed the instruments, and drafted the manuscript.

**Andikawati Fitriasaki:** Collected and analyzed data, contributed to the interpretation to the result, and drafted the manuscript.

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