

# The relationship between anxiety levels and breast milk production in postpartum mothers

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## ABSTRACT

Exclusive coverage of breast milk (ASI) at RSUD dr. Abdul Rivai Berau in 2021 was 62.44% and in 2022 it decreased to 46.24%, this can be caused by psychological factors experienced by postpartum mothers in the form of anxiety which inhibits the release of breast milk. To determine the relationship between anxiety levels and breast milk production in postpartum mothers at RSUD dr. Abdul Rivai Berau. This type of research is quantitative with analytical survey research and cross sectional design. The population is postpartum mothers with normal delivery at RSUD dr. Abdul Rivai Berau in September 2023 numbered 72 people, based on the Slovin formula with a sample of 42 people. The instruments used in the research were the Taylor Manifest Anxiety Scale anxiety scale questionnaire which was modified from Ameliasari's (2019) research and the breast milk excretion observation sheet. Data analysis used the Chi Square test. The level of anxiety in postpartum mothers at RSUD dr. Abdul Rivai Berau mostly had mild anxiety at 17 respondents (40.5%), while 10 respondents (23.8%) had moderate anxiety. Expression of breast milk in postpartum mothers at RSUD dr. Abdul Rivai Berau mostly had abnormal breast milk production of 22 respondents (52.4%), while 20 respondents (47.6%) had normal breast milk production. There is a relationship between anxiety levels and breast milk production in postpartum mothers at RSUD dr. Abdul Rivai Berau ( $p$  value =  $0.048 < \alpha: 0.05$ ). There is a relationship between anxiety levels and breast milk production in postpartum mothers.

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## INTRODUCTION

*Postpartum* is the period or time from when the baby is born and the placenta comes out of the uterus, until the next six weeks, accompanied by the recovery of organs related to the womb, which experience changes such as injuries and so on related to childbirth (EN Sari, 2021; Tulas et al., 2017). The post partum period is a time when the mother experiences changes in her role (Ernawati et al., 2019; Ningrum, 2017). Independent care after giving birth that is still not

compliant (Salamah & Prasetya, 2019) related to nutrition related administration Mother's Milk (ASI) and breastfeeding. Babies who are not breastfed can experience dehydration and growth and development problems (Ramlah, 2021). Which one Breast milk is a fluid secreted by the mother's breast glands in the form of natural food or the best, nutritious and high-energy milk produced during pregnancy. (Wulandari & Kurniati, 2023; Yusmanita & Fauziah, 2022).

World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) recommend that children should only be given breast milk for at least 6 months and continue breastfeeding until the child is 2 years old. (Ariani, 2022). Impact Children who do not receive exclusive breast milk are vulnerable to infection, digestive disorders and the possibility of stunting (Ministry of Health, 2020). Exclusive breastfeeding coverage according to WHO (2023), worldwide data is only around 36% during the 2007-2014 period, then in 2017 it was found that 84.06% of mothers exclusively breastfed their babies and this decreased in 2018 to 41% (Prabasari et al., 2023). This figure is still below the Sustainable Development Goals (SDGs) target of 50%. Achieving Exclusive Breastfeeding in Indonesia in 2018 it was 68.74%, in 2019 it decreased to 77.69% and increased again in 2020 to 69.62% (WHO, 2023). Exclusive breastfeeding coverage in Indonesia in 2021 is 69.7% and in 2022 it will decrease to 67.96% (WHO, 2023).

Exclusive breastfeeding coverage in East Kalimantan Province in 2020 it was 71.13%, increasing in 2021 it was 75.87% and in 2022 it became 76.58% (BPS, 2023), although every year there has been an increase in coverage, this figure is still below the target of the Ministry of Health's target to increase the target of exclusive breastfeeding to 80% (Balitbangkes, 2019). In Berau Regency as one of the districts in East Kalimantan Province is known to have achieved exclusive breastfeeding in the year of 2021 was 62.44%, while in 2022 it decreased to 46.24% (East Kalimantan Provincial Health Service, 2023). This data shows a decline and still low coverage of exclusive breastfeeding because it is below Ministry of Health target 100%.

The mother's calm mental and emotional condition greatly influences the smooth flow of breast milk (Dyna et al., 2022; Rehkliana, 2020). If a mother experiences anxiety, stress, depressed thoughts, restlessness, sadness and tension, it will affect the flow of breast milk. Mothers who are anxious will express less breast milk than mothers who are not anxious. (Mardjun et al., 2019). Anxiety in postpartum mothers can have a bad influence on the baby, the mental health of the baby's mother and her marital relationship. (Fitrah et al., 2018; Solama & Handayani, 2022). Hormones that experience changes in large enough numbers will make the mother's mood change, namely the hormones progesterone, estrogen, thyroid gland, cortisol and prolactin. (Arfiah, 2021).

(Dadi et al., 2020) states that anxiety is a natural emotional disorder characterized by feelings of deep fear or worry. Psychological disorders in the form of anxiety in mothers cause reduced milk production, because it will inhibit let down reflection (Solama & Handayani, 2022). Psychological changes in post-partum mothers generally occur 3 days post-partum (RA Sari, 2020). If the mother experiences stress, depressed thoughts, restlessness, anxiety, sadness and tension it will affect the flow of breast milk. Mothers who are anxious will express less breast milk than mothers who are not anxious (Arfiah, 2021).

Mothers who experience anxiety cause an increase in the secretion of Adrenocorticotropic Hormone (ACTH) by the anterior pituitary gland which is followed by an increase in the secretion of adrenocortical hormone in the form of cortisol within a few minutes. (Dyna et al., 2022; Sulastri & Sugiyanto, 2016). High cortisol secretion can inhibit the transport of the hormone oxytocin in secretions, so that it can inhibit the release of breast milk products (Riyanni et al., 2023; Sulastri & Sugiyanto, 2016). The impact of not producing breast milk is: failure in the breastfeeding process in the form of a mother giving formula milk to her baby (Mardjun et al., 2019).

Results of previous research conducted (Palu, 2019) showed that there was a relationship between anxiety levels and breast milk production during the post partum period at Anutapura Hospital, Palu. Study (Tambaru et al., 2020) show that anxiety during the Covid-19 pandemic in 37 post partum mothers, the majority of whom experienced anxiety about Covid-19, amounting to 22

people (59.5%) and not worrying about Covid-19, amounting to 15 people (40.5%). Study (Mardjun et al., 2019) shows that there is a relationship between anxiety and the smooth flow of breast milk in post partum mothers. Study (Sulastri & Sugiyanto, 2016) showed that there was a relationship between the level of maternal anxiety and breastfeeding during the postpartum period at the Umbulharjo I Yogyakarta Community Health Center. The drawback in previous research was that it only looked at whether or not breast milk came out without looking at the volume of breast milk produced.

The current phenomenon is that the release of breast milk is often caused by anxiety, even though if the mother's mood feels comfortable and happy it will affect the smooth flow of breast milk, whereas if the mother feels anxious it will hinder the smooth flow of breast milk. Based on literature from previous research and observations to date, it is necessary to carry out related analyzes Relationship between anxiety levels and breast milk production in postpartum mothers. By highlighting the importance of psychological factors such as anxiety in influencing milk production, this study contributes to broadening the horizons of the dynamics that influence lactation. The findings from this study may have implications in clinical practice, where holistic care for postpartum mothers should include mental health monitoring and management. A better understanding of the relationship between anxiety and breastmilk production may assist health workers in designing appropriate interventions to increase breastmilk production and support maternal mental health.

## RESEARCH METHOD

The type of research used in this research is quantitative with a research design using a cross sectional design which is used to examine an event at the same time. The research conceptual framework uses an independent variable, namely the level of anxiety and a dependent variable, namely breast milk expenditure. The population in this study were postpartum mothers with normal delivery at RSUD dr. Abdul Rivai, Tanjung Redeb District, Berau Regency in September 2023 numbered 72 people with a sample size of 46 respondents. Analysis of what was collected was carried out using univariate and bivariate analysis using the SPSS application.

## RESULTS AND DISCUSSIONS

### Respondent Characteristics

Characteristics of postpartum mother respondents with normal delivery in Tanjung Redeb District, Berau Regency, can be seen as follows:

#### Age

Respondent age characteristics postpartum mother with normal delivery at RSUD dr. Abdul Rivai Berau, can be seen in the following table:

**Table 1.** Frequency distribution of respondents' ages postpartum mother with normal delivery at RSUD dr. Abdul Rivai Berau

Age	f	Percentage (%)
<20 years	2	4.8
20-35 years	31	73.8
>35 years	9	21.4
Amount	42	100

Source: Primary Data, 2024

#### Education

Respondent's educational characteristics postpartum mother with normal delivery at RSUD dr. Abdul Rivai Berau, can be seen in the following table:

**Table 2.** Frequency distribution of respondents' education postpartum mother with normal delivery at RSUD dr. Abdul Rivai Berau

Education	f	Percentage (%)
No school	0	0
elementary school	0	0
JUNIOR HIGH SCHOOL	5	11.9
SENIOR HIGH SCHOOL	24	57.1
College	13	31
Amount	42	100

Source: Primary Data, 2024

### Work

Respondent's job characteristics postpartum mother with normal delivery at RSUD dr. Abdul Rivai Berau, can be seen in the following table:

**Table 3.** Frequency distribution of respondents' work postpartum mother with normal delivery at RSUD dr. Abdul Rivai Berau

Work	f	Percentage (%)
IRT	28	66.7
Civil servants	8	19
Private sector employee	4	9.5
Trader/Entrepreneur	2	4.8
Farmers/Fishermen	0	0
Amount	42	100

Source: Primary Data, 2024

### Parity

Parity characteristics of respondents postpartum mother with normal delivery at RSUD dr. Abdul Rivai Berau, can be seen in the following table:

**Table 4.** Frequency distribution of respondents' parity postpartum mother with normal delivery at RSUD dr. Abdul Rivai Berau

Parity	f	Percentage (%)
1 child	14	33.3
Two children	18	42.9
3 children	5	11.9
4 children	4	9.5
5 children	1	2.4
Amount	42	100

Source: Primary Data, 2024

### Univariate Analysis

#### Level anxiety in postpartum mothers at RSUD dr. Abdul Rivai Berau

Identification level anxiety in postpartum mothers at RSUD dr. Abdul Rivai Berau, can be seen in the following table:

**Table 5.** Level frequency distribution anxiety in postpartum mothers at RSUD dr. Abdul Rivai Berau

Anxiety Level	f	Percentage (%)
Light	17	40.5
Currently	10	23.8
Heavy	15	35.7
Amount	42	100

Source: Primary Data, 2024

#### Production of breast milk in postpartum mothers at RSUD dr. Abdul Rivai Berau

Identification pProduction of breast milk in postpartum mothers at RSUD dr. Abdul Rivai

Berau, can be seen in the following table:

**Table 6.** Frequency distribution pProduction of breast milk in postpartum mothers at RSUD dr. Abdul Rivai Berau

Breast milk production	f	Percentage (%)
Normal	20	47.6
Abnormal	22	52.4
Amount	42	100

Source: Primary Data, 2024

### Bivariate Analysis

For analyze The relationship between anxiety levels and breast milk production in postpartum mothers at RSUD Dr. Abdul Rivai Berau, can be seen in the table below:

**Table 7.** Relationship The level of anxiety regarding breast milk production in postpartum mothers at RSUD dr. Abdul Rivai Berau

No	Anxiety Level	Breast milk production				Total	%	p value
		Normal		Abnormal				
		n	%	n	%			
1	Light	12	28.6	5	11.9	17	40.5	*0.048
2	Currently	3	7.1	7	16.7	10	23.8	
3	Heavy	5	11.9	10	23.8	15	35.7	
	Amount	20	47.6	22	52.4	42	100	

Source: Primary Data, 2024

### Discussion

#### Level anxiety among postpartum mothers in Tanjung Redeb District, Berau Regency

Based on the research results, it is known that level anxiety among postpartum mothers in Tanjung Redeb District, Berau Regency mostly mild anxiety amounted to 17 respondents (40.5%), while moderate anxiety there were 10 respondents (23.8%).

The results of this study are in accordance with research (Nugrahini et al., 2023) showed that a small number of postpartum mothers did not experience any anxiety (normal), namely 24 people (34.8%), even a small percentage experienced very severe anxiety, namely 4 people (5.8%). Meanwhile, this research mostly mild anxiety amounted to 17 respondents (40.5%). This is because the mother's high education makes the mother actively seek information to reduce anxiety.

Study (Tambaru et al., 2020) show that Covid-19 pandemic anxiety in 37 post partum mothers at the Independent Practicing Midwife Hj. Rusmawati Muara Badak, the majority were worried about Covid-19, amounting to 22 people (59.5%) and not worrying about Covid-19, amounting to 15 people (40.5%). Meanwhile, this research mostly mild anxiety amounted to 17 respondents (40.5%). This is because the mother's high education makes the mother actively seek information to reduce anxiety. (Dadi et al., 2020) states that anxiety is a natural emotional disorder characterized by feelings of deep fear or worry.

Researchers assume that level anxiety among postpartum mothers in Tanjung Redeb District, Berau Regency mostly mild anxiety. Where the anxiety occurs as a result of respondents being unable to overcome psychosocial stressors. Factors that also influence respondents' anxiety include environmental conditions, pain after childbirth, physical condition of the mother, lack of knowledge about the process of baby care and childbirth, support from the social environment (husband/family and friends) and psychosocial background.

#### Production of breast milk in postpartum mothers at RSUD dr. Abdul Rivai Berau

Based on the research results, it is known that pBreast milk production among postpartum mothers in Tanjung Redeb District, Berau Regency the majority of breast milk production was not

normal, amounting to 22 respondents (52.4%), while breast milk production is normal there were 20 respondents (47.6%).

The results of this study are in accordance with research (Nugrahini et al., 2023) showed that the majority of 69 postpartum mothers had insufficient milk production, namely 45 people (65.2%). Likewise this research the majority of breast milk production was not normal, amounting to 22 respondents (52.4%). This can be caused by factors of age > 35 years, low education and primiparous parity.

Study (Tambaru et al., 2020) show that breast milk production from 37 post partum mothers during the Covid-19 pandemic at the Independent Practicing Midwife Hj. Rusmawati Muara Badak, the majority of breast milk did not come out until the second day after giving birth, amounting to 24 people (64.9%), while breast milk came out until the second day after giving birth, amounting to 13 people (35.1%). Meanwhile, this research the majority of breast milk production was not normal, amounting to 22 respondents (52.4%). In this study, more breast milk came out, even though it was not normal, compared to previous studies, because previous studies measured on the first and second days post partum, whereas in this study, the third day post partum.

Researchers assume that pBreast milk production among postpartum mothers in Tanjung Redeb District, Berau Regency most breast milk production is not normal. This is because breast milk that has not come out can be caused by a high level of estrogen being inhibited and at the time of birth, the hormones estrogen and progesterone will decrease and the hormone prolactin will be more dominant, resulting in breast milk secretion.

#### **HThe relationship between anxiety levels and breast milk production among postpartum mothers in Tanjung Redeb District, Berau Regency**

Based on the research results, it is known that Of the respondents who experienced mild anxiety, the highest proportion of normal breast milk production was 12 respondents (28.6%). This is because the age between 20-35 years is the productive age which makes the reproductive organs healthy so that breast milk comes out smoothly and multiparous parity who have more knowledge and experience about the breastfeeding process so that lactation management will be carried out well. Apart from that, postpartum mothers who do not work can easily find information about how to care for their babies through social media and health workers because they have free time.

There were respondents with mild anxiety but abnormal milk production amounting to 5 respondents (11.9%). This is because the age is more than 35 years so that the reproductive organs and other body organs have decreased so that breast milk production begins to decline and primiparas are more likely to feel anxious and their psychological condition is unstable. This will affect the release of hormones that play a role in breast milk production. Apart from that, even though they have completed high school education, postpartum mothers do not receive information about baby care and breastfeeding from school.

There were respondents who experienced moderate anxiety, the highest proportion of abnormal milk production was 7 respondents (16.7%). This is because the age is more than 35 years so that the reproductive organs and other body organs have decreased so that breast milk production begins to decline and primiparas are more likely to feel anxious and their psychological condition is unstable. This will affect the release of hormones which play a role in breast milk production. Apart from that, even though they have completed high school education, postpartum mothers do not receive information about baby care and breastfeeding from school.

There are respondents who experience moderate anxiety but there are expenses breast milk Normal numbered 3 respondents (7.1%). This is because the age between 20-35 years is the productive age which makes the reproductive organs healthy so that breast milk comes out smoothly and multiparous parity who have more knowledge and experience about the breastfeeding process so that lactation management will be carried out well.

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35 years so that the reproductive organs and other body organs have decreased so that breast milk production begins to decline and primiparas are more likely to feel anxious and their psychological condition is unstable. This will affect the release of hormones that play a role in breast milk production. Apart from that, even though they have completed high school education, postpartum mothers do not receive information about baby care and breastfeeding from school.

There were respondents who experienced severe anxiety, but there were normal breast milk output in 5 respondents (11.9%). This is because the age between 20-35 years is the productive age which makes the reproductive organs healthy so that breast milk comes out smoothly and multiparous parity who have more knowledge and experience about the breastfeeding process so that lactation management will be carried out well.

The healthy reproductive age range is 20-35 years. This period is the best period for pregnancy, childbirth and breastfeeding. During a period of healthy reproduction, breast milk production will be sufficient because the function of the reproductive organs can still work optimally. Mothers aged 35 years are considered dangerous because both their reproductive organs and other body organs have decreased so the risk of complications in pregnancy, childbirth and breastfeeding is very high (Leiwakabessy, 2020).

Postpartum mothers' anxiety is influenced by several factors, the first of which is age. Mental disorders also occur at the age of 20-35 years, due to the mother's first experience of giving birth, especially when entering a new phase of motherhood. However, between the ages of 20 and 35 is considered reproductive age. However, according to research results, most people aged 20-35 years fall into the criteria of being young, so mothers still feel anxiety and confusion, and many mothers complain when their babies cry because the mothers don't know how to prevent it. Basically, as the mother's age increases, the mother's experience increases, which can also gain experience from herself or from other people, so that the mother gains new knowledge or experience about caring for her baby, so that the mother does not feel anxious. (Nugrahini et al., 2023).

Parity is related to the beginning of lactation. The start of lactation will determine the success of subsequent breastfeeding. More breast milk will be produced in mothers who give birth more than once. This is because they have more knowledge and experience about the breastfeeding process so that lactation management will be carried out well. Psychological readiness between primiparas and multiparas is very different. A primipara feels anxious more easily and their psychological condition is unstable. This will affect the release of hormones that play a role in breast milk production (Leiwakabessy, 2020).

Another factor is education. Formal education provides a lot of information. It is hoped that the mother's higher education will increase knowledge regarding how to deal with anxiety. This is because postpartum mothers do not get information about baby care and breastfeeding from schools, but from health workers including health workers, closest relatives, especially breastfeeding mothers, and also from other sources of information such as (Nugrahini et al., 2023).

Another factor is work. Women who don't work have a lot of time, so mothers can focus on taking care of their babies and their minds are not divided by work. Mothers learn more about being good parents, mothers also rest easily when they are tired of taking care of the children and the house. Mothers also have lots of time to interact with the people around them. Mothers can easily find information about how to care for their babies through social media and health workers. This can affect the mother's psychological state, because some of these interactions can add information that serves to learn how to deal with the mother's condition which requires the will to live with it, namely the mother's willingness to transition to a new phase of being a parent. (Nugrahini et al., 2023).

The statistical test results obtained  $p \text{ value} = 0.048 < \alpha : 0.05$  so that  $H_a$  was accepted, namely there is a relationship between anxiety levels and breast milk production among postpartum mothers in Tanjung Redeb District, Berau Regency. The results of this study are in

accordance with research (Mukarramah et al., 2023) show that of the 31 people whose breast milk did not come out, the highest proportion of people who were anxious about the Covid-19 pandemic were 24 people (77.4%). As for breast milk coming out, it was proportional to mild anxiety from the Covid-19 pandemic, amounting to 7 people (22.6%). The statistical test results obtained p value:  $0.001 < \alpha: 0.05$  so that  $H_0$  was rejected and  $H_a$  was accepted, that is, there is a relationship between the level of anxiety about the Covid-19 pandemic and post partum breast milk production at the Kalosi Community Health Center. The results of previous research have a p value of 0.000 which is lower than this research, which is 0.048. So previous research shows the anxiety of postpartum mothers. The Covid-19 pandemic has greatly affected the production of breast milk, compared to the anxiety of postpartum mothers who are not moment Covid-19 pandemic.

Study (Tambaru et al., 2020) show that it can be seen that from 24 people their breast milk did not come out, the highest proportion who were worried about the Covid-19 pandemic was 21 people (56.8%), but there were 3 people whose breast milk did not come out who were not worried about the Covid-19 pandemic. Of the 13 people whose breast milk came out, the highest proportion who were not worried about the Covid-19 pandemic was 12 people (32.4%), but there was 1 person who had breast milk coming out who was worried about the Covid-19 pandemic, amounting to 1 person (2.7%). The statistical test results obtained p value:  $0.000 < \alpha: 0.05$  so that  $H_0$  was rejected and  $H_a$  was accepted, namely that there was an influence of Covid-19 pandemic anxiety on post partum mothers' breast milk production at the Independent Practicing Midwife Hj. Rusmawati Muara Badak. The results of previous research have a p value of 0.000 which is lower than this research, which is 0.048. So previous research shows the anxiety of postpartum mothers. The Covid-19 pandemic has greatly affected the production of breast milk, compared to the anxiety of postpartum mothers who are not moment Covid-19 pandemic.

Researchers assume that there is a relationship between anxiety levels and breast milk production among postpartum mothers in Tanjung Redeb District, Berau Regency. This is because cortisol increases which will reduce the amount of ACTH so that it returns to its normal value. High cortisol secretion can inhibit the transport of the hormone oxytocin in secretions, so that it can inhibit the release of breast milk products. Post partum mothers experience anxiety, characterized by the mother always being restless, feeling afraid, feeling anxious, feeling uneasy and always having a bad feeling about being afraid of herself and her baby. Post partum mothers must prepare themselves to breastfeed their babies, but some mothers experience anxiety which affects breast milk production. Nursing mothers must think positively and relax so that they do not experience anxiety and the mother's psychological condition improves. Good psychological conditions can trigger the work of hormones that produce breast milk.

Anxiety occurs in postpartum mothers because they think too much about negative things during the postpartum period. Post partum mothers must think positively, try to love their babies, and relax when breastfeeding. When mothers think positively and remain calm, it will trigger breast milk production so that breast milk can come out smoothly, on the other hand, mothers whose psychological conditions are disturbed, such as feeling anxious, will affect breast milk production so that breast milk production can decrease and cause breast milk not to come out.

## CONCLUSION

From the results of research and discussion regarding the relationship between anxiety levels and breast milk production in postpartum mothers in Tanjung Redeb District, Berau Regency, it was concluded that the level of anxiety in postpartum mothers in Tanjung Redeb District, Berau Regency was mostly mild anxiety, whereas breast milk production in postpartum mothers in Tanjung Redeb District, Berau Regency was mostly mild anxiety. In Berau, the majority of breast milk production is not normal, the level of anxiety is a factor related to breast milk production in postpartum mothers in Tanjung Redeb District, Berau Regency. The research has limitations,

namely this study wanted to see the effect of anxiety on breast milk production, but the administration of anxiety questionnaires was given after breast milk measurement so that anxiety could have occurred due to breast milk not coming out. For future research, it is important to plan the measurement of anxiety and milk production in the right order. It is recommended that the anxiety questionnaire be administered before or at the same time as the breast milk production measurement. This way, the study can capture a more accurate relationship between anxiety levels and milk production.

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