



ANALYSIS OF HONEY CUNSUMPTION ON POSTPARTUM MENTAL WELL-BEING

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ABSTRACT

The postpartum period is a transitional period that is vulnerable to mental and physical health disorders. In Indonesia, the prevalence of emotional disorders in postpartum mothers reaches 18–28%, severe fatigue is around 30–40% in the first week postpartum, and postpartum anemia ranges from 22–50%. Honey contains simple carbohydrates, vitamins, minerals, and antioxidants that have the potential to support physical recovery and psychological stability in mothers. To analyse the honey consumption on mental well-being and physical of postpartum mother in South Tangerang City and to compare the difference between intervention and control groups. This was a quasi experimental study, pretest, and posttest design. There were 60 postpartum mother and assigned into two groups, namely intervention group (n=30) and control group (n=30). Intervention group received honey twice a day during 21 days. Data analysis was conducted using univariate analysis to describe variables and bivariate analysis to test the effect using parametric or non-parametric statistical tests based on the Kolmogorov-Smirnov normality test, with a significance level of $p < 0.05$. The HARS, DASS 21, FAS, and Hb were used. The validity and reliability testing was based on prior research, utilizing a Cronbach's alpha coefficient of 0,89. The results showed a significant difference between pre-test and post-test scores on anxiety ($p=0.001$), stress ($p=0.002$), fatigue ($p=0.001$), and hemoglobin levels ($p=0.000$). There was a significant difference between intervention and control groups ($p<0.05$). Honey consumption can decrease anxiety, stress, fatigue, and increase Hb levels among postpartum mother.

Keywords: mental well-being honey; physical well-being; post partum

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INTRODUCTION

The postpartum period is the phase following labor and the delivery of the baby, placenta, and amniotic sac. It is a recovery period during which the uterine organs return to their pre-pregnancy condition, beginning one hour after placenta delivery and lasting up to six weeks or 42 days (Prawirohardjo, 2020). This period is critical for maternal physical and psychological recovery, long-term well-being, and early infant development. During this phase, physiological and psychological changes occur, and approximately 13–19% of women experience psychological disorders such as baby blues and postpartum depression (WHO, 2022). In Indonesia, around 35–40% of postpartum mothers report symptoms such as stress, fatigue, sleep disturbances, and mild to moderate depression (Ministry of Health, 2021). These conditions are influenced by hormonal changes, new maternal role demands, lack of social support, and inadequate nutritional intake, which may lead to suboptimal recovery and negatively affect breastfeeding, infant development, and maternal quality of life (Ivanda et al., 2025).

Postpartum maternal well-being consists of both mental and physical aspects. Mentally, mothers often experience anxiety, stress, and decreased self-efficacy, which can disrupt sleep quality, mother–infant bonding, and increase the risk of depression (American Psychological Association., 2021). Self-efficacy, defined as a mother's belief in her ability to care for herself and her baby, is an important factor in maternal adaptation and recovery (Bandura, 2019; Alipour et al., 2019). Physically, postpartum mothers frequently experience fatigue and decreased hemoglobin (Hb) levels due to blood loss during childbirth and increased energy demands during breastfeeding.

These conditions highlight the need for safe and effective interventions that support both physical recovery and psychological stability.

As awareness of natural postpartum recovery increases, honey and other natural products are widely used to improve stamina and healing. Honey is a natural bee product containing carbohydrates, amino acids, vitamins, minerals, and antioxidant compounds. It provides rapid energy, reduces fatigue, and supports metabolism, while its antioxidant properties help reduce oxidative stress associated with anxiety and stress (Erejuwa et al., 2014; Eteraf, 2013). Previous studies show that honey can accelerate wound healing, reduce infection risk, increase hemoglobin levels, and reduce fatigue (Waili et al., 2017; Rahman et al., 2017). Honey may also support psychological well-being by improving mood, sleep quality, immune function, and maternal adaptation to new roles.

However, although honey has been widely studied for physical benefits, research specifically examining its effects on both mental well-being (anxiety and stress) and physical well-being (fatigue and hemoglobin levels) in postpartum mothers remains limited, particularly in South Tangerang (Tamar et al., 2025). Interviews with postpartum mothers in hospitals and community health centers in South Tangerang show that many experience fatigue, mood changes, sleep disturbances, anxiety, and difficulty concentrating during early postpartum. Although honey is commonly consumed based on tradition or family recommendations to restore energy and emotional stability, scientific understanding among mothers is still limited. Therefore, this study aims to analyze the effect of honey consumption on the mental and physical well-being of postpartum mothers in South Tangerang City.

METHOD

This study is a quantitative quasi-experimental research using a two-group pretest and posttest design to analyze the causal relationship between honey consumption and changes in the mental and physical well-being of postpartum mothers. The subjects were postpartum mothers in South Tangerang City, divided into an intervention group and a control group, each consisting of 30 respondents selected through purposive sampling based on inclusion and exclusion criteria. Before the intervention, both groups were assessed using a pretest to determine baseline conditions. Data were collected employing structured questionnaires and checklist sheets, administered formally to the subjects for written responses and observational assessments. The intervention group then received honey consumption according to the study procedure, while the control group did not receive any intervention. After the intervention period, both groups underwent a posttest to compare changes in outcomes. Data analysis was conducted using univariate analysis to describe variables and bivariate analysis to test the effect using parametric or non-parametric statistical tests based on the Kolmogorov-Smirnov normality test, with a significance level of $p < 0.05$. This study obtained ethical approval from the Ethics Committee of Universitas Muhammadiyah Purwokerto under number KEPK/UMP/112/XI/2025, ensuring that all procedures complied with ethical research standards.

RESULT

Responden Characters

Tabel 1 shows the characteristics of the respondents show that the largest age group in both groups was 31–40 years, each at 53.3%, which means that the majority of respondents were in their productive and reproductively mature age. In terms of education level, most respondents had a D4/S1 education, namely 56.7% in the intervention group and 66.7% in the control group, which indicates that the majority of respondents were highly educated. Meanwhile, based on occupation, housewives were the largest category in both groups, each at 36.7%, which indicates that most respondents played the role of primary managers of household activities.

Table 1.

Frequency Distribution of Respondent Characteristics of the Intervention Group and Control Group Based on Age, Education and Occupation (n=30)

Responden Characteristics	Intervention Group		Control Group	
	f	%	f	%
Age				
20-30 years	13	43,3	14	46,7
31-40 years	16	53,3	16	53,3
41-50 years	1	3,3		
Education				
Junior High School	4	13,3	3	10,0
Senior High School	4	13,3	2	6,7
Diploma 3 (D3)	4	13,3	4	13,3
Bachelor Degree (D4/S1)	17	56,7	20	66,7
Master Degree (S2)	1	3,3	1	3,3
Occupation				
Houswife	11	36,7	11	36,7
Private Employee	9	30,0	9	30,0
Civil Servant	10	33,3	10	33,3

Results of Paired T-test Analysis

Table 2.

The Effect of Honey Consumption on Anxiety, Stress, Fatigue and HB Levels of Postpartum Mothers in the Intervention Group and Control Group

Variable	Group	Pre-test			Post-test			t	P value
		Mean	SD	SE	Mean	SD	SE		
Anxiety	Intervention	30,40	2,51	0,45	16,00	2,11	0,387	26,90	0,000
	Control	29,40	1,83	0,33	27,40	1,47	0,270	4,257	0,000
Stress	Intervention	38,40	2,41	0,44	21,40	3,62	0,662	19,03	0,000
	Control	38,27	2,47	0,45	37,03	1,88	0,344	2,31	0,028
Fatigue	Intervention	28,07	4,04	0,73	20,07	3,69	0,678	8,46	0,000
	Control	27,10	3,62	0,66	36,13	3,72	0,684	-8,89	0,000
Hemoglobin (Hb) Level	Intervention	10,14	0,88	0,16	11,97	0,62	0,114	-8,44	0,000
	Control	10,31	0,71	0,13	11,00	0,57	0,105	-4,92	0,000

Table 2 shows the results of the pre-test and post-test comparative analysis on the variables of anxiety, stress, fatigue, and hemoglobin (Hb) levels between the intervention group (honey consumption) and the control group. The results of the paired t-test showed significant differences in all variables in both groups, but the magnitude and direction of change showed clear differences. In the anxiety variable, the intervention group experienced a significant decrease from 30.40 ± 2.51 to 16.00 ± 2.11 ($t = 26.90$; $p = 0.000$), while the control group also decreased from 29.40 ± 1.83 to 27.40 ± 1.47 but with a smaller decrease. For the stress variable, the intervention group experienced a significant decrease from 38.40 ± 2.41 to 21.40 ± 3.62 ($t = 19.03$; $p = 0.000$), while the control group experienced only a slight decrease from 38.27 ± 2.47 to 37.03 ± 1.88 ($p = 0.028$).

For the fatigue variable, the intervention group showed a decrease from 28.07 ± 4.04 to 20.07 ± 3.69 ($t = 8.46$; $p = 0.000$), while the control group experienced an increase from 27.10 ± 3.62 to 36.13 ± 3.72 ($t = -8.89$; $p = 0.000$). In the hemoglobin (Hb) level variable, the intervention group experienced an increase from 10.14 ± 0.88 to 11.97 ± 0.62 g/dL ($t = -8.44$; $p = 0.000$), while the control group also increased from 10.31 ± 0.71 to 11.00 ± 0.57 g/dL, but lower than the intervention group. Overall, the results of the study showed that honey consumption had a significant effect ($p = 0.000$) in reducing anxiety, stress, fatigue, and increasing Hb levels in postpartum mothers compared to the control group, thus supporting its role as a non-pharmacological intervention in postpartum recovery.

Results of Independent T-Test Analysis

Table 3.

Differences in Honey Consumption on Anxiety, Stress, Fatigue and HB Levels in the Intervention Group and the Control Group.

Variable	Description	Intervention				Control				<i>t</i>	P -Value
		Min	Max	Mean	SD	Min	Max	Mean	SD		
Anxiety	Pre-test	26	35	30,40	2,51	26	33	29,40	1,83	1,761	0,083
	Post-test	12	20	16,00	2,11	25	30	27,40	1,48	-24,191	0,000
Stress	Pre-Test	34	42	38,40	2,42	34	42	38,27	2,47	2,11	0,834
	Post-Test	15	28	21,40	3,36	34	40	37,03	1,88	-20,956	0,000
Fatigue	Pre-Test	20	35	28,07	4,40	20	33	27,10	3,62	0,975	0,333
	Post-Test	12	28	20,07	3,69	28	42	36,13	3,74	-16,720	0,000
Hemoglobin (Hb) Level	Pre-Test	8,7	12,1	10,13	0,89	9,2	12,2	10,31	0,71	-0,852	0,398
	Post-Test	10,8	13,2	11,97	0,63	9,9	12,2	10,99	0,57	6,281	0,000

Table 3 shows the results of a comparative analysis of the mean scores for anxiety, stress, fatigue, and hemoglobin (Hb) levels between the intervention group (honey consumption) and the control group in the pre- and post-tests in South Tangerang City. In the pre-test, all variables (anxiety, stress, fatigue, and Hb) showed no significant differences between the two groups ($p > 0.05$). In the post-test, there were highly significant differences in all variables between the intervention and control groups ($p = 0.000$).

DISCUSSION

The Effect of Honey Consumption on Postpartum Maternal Anxiety

Based on the research findings, there were significant differences in anxiety, stress, fatigue, and hemoglobin (Hb) levels between the intervention and control groups in South Tangerang City. The t-test results showed a p-value of 0.000 (<0.05) for most variables, indicating that honey consumption had a statistically significant effect on reducing anxiety, stress, and fatigue, as well as increasing Hb levels in postpartum mothers. In the intervention group, there was a decrease in anxiety scores from severe to mild, accompanied by a greater reduction in stress and fatigue compared to the control group, and a more optimal increase in Hb levels (McEwen., 2007; Sugiharto., 2012; Bandura., 2019). These changes are explained by the interaction between biological and psychological factors. Consuming honey, which contains antioxidants, anti-inflammatory effects, and energy sources of glucose and fructose, plays a role in reducing oxidative stress, stabilizing metabolism, and improving energy and oxygen supply by increasing hemoglobin levels (Al-Waili et al., 2011; Erejuwa et al., 2012; Desfita et al., 2020). These physiological improvements result in reduced HPA axis activation and cortisol regulation, thereby helping to mitigate stress and anxiety responses (McEwen, 2007; Slavich & Irwin, 2014).

In addition, honey may influence neuropsychological pathways by stimulating serotonin production, a key neurotransmitter responsible for regulating mood and emotional stability. Increased serotonin levels contribute to improved emotional regulation and reduced anxiety symptoms in postpartum mothers. Honey also exhibits adaptogenic properties that help the body adapt to physical stressors such as fatigue and postpartum recovery, thereby reducing the activation of the “fight-or-flight” response. This mechanism enhances resilience to stress and supports psychological recovery (Al-Rahbi et al., 2020; Slavich & Irwin, 2014; Khasanah et al., 2023).

The Effect of Honey Consumption on Postpartum Maternal Stress

Based on research findings, honey consumption for 21 days significantly reduced postpartum maternal stress levels. At baseline, there was no significant difference between the intervention and control groups ($p > 0.05$), indicating that the initial conditions of both groups were relatively equivalent. After the intervention, the intervention group experienced a significant reduction in stress scores ($p < 0.05$) and a change in stress category from severe to moderate according to the DASS-21, while the control group experienced only a minimal reduction and remained in the severe

stress category. These changes indicate that honey consumption not only statistically reduced stress scores but also had a clinical impact, improving stress severity, which impacted postpartum maternal health. This stress reduction is influenced by the interaction of biological and psychological factors. Honey, which contains antioxidants and anti-inflammatory agents, and energy sources such as glucose and fructose, plays a role in reducing oxidative stress, stabilizing metabolism, and improving central nervous system function, which plays a role in emotional regulation (Erejuwa et al., 2014; Desfita et al., 2020). Furthermore, increased hemoglobin levels and reduced fatigue contribute to physiological balance, resulting in reduced HPA axis activation and cortisol secretion (Sugiharto., 2012).

Recent studies have demonstrated that honey contains bioactive compounds such as flavonoids, including chrysin and phenolic acids, which exhibit anxiolytic and neuroprotective properties. These compounds act on the central nervous system by modulating gamma-aminobutyric acid (GABA) receptors and serotonergic pathways, similar to the mechanism of mild natural anxiolytic agents. In addition, these bioactive substances help protect neuronal cells from oxidative damage caused by chronic stress, thereby improving brain function and emotional stability. Evidence also indicates that regular honey consumption may contribute to lowering cortisol levels, enhancing stress resilience, and improving psychological well-being in individuals experiencing physiological stress conditions, including postpartum mothers (Erejuwa et al., 2014; Khasanah et al., 2023; Zaid et al., 2022).

The Effect of Honey Consumption on Postpartum Maternal Fatigue

The results of the study showed that honey consumption for 21 days significantly reduced postpartum maternal fatigue. In the pre-test, the mean fatigue scores of the intervention group (28.07 ± 4.40) and the control group (27.10 ± 3.62) did not differ significantly ($p = 0.333$), indicating that the initial conditions of the two groups were homogeneous. After the intervention, the intervention group experienced a significant decrease in fatigue (20.07), while the control group experienced an increase (36.13), with a statistically significant difference in the post-test. Clinically, there was a shift in the fatigue category from moderate to near-normal levels in the intervention group, while the control group increased to severe, indicating a significant effect of honey consumption on improving postpartum maternal fatigue levels.

This reduction in fatigue is related to improved biological conditions through increased energy supply from glucose and fructose, support from B-complex vitamins and minerals for energy metabolism, antioxidant effects in reducing oxidative stress, and increased hemoglobin levels that improve oxygen transport (Desfita et al., 2020). This improvement in physical condition also impacts psychological aspects, namely reducing stress and anxiety and increasing coping skills, self-efficacy, and psychological well-being in postpartum mothers (Bandura, 2019; Ryff, 2022). Thus, the effects of honey consumption are systemic, with improved energy and physiological conditions contributing to better postpartum adaptation, both physically and psychologically. Although it still needs to be supported by a holistic approach such as rest, balanced nutrition, and psychosocial support (Bossert et al., 2023).

The Effect of Honey Consumption on Hemoglobin Levels in Postpartum Maternal.

The results of the study showed that honey consumption for 21 days significantly increased hemoglobin (Hb) levels in postpartum mothers. In the pre-test, Hb levels in the intervention and control groups were relatively equal ($p > 0.05$), thus indicating that both groups were considered homogeneous before the intervention. After the intervention, there was a significant increase in Hb in the intervention group ($p = 0.000$) and a significant difference compared to the control group ($p = 0.000$), although the control group also experienced a smaller increase as part of the natural physiological recovery process after postpartum. These findings suggest that honey consumption

makes a significant additional contribution to improving the hematological status of postpartum mothers (Milman, 2011; Rahman et al., 2017).

This increase in Hb is significant because most respondents initially had mild to moderate anemia (<11 g/dL), which then approached normal postpartum levels after the intervention. This increase in Hb resulted in improved oxygen transport, increased energy production, and reduced symptoms of anemia such as weakness and fatigue, ultimately supporting the physical recovery of postpartum mothers. Physiologically, this effect is supported by the iron, copper, vitamin C, and antioxidants in honey, which play a role in erythropoiesis, increased iron absorption, and red blood cell protection. This biological improvement also impacts psychological aspects, increasing the mother's energy, self-efficacy, and adaptation to her maternal role. Therefore, the increase in Hb is not only hematologically significant but also supports overall postpartum well-being (Bakta., 2013; Guyton & Hall, 2014; Erejuwa et al., 2014; Wulandari., 2017; Muwakhidah., 2019; Widowati et al., 2022; Bandura., 2019; Ryff., 2022; Bossert et al., 2023).

Differences in Honey Consumption on Postpartum Maternal Anxiety

The study results show a significant difference in anxiety levels between postpartum mothers who consumed honey and those who did not. At the pre-test stage, both groups were in relatively similar conditions and showed no statistically significant difference ($p > 0.05$), indicating baseline homogeneity. After a 21-day intervention period, the intervention group experienced a significant reduction in anxiety ($p = 0.000$), shifting from moderate–severe to mild category, while the control group showed only a slight decrease. The post-test results also revealed a significant difference between the two groups ($p = 0.000$), confirming that honey consumption had a greater effect on reducing postpartum maternal anxiety compared to no intervention. This reduction in anxiety is associated with the antioxidant and anti-inflammatory properties of honey, which help reduce oxidative stress and stabilize central nervous system activity and the HPA axis stress response (Desfita et al., 2020). In addition, the glucose and fructose content in honey provides a stable energy source that supports brain function and emotional regulation during the postpartum period, which is often accompanied by fatigue. Psychologically, this improvement in physical condition enhances adaptability, self-efficacy, and maternal psychological well-being (Bandura, 2019; Ryff, 2022). Therefore, honey consumption contributes to reducing anxiety through interconnected biological and psychological mechanisms, although it is also influenced by other factors such as family support, sleep quality, and the infant's condition (Bossert et al., 2023).

Differences in Honey Consumption on Postpartum Maternal Stress

The results showed that consuming honey for 21 days significantly reduced postpartum maternal anxiety. In the pre-test, anxiety scores for both groups were relatively equal and did not differ statistically significantly ($p > 0.05$), indicating initial homogeneity (Milgrom et al., 2019). After the intervention, the group consuming honey experienced a highly significant reduction in anxiety ($p = 0.000$), shifting from moderate-severe to mild, while the control group experienced only a small decrease. The significant difference in the post-test ($p = 0.000$) confirmed that honey consumption had a greater impact than no intervention in reducing postpartum maternal anxiety.

This reduction in anxiety occurs through a series of biological and psychological adaptations. Honey consumption helps improve physiological conditions by increasing hemoglobin levels, reducing fatigue, and stabilizing energy and stress responses through its antioxidant and anti-inflammatory effects (Bakta., 2013; Guyton & Hall., 2014; Desfita et al., 2020). These biological improvements support emotional stability, increase self-efficacy, and strengthen mothers' adaptability in fulfilling their maternal role (Bandura., 2019; Ryff., 2022). Thus, honey consumption acts as a complementary nutritional intervention that supports postpartum adaptation holistically, although it is still influenced by other factors such as family support, sleep quality, and the mother's psychosocial condition (Bossert et al., 2023).

Differences in Honey Consumption on Postpartum Maternal Fatigue

Based on research findings, consuming honey for 21 days significantly impacted postpartum maternal fatigue levels. In the pre-test, the intervention and control groups were relatively equal and showed no statistically significant differences ($p = 0.333$; $p > 0.05$), thus declaring both groups homogeneous (Nisbet et al., 2010; Fish., 2020). After the intervention, the group consuming honey experienced a significant decrease in fatigue, while the control group experienced an increase in fatigue. The post-test difference between the groups was also highly significant ($p = 0.000$), indicating that honey consumption significantly reduced postpartum maternal fatigue, both statistically and clinically (Rahman et al., 2017; Desfita et al., 2020).

The intervention group experienced a shift in fatigue from moderate to near-normal levels, while the control group experienced an increase in fatigue to severe levels. Postpartum fatigue itself is associated with energy deficits, sleep disturbances, hormonal changes, and blood loss during childbirth, which can interfere with maternal adaptation. The mechanism of fatigue reduction through honey consumption is explained by its glucose and fructose content as a fast and stable energy source, micronutrient support (vitamin B complex, magnesium, potassium) for energy metabolism and neuromuscular function, and antioxidant activity that helps reduce oxidative stress (Nisbet et al., 2010; Fish., 2020; Desfita et al., 2020). Furthermore, increased hemoglobin levels in the intervention group also increased tissue oxygenation and cellular energy production. Overall, these biological improvements strengthen the psychological adaptive capacity of postpartum mothers by increasing self-efficacy and the ability to manage maternal roles. Therefore, honey consumption can be considered a complementary intervention in postpartum fatigue recovery that still needs to be supported by a holistic approach such as rest, balanced nutrition, and family support (Bossert et al., 2023).

Differences in Honey Consumption on Postpartum Maternal Hb Levels.

Based on the research findings, there was a significant difference in hemoglobin (Hb) levels between postpartum mothers who consumed honey and those who did not. In the pre-test, both groups showed relatively similar Hb levels and were not statistically significantly different ($p = 0.398$; $p > 0.05$), thus the initial conditions were considered homogeneous. After 21 days of intervention, the group consuming honey experienced a significantly greater increase in Hb than the control group, and the post-test difference between the groups was highly significant ($p = 0.000$). This indicates that honey consumption contributed additionally to the increase in Hb beyond the natural physiological recovery process of the postpartum period (Bossert et al., 2023).

The increase in Hb in the intervention group brought hemoglobin levels closer to normal postpartum values, making it not only statistically significant but also functionally significant for postpartum maternal recovery. This increase is important because Hb plays a role in oxygen transport and cellular energy production, so its improvement impacts increased stamina, accelerated recovery, and reduced symptoms of anemia such as weakness and fatigue. Biologically, this effect is thought to be influenced by the iron and copper content in honey, which support erythropoiesis, vitamin C and organic acids that increase iron absorption, and antioxidant activity that protects erythrocytes (Erejuwa et al., 2014; Wulandari., 2017; Muwakhidah., 2019; Widowati et al., 2022). Within a biopsychosocial framework, improved Hb also enhances the adaptive capacity of postpartum mothers by increasing energy, self-efficacy, and the ability to perform maternal roles (Bandura., 2019; Ryff., 2022). Therefore, honey can be considered a complementary nutritional intervention in the recovery of postpartum anemia, which still needs to be integrated with a holistic approach (Bossert et al., 2023).

CONCLUSION

This study shows that honey consumption can improve both the psychological and physical condition of postpartum mothers. Mothers who consumed honey experienced a significant decrease

in anxiety, stress, and fatigue, along with an increase in hemoglobin levels compared to the control group. These results indicate that honey can be used as a simple, safe, and effective complementary intervention in postpartum care. In addition, the benefits of honey are not only seen from clinical outcomes but also from its underlying mechanisms, such as its role in increasing serotonin activity, helping the body adapt to stress, and supporting the regulation of cortisol through the HPA axis. This indicates that improvements in physical condition are closely linked to better psychological outcomes in postpartum mothers.

Honey also contains bioactive compounds such as flavonoids, chrysin, and phenolic acids, which have anti-anxiety and neuroprotective effects. These compounds help reduce oxidative stress and support brain function, which can improve emotional stability and reduce the risk of mild psychological problems during the postpartum period. Therefore, honey can be considered not only as a nutritional supplement but also as a functional food that supports overall recovery in postpartum mothers. This finding highlights the potential of honey as a novel complementary intervention that integrates physical recovery with mental health support in postpartum care. Based on these findings, health services are encouraged to develop clear guidelines for honey use, while mothers are advised to consume it along with balanced nutrition and adequate rest. Family support and further research are also important to strengthen the use of complementary nutritional interventions in postpartum care.

REFERENCES

- Ahmed, S. O. (2023). Exclusive breastfeeding: Impact on infant health. *Clinical Nutrition Open Science*, 51, 44–51.
- Alipour, Z. K. (2019). Self-efficacy in maternal role and its associated factors in Iranian women. *Iranian Journal of Nursing and Midwifery Research*, 24(3), 178–184.
- Anbarwati, W., & ... (2018). Hubungan antara tingkat nyeri post episiotomi dengan kemampuan aktivitas fisik ibu postpartum spontan di RS PKU Muhammadiyah Delanggu.
- Anggarini, I. A. (2019). Factors relating to postpartum depression in independent midwife practices. *Jurnal Kesehatan*, 8(2), 94–104. <https://doi.org/10.26714/jk.8.2.2019.94-104>
- Anwar, C., & Safitri, F. (2022). Perawatan masa nifas di rumah sakit Bhayangkara. *Pengabdian Masyarakat (Kesehatan)*, 4(1), 61–69.
- Ayers, S., Bond, R., Bertullies, S., & Wijma, K. (2021). The aetiology of post-traumatic stress following childbirth: A meta-analysis. *Psychological Medicine*, 51(3), 1–12.
- Bandura, A. (2019). Self-efficacy: The exercise of control. W. H. Freeman.
- Barelli, L. B. (2018). Hubungan karakteristik personal dengan kecemasan pada ibu postpartum. *Energies*, 6(1), 1–8.
- Bohren, M. A., Tunçalp, Ö., Miller, S., & Fawole, B. (2020). Respectful maternity care. *The Lancet*, 396(10247), 195–196.
- Bong, C. L., Brasher, C., Chikumba, E., McDougall, R., & Mellin-Olsen, J. (2020). COVID-19 pandemic effects on LMIC. *Anesthesia and Analgesia*, 131(1), 86–92.
- Clark, A., Skouteris, H., Wertheim, E. H., Paxton, S. J., & Milgrom, J. (2021). Body dissatisfaction and postpartum depression. *Journal of Affective Disorders*, 282, 722–736.
- Dyrbye, L. N., West, C. P., & Shanafelt, T. D. (2020). Burnout in healthcare professionals. *Journal of General Internal Medicine*, 35(8), 1–3.
- Elisabeth, W. S. (2021). Asuhan kebidanan masa nifas dan menyusui. Pustaka Baru.
- Erejuwa, O. O. (2014). Honey as antioxidant therapy. *Molecules*, 17(4), 4400–4423.
- Fath, F., Yudino, D. T., & Suandika, M. (2024). Determinan produksi ASI post SC. *Journal of Nursing & Health*, 9(12), 26–34.
- Firouzabadi, M., Pourramezani, N., & Balvardi, M. (2020). Honey effects on nipple fissure healing. *Iranian Journal of Nursing and Midwifery Research*, 25(4), 282–285.
- Galderisi, S. H. (2019). Definition of mental health. <https://doi.org/10.1002/wps.20231>

- Gassman-Pines, A., Ananat, E. O., & Fitz-Henley, J. (2020). COVID-19 and parent-child wellbeing. *Pediatrics*, 146(4).
- Hall, L. H., Johnson, J., Watt, I., Tsipa, A., & O'Connor, D. B. (2021). Healthcare staff wellbeing. *BMJ Open*, 11(2).
- Hernanto, F. F., Yaner, N. R., & Permana, R. (2022). Psychological well-being ibu hamil dan menyusui. *NERSMID*, 5(2), 235–246.
- Huda, A. M., Fitriah, A., & Marsha, G. C. (2024). Dukungan tenaga kesehatan dan well-being ibu menyusui. *Jurnal Psikologi*, 1(4), 1–23.
- Indira, I. E. (2019). Stress questionnaire. *Psychoneuroimmunology in Dermatology*, 141–142.
- Jati, N. K., & Pramadi, A. (2023). Mindfulness-based therapy for well-being. *Procedia Psikologi*, 11(3), 110–135.
- Kivimäki, M., et al. (2021). Work stress and health outcomes.
- Korompis, G. (2019). Kecemasan dan produksi ASI. *Jurnal Keperawatan*, 7(1).
- Lazarides, C., Ward, K. P., & Buss, K. A. (2023). Parenting stress and maternal well-being. *Journal of Family Psychology*, 37(2), 220–231.
- Modak, A., & Ronghe, V. (2023). Psychological benefits of breastfeeding. *Cureus*, 15(10).
- Ngai, F. W., Ngu, S. F., & Wong, P. W. C. (2021). Postpartum resilience. *Women and Birth*, 34(4), e355–e362.
- Notoatmodjo, S. (2018). Metodologi penelitian kesehatan. Rineka Cipta.
- Nursalam. (2017). Metodologi penelitian ilmu keperawatan. Salemba Medika.
- Permenkes RI. (2019). Angka kecukupan gizi Indonesia.
- Pugh, L. C., Milligan, R. A., Parks, P. L., & Lenz, E. R. (2006). Fatigue intervention in breastfeeding mothers. *Journal of Nursing Scholarship*, 38(2), 167–173.
- Razak, Q. A., Faridah, R., & Syamsuryadi, B. (2021). Madu sebagai pemanis alami. *Tarjih Tropical Livestock Journal*, 1(1), 8–14.
- Rosuzeita, F., et al. (2018). Breastfeeding intervention effectiveness. *Malaysian Journal of Medical Sciences*, 25(1), 53–66.
- Ryff, C. D. (2022). Psychological well-being revisited. *Psychotherapy and Psychosomatics*, 91(6), 1–14.
- Sandall, J., et al. (2020). Midwife-led care models. *Cochrane Database of Systematic Reviews*.
- Segura, S. A., et al. (2016). Maternal nutrition during breastfeeding. *Anales de Pediatría*.
- Simbar, M., et al. (2022). Honey and fenugreek on breastfeeding success. *Evidence-Based Complementary and Alternative Medicine*.
- Sugiyono. (2019). Metode penelitian kuantitatif kualitatif dan R&D. Alfabeta.
- Widowati, R., Sulastri, D., Novelia, S., & Camin, Y. R. (2022). Madu dan peningkatan Hb remaja putri. *Matappa Journal*, 5*(2).

