



JNK

JURNAL NERS DAN KEBIDANAN
(JOURNAL OF NERS AND MIDWIFERY)

<http://jnk.phb.ac.id/index.php/jnk>



Factors Triggering Anxiety for Pregnant Women during the Covid 19 Pandemic



Triatmi Andri Yanuarini¹, Shinta Kristianti², Finta Isti Kundarti³
Moh. Ali Mansur⁴, Sumy Dwi Antono⁵

^{1,2,3}Department of Midwifery, Poltekkes Kemenkes Malang, Indonesia

Article Information

History Article:

Received, 14/03/2023

Accepted, 25/04/2023

Published, 30/04/2023

Keywords:

covid-19, anxiety factors, pregnant women

Abstract

Covid-19 infection is more common in expectant mothers. than people who are not expecting. This causes pregnant women to experience anxiety and even depression if they are not treated immediately. The pandemic caused by COVID-19 can psychologically cause increased levels of tension and anxiety brought on by worry about spreading disease and its effects. The objective of the study was to identify the triggering factors for anxiety in during the Covid-19 epidemic, expectant mothers. The design of the study was cross-sectional research design. The sample included several expecting mothers in Mojoroto District, Kediri City as many as 67 respondents. The data collection used questionnaire. The data analysis used ordinal regression. The results showed the p-value of pregnancy complications (0.034), limited food ingredients (0.047), history of depression (0.000), environment (0.001), loss of caregiver (0.000) which meant these variables affected the occurrence of anxiety during the Covid-19 epidemic in expecting mothers. COVID-19 increased the risk of complications in expecting mothers, besides that social restrictions also caused limited food ingredients, difficulty getting caregivers. This caused pregnant women to experience depression. The covid pandemic had also caused many deaths and generating worry in expectant mothers. The conclusion is that the triggering factors for pregnancy-related stress and the Covid-19 epidemic pregnancy complications, limited food ingredients, a history of depression, anxiety about the environment and anxiety about losing a caregiver.

© 2023 Journal of Ners and Midwifery

✉Correspondence Address:

Poltekkes Kemenkes Malang – East Java, Indonesia

Email : fintaistikundarti@gmail.com

DOI: <https://doi.org/10.26699/jnk.v10i1.ART.p121-130>

This is an Open Access article under the CC BY-SA license (<http://creativecommons.org/licenses/by-sa/4.0/>)

P-ISSN : 2355-052X

E-ISSN : 2548-3811

INTRODUCTION

WHO reported confirmed cases of Coronavirus disease 2019 (COVID-19) until July 22, 2020, amounting to 14,971,036 cases with 618,017 deaths worldwide (Case Fatality/CFR 4.1%). This disease affects all groups, including pregnant women. Pregnant women, as a population, can be more susceptible to infection, with high morbidity and mortality rates (Aziz, 2020). Based on data on positive confirmed cases of women There were 15,735 persons in the US in August 2020, which is 0.3% of the total population positive verified instances) (Rohmah & Nurdianto, 2020). 13.7% of pregnant women are more likely to contract Covid-19 infection, according to data from the Indonesian Obstetrics and Gynecology Association (POGI) in Jakarta than non-pregnant individuals (Aziz, 2020; Rohmah & Nurdianto, 2020). This causes pregnant women to experience anxiety and even depression if not treated immediately. The COVID-19 pandemic can psychologically lead to increased levels of anxiety and stress brought on by fear of transmission and the effects thereof. During the COVID-19 pandemic, anxiety and depression were prevalent in pregnant women at 64.5% and 56.3%, respectively (Puertas-Gonzalez et al., 2021). The frequency of anxiety among expectant mothers is 36.77%: 25.34% with mild anxiety, 10.09% with moderate anxiety, and 1.35% with severe anxiety (E. et al., 2021). Women who are expecting are more susceptible to these psychological effects. (BPS Kota Kediri, 2020). During pregnancy, COVID-19 possesses an important impact on the results of prenatal and neonatal care.

Since April 2020, the Indonesian Government has launched Mental Health Psychology Services (SEJIWA), that offers a hotline. Similarly, the Indonesian Psychological Association (HIMPESI) provides licensed psychologists and support with the increase number volunteers, as well as strengthening the ability to these employees of a both regional and national level. SEJIWA was the first to provide assistance with mental health for the people of Indonesia While COVID-19 was in the air. This service provided guidance for women impact of COVID-19, including female victims of domestic violence, women in emergency situations and special conditions (such as pregnant women), female migrant workers, and women with disabilities. One week after its inauguration, public complaints regarding SEJIWA's services were relatively low, with approximately 344 complaints from 2,978 calls

received through 119 ext. 8, with a transfer call ratio of 11.55 percent.

The COVID-19 outbreak of the coronavirus disease that originated a pandemic that started in China threatening worldwide health, therefore encouraging research aimed at early detection, prevention, and treatment of the disease (Tyastuti, 2016).

According to a study on anxiety in pregnant women in the Mojoroto district, 13 pregnant women (52%) experienced anxiety in the very severe category, 1 pregnant woman (4%) in the severe category, 3 pregnant women (12%) in the moderate category, 3 pregnant women (12%) in the mild category, and 5 pregnant women (20%) in the normal category. This prompted researchers to analyze the factors contributing to anxiety in pregnant women, as previous research failed to identify these factors. Therefore, this study aimed to Assessing anxiety in pregnant women and identify triggers for during the Covid-19 epidemic, anxiety.

METHODS

The design of the study was analytic with cross sectional design. This study was taken place in Mojoroto District, Kediri City. This study was conducted on February-August 2022. The group under examination was all expecting mothers in Mojoroto District, Kediri City with the sum of 80 expecting mothers. The sample in this study were some pregnant women in Mojoroto District, Kediri City. The sample size obtained with the slovin formula was 67 respondents. The sampling technique used a cluster random sampling mechanism, a technique for determining samples from populations by grouping through region. Before conducting the study, an ethical test is carried out first, if ethically approval has been obtained then the research will be carried out. Prior to the research, the researcher arranged for a research permit to the relevant agency, if he had obtained permission, then approached the respondent to obtain informed consent. Data regarding factors that influence anxiety are collected online using the Questionnaire facility. After the data has been gathered, data verification is carried out first after collecting reliable data, the data tabulation procedure is carried out according to each research variable. The instrument used a questionnaire on the variables that affect anxiety. Identification of pregnant women's anxiety using DASS. The validity of the questionnaire was tested by Product Moment Correlation and the reliability test was carried out by

Cronbach's Alpha Coefficient Technique. The data collection process was carried out in collaboration with the cadres. The cadres help to coordinate and gather pregnant women who take part in the research.

Processing and analysis of data

The first stage was carried out descriptive analysis first, then bivariate analysis was carried out using the Spearman Rho test, then to find out the factors that influence anxiety were tested with The Ordinal Regression. SPSS 19 is the testing software.

RESULTS

Table 1: Age Group

Age group	Amount	
	n	%
16 – 20	6	8,9
21–25	12	17,9
26 – 30	20	29,9
31–35	13	19,5
36–40	14	20,9
> 40	2	2,9
Total	67	100

Based on Table 1 above, that the most age group is in the position of productive adults.

Table 2: Pregnancy Trimesters

Pregnancy Trimesters	Amount	
	n	%
I (One)	17	25,4
II (Two)	22	32,8
III (Three)	28	41,8
Total	67	100

Based on Table 2 above, that the most pregnancy trimesters are in the third trimester of pregnancy.

Table 3: Pregnancy Complications

Complications	Amount	
	n	%
Anemia	4	6
Preeclampsia	0	0
Concomitant Diseases	1	1,5
Other	1	1,5
There isn't any	61	91
Total	67	100

Based on Table 3 above, that most pregnant women do not experience pregnancy complications.

Table 4: Occupational groups

Work	Amount	
	n	%
IRT	45	67,2
Private sector employee	10	14,9
Self-employed	7	10,4
Freelancer	1	1.5
Teacher	4	6
Total	67	100

Based on Table 4 above, that most pregnant women work as housewives.

Table 5: Limited Food Materials

Work	Amount	
	n	%
Yes	3	4,5
No	64	95.5
Total	67	100

Based on Table 5 above, that the most limited food ingredients are not experiencing food shortages.

Table 6: Efforts to Prevent COVID-19 in Health Services

Efforts to Prevent COVID-19 in Health Services	Amount	
	n	%
Yes	19	28,4
No	48	71.6
Total	67	100

Based on Table 6 above, the most anxious feelings of pregnant women about efforts to stop COVID-19 in health services are that they do not experience anxiety.

Table 7: History of Depression

of expectant mothers	Amount	
	n	%
Yes	3	4,5
No	64	95.5
Total	67	100

Based on Table 7 above, most pregnant women do not have a history of depression.

Table 8: Environments with high Covid cases

An environment with high Covid cases	Amount	
	n	%
Yes	33	49
No	34	51
Total	67	100

Based on Table 8 above, that the feeling of being in an environment where Covid cases are high is mostly not experiencing anxiety.

Table 9: Lost caregiver

Lost nanny	Amount	
	n	%
Yes	14	21
No	53	79
Total	67	100

Based on Table 9 above, that the feelings of anxiety of pregnant women when they lose a caregiver are mostly not experiencing anxiety.

Table 10: Statistical Test Results Factors affecting pregnant women's anxiety during a pandemic

Variable	B	p-values	Information
Pregnancy Complications	0.932	0.034	Significant
Scarcity of food	-6,470	0.047	Significant
History of Depression	28,706	0.000	Significant
An environment with high Covid cases	2,720	0.001	Significant
lost caregiver	25,739	0.000	Significant

Note: Ordinal Regression test

to stop COVID-19 Table 10, the results of the Ordinal Regression statistical test, the variables of pregnancy complications, food scarcity, history of depression, anxiety about the environment and anxiety about losing caregivers have a p-value of less than α (0.000) which means they have an influence on the occurrence of anxiety for pregnant ladies in the year 19 of the COVID epidemic.

DISCUSSION

Pregnancy Complications

Women who underwent surgical procedures While COVID-19 was in the air While COVID-19 was in the air are reported to have experienced symptoms of depression. These psychological effects are further exacerbated by a pre-existing medical condition. Abdul Latif et al., 2022). significant COVID-19 infection in significant COVID-19 infection or in sub-optimal health conditions is one of the growing concerns, besides fear of procedure-related complications and fear of post-hospital COVID-19 infection being the cause. (Abdul Latif et al., 2022). Vomiting, in particular, has been shown can raise the risk of perinatal distress. women who have experienced extreme vomiting are more prone to psychiatric disorders such as depression and anxiety. Because vomiting can act in response physiologically to excessive pregnancy-related stress and vomiting symptoms may both be higher susceptible to COVID-19.

Increased risk of more serious illness in people with ongoing medical issues. Pregnant people with ongoing medical issues. Pregnant conditions are more afraid of COVID-19 than healthy people (Giesbrecht et al., 2020). COVID-19 anxiety even after taking anxiety into account, remained a strong predictor, depression Includes more pertinent factors. This shows that COVID-19 anxiety is a

factor in negative birth results (Giesbrecht et al., 2020).

Age at conception is linked favorably with anxiety and depressive symptoms. Consequently, the most common complications pregnancy, including pre-eclampsia pregnant women's diabetes, are thought to occur late in pregnancy and contribute to a weakened immune system. In addition, a decrease in inherent immune system response in expectant mothers increases the mother's exposure to COVID-19 infection, causing higher pregnancy death, which can cause mother angst and depressive symptoms. (Luong et al., 2021). Pregnant women who experience vomiting and are considered vulnerable to SARS-CoV-2 infection experience increased birth anxiety. (Cui et al., 2021). Pregnant women with chronic health problems are more afraid of COVID-19 than healthy people (Giesbrecht et al., 2020).

Limited food ingredients

The results showed that food limitations are one of the factors that can cause anxiety. Individuals eating shortages had an increased likelihood of having levels of Depression and anxiety levels ranged from low to severe (mild: 32% vs. 23%, moderate: 15% vs. 7%, severe: 10% vs. 2%), respectively. Food insecurity While COVID 19 was in the air was reported to have a more than 5 times the chance of major depression. The significant link

between psychological discomfort and food hardship has significant implications for clinical guidelines and public health policies related not only to public health emergencies, but also to pregnancy in general. In addition to nutritional health, tackling food insecurity can also have a substantial effect on pregnant women's mental health. Not all people affected by food insecurity are entitled to government assistance types of government feeding programs like food banks and nutrition education programs. (Avalos et al., 2022). Limited food ingredients often cause pregnancy-related anxiety during COVID-19. Anxiety occurs because they are worried that the food ingredients will run out while the money to buy food is not enough due to social restrictions. In addition, the durability of food ingredients is also a problem in itself, most food ingredients are not able to last long, causing anxiety if they are damaged but replacements are not yet available.

food safety, and nutrition issues the COVID-19 situation, which poses a major threat to has limited access too wholesome food. A healthy diet throughout COVID-19 outbreak is less inclined to develop anxiety and depression compared to a similar or less wholesome diet. (Luong et al., 2021). Restrictions during Covid-19 had a significant impact financial and social effect on affected families, namely experiencing economic difficulties and mental health problems. This impact worsens the family's condition in meeting food needs. Policies are needed in the form of support in terms of family income (Hannah Bryson et al, 2021)

History of Depression

Women who came forward having a mental health history conditions were more susceptible to exhibiting signs of anxiety and stress during pregnancy a pandemic pregnancy. This is consistent with other studies looking at predicting higher Pregnant women's anxiety and post-traumatic stress disorder levels. (Awad-Sirhan et al., 2022). Pregnant women with a history of psychiatric illness have been shown to be at increased risk of moderate or severe symptoms of general anxiety (Iiska et al., 2022). Having a current or previous mental illness is a risk factor for pregnancy anxiety. In addition, worldwide general population research have found that a history of current or earlier mental disorders is associated with adverse mental health effects with COVID-19 (Benke et al., 2020; Luo et al., 2020; Vindegaard & Benros, 2020).

Woman under 40 years old gender, in touch with someone infected with COVID, history of psychiatry, performing a health a nurse or other professional who has been following the COVID-19 news for more than 3 hours per day increases the likelihood of experiencing depression, anxiety, and sleep issues. Many of these elements work via neuroinflammatory mechanisms in reaction to tension. In addition, Mental health patients frequently denied access to medical care, which continues to be a major issue (Kassaeva et al., 2022). Pregnant and postpartum women who report issues with mental health, present or past are more inclined to experience anxiety. As well as, women who reported more stressful life events outside of pandemics and worse social health problems during pregnancy were more likely to report increased depression (Lequertier et al., 2022). Reduced education level and a history of prior to the COVID-19 pandemic, pre-existing anxiety has been identified as a predictor of mild to severe anxiety symptoms. (Morris et al., 2022).

Environment

Most pregnant women experience increased pregnancy anxiety during the pandemic. Respondents stated such pregnancy given the epidemiological scenario at the moment contributed to an increase in sensation of dread (Kicia et al., 2018). The COVID-19 pandemic's challenging epidemiological state, the associated constraints, as well as shifting socioeconomic changes, can also increase in the number of perinatal mothers developing psychological issues (Ahmad & Vismara, 2021; Brooks et al., 2020). Regions that encountered a sharp rise in cases, lockdowns and restrictions on maternity due to and maternity care the outbreak of the second wave of Covid reported an increase in depression three to four times (Lequertier et al., 2022). an anxiety or depression history is connected with an increase in symptoms of moderate to extreme phobia (Morris et al., 2022).

Lockdown has forced most the trend of staying at home by women less outings, enhancement workload at home, and caring as the sick, which contribute from psychological stress (Abdul Latif et al., 2022). Individuals with positive contact with COVID-19 (whether among friends, relatives, or family) report higher levels out of fear. Potentially higher risk of catching the illness from coming into contact with an a sick individual. Concern about the state of their social and economic contacts who have COVID-19 contract can contribute as well this

concern. An American study discovered that levels of fear of The Northeastern states, which are relatively near to the Maritime provinces, had the highest COVID-19 levels of Canada (Fitzpatrick K et al., 2020). The study's authors suggest that the region's higher fear of COVID-19 may be related to higher case numbers.

Labor patients find being constant changes highly upsetting in limitations and regulations. Our research findings, plus without clinical knowledge, suggests that the worry of negative health effects associated with COVID-19 is simply a portion of the issue with pregnant women, adding to apprehensions about being pregnant during a pandemic (Giesbrecht et al., 2020). Restrictions on parent visits in newborn intensive care unit may make parents feel more stressed during this extraordinary health care emergency (Grumi et al., 2021).

Social restrictions that apply wherever can be a significant issue that causes psychological anguish, because social assistance is very important in reducing the harmful consequences of anxiety and stress (Iwanowicz-Palus et al., 2022). Personal protective measures and the government's policies regarding the precautions are designated as danger elements; the quick authorities' response to a change in situations, on the other hand, is a preventative element (Kassaeva et al., 2022). Living in Victoria, Australia is connected with a four to five times increased likelihood of despair. Although the model regulated for the exposure to pandemics (regional number of cases/deaths, and duration) and many another COVID-19-related goal difficulties, Victoria observed a sharp rise in instances and additional lockdowns and restrictions on pregnancy care because the third wave of epidemic right before administrative a survey. The additional difficulties The difficulties Victorian women faced, as demonstrated here, may serve as these experiences (Lequertier et al., 2022).

Pregnant Australian women report increased loneliness and diminished autonomy related to their maternity care experience as a result of restrictions on health services, which can aggravate the suffering women went through during this time of extreme vulnerability (Wilson et al., 2022). At the peak when asked about the COVID-19 pandemic-era stay-at-home lockdown in the United States, at least two in five (43.3%) responders in a sample of pregnant Americans who are women experienced depression and/or anxiety were at least 2.5 times as common than they were before the pandemic. in among expectant mothers (Liu et al., 2021).

Anxious to Lose a Caregiver

Prenatal sadness and/or anxiety symptoms that were more severe were linked self-reports with COVID-19, jobs that increase COVID-19 risk and distress due to Pregnancy care adjustments, job loss, childcare difficulties, and food insecurity (Avalos et al., 2022). Changes in parenting were also significantly associated with an increased likelihood of anxiety and sadness. Similar results from other studies of expectant women during the COVID-19 pandemic have been published, underscoring the significance of public health policies in providing financial choices for assistance and child care, particularly during times of crisis (Avalos et al., 2022).

During the perinatal period, Social assistance for moms reportedly declined during the COVID-19 the pandemic, and this was related to worse mental health. (Judy Zhou et al, 2021). Other research has also stated that parents experience increased anxiety around pregnancy, birth, worrying concerning their emotional health and mental well-being, and physical health. Increased anxiety also occurs due to reduced provision of health services, loss of social and familial support. Although only a small percentage of respondents mentioned some favorable effects from the lockdown, like increased family ties, numerous respondents claimed to feel alone, neglected and overpowering. This is of course related to the development and socialization of their babies. Alexandra Rhodes, et al, 2020).

CONCLUSION

Based on the study's findings, the main triggers for anxiety in pregnant women at the time of Covid-19 pandemic were a history of depression and loss of caregivers. Meanwhile, pregnancy complications, limited food ingredients, and anxiety about the environment with high cases of COVID-19 are additional trigger factors.

SUGGESTIONS

Regional coverage needs to be expanded within the scope of the city or district so that the results can be used for decision making in the city or district. Variables that trigger anxiety are still lacking, so it needs to be examined by involving other variables. Modeling analysis will be better at describing interactions between variables in triggering anxiety in pregnant women.

ACKNOWLEDGEMENT

Financial support in this study was provided by the Poltekkes of the Ministry of Health Malang with a research contract no HK.03.01/1/0953/2022 dated February 7, 2022 concerning Research on Health Worker Development.

FUNDING

Financial support is provided by Poltekkes Kemenkes Malang starting from the preparation of proposals to reporting research results including research outputs.

CONFLICTS OF INTEREST

The authors declare no potential conflict of interest

AUTHOR CONTRIBUTIONS

The main researcher plays a role in preparing proposals and reporting results. Other researchers play a role in data collection, data analysis, preparation of the output of the study, and assisting the main researcher in the preparation of the final report.

REFERENCE

- Abdul Latif, NI, Mohamed Ismail, NA, Loh, SYE, Nur Azurah, AG, Midin, M., Shah, SA, & Kalok, A. (2022). Psychological Distress and COVID-19 Related Anxiety among Malaysian Women during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, 19(8), 1–13. <https://doi.org/10.3390/ijerph19084590>
- Ahmad, M., & Vismara, L. (2021). The psychological impact of COVID-19 pandemic on women's mental health during pregnancy: A rapid evidence review. *International Journal of Environmental Research and Public Health*, 18(13). <https://doi.org/10.3390/ijerph18137112>
- Avalos, LA, Nance, N., Badon, SE, Young-Wolff, K., Ames, J., Zhu, Y., Hedderson, MM, Ferrara, A., Zerbo, O., Greenberg, M., & Croen, L.A. (2022). Associations of COVID-19-Related Health, Healthcare and Economic Factors With Prenatal Depression and Anxiety. *International Journal of Public Health*, 67(May), 1–10. <https://doi.org/10.3389/ijph.2022.1604433>
- Awad-Sirhan, N., Simó-Teufel, S., Molina-Muñoz, Y., Cajiao-Nieto, J., & Izquierdo-Puchol, MT (2022). Factors associated with prenatal stress and anxiety in pregnant women during COVID-19 in Spain. *Enfermeria Clinica*, 32, S5–S13. <https://doi.org/10.1016/j.enfcli.2021.10.006>
- Aziz, M.A. (2020). Recommendations for Handling Corona Virus Infection (Covid-19) in Maternal (Pregnancy, Maternity and Postpartum). In *Management of Corona Virus Infection in Maternal* (Vol. 1, Issue 3).
- Benke, C., Autenrieth, L., Asselmann, E., & Pané-Farré, CA (2020). Lockdown, quarantine measures, and social distancing: Associations with depression, anxiety and distress at the beginning of the COVID-19 pandemic among adults from Germany. *Psychiatry Research [revista en Internet]* 2020 [acceso 2 de mayo de 2021]; 293(20. *Psychiatry Res.*, 293(January), 113462. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7500345/pdf/main.pdf>
- BPS City of Kediri. (2020). Number of Pregnant Women Visiting K1, Visiting K4, Chronic Energy Deficiency (KEK), and Receiving Iron (Fe) Tablets in Kediri City, 2012–2019. Central Bureau of Statistics for the City of Kediri.
- Brooks, SK, Webster, RK, Smith, LE, Woodland, L., Wessely, S., Greenberg, N., & Rubin, GJ (2020). The Psychological Impact of Quarantine and How to Reduce It: Rapid Review of the Evidence. *SSRN Electronic Journal*, January. <https://doi.org/10.2139/ssrn.3532534>
- Bryson H, Mensah F, Price A, Gold L, Mudiyansele SB, Kenny B, Dakin P, Bruce T, Noble K, Kemp L, Goldfeld I S. (2021). Clinical, financial and social impacts of COVID-19 and their associations with mental health for mothers and children experiencing adversity in Australia. *Plos One*.2021 Sep 13;16(9):e0257357<https://pubmed.ncbi.nlm.nih.gov/34516564/>
- Cui, C., Zhai, L., Sznajder, KK, Wang, J., Sun, X., Wang, X., Zhang, W., Yang, F., & Yang, X. (2021). Prenatal anxiety and the associated factors among Chinese pregnant women during the COVID-19 pandemic—a smartphone questionnaire survey study. *BMC Psychiatry*, 21(1), 1–10.

- <https://doi.org/10.1186/s12888-021-03624-1>
- E., JK, Atkinson, L., Bennett, T., Jack, SM, & Gonzales, A. (2021). COVID-19 and mental health during pregnancy: The Importance of cognitive appraisal and social support. *Journal of Affective Disorders*, 1161–1169.
- Fitzpatrick K, Harris C, & Drawve G. (2020). Fear of COVID-19 and the Mental Health Consequences in America. *Psychological Trauma: Theory, Research, Practice, and Policy [revista en Internet]* 2020 [acceso 14 de febrero de 2021]; 12:1-5. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12, 17–21. <https://content.apa.org/fulltext/2020-38568-001.pdf>
- Giesbrecht, GF, Rojas, L., Patel, S., Kuret, V., & Mackinnon, AL (2020). Fear of COVID-19, mental health, and pregnancy outcomes in the pregnancy during the COVID-19 pandemic study Fear of COVID-19 and pregnancy outcomes. *Journal of Affective Disorders*, 299(January), 483–491. <https://doi.org/https://doi.org/10.1016/j.jad.2021.12.057>
- Grumi, S., Provenzi, L., Accorsi, P., Biasucci, G., Cavallini, A., Decembrino, L., Falcone, R., Fazzi, EM, Gardella, B., Giacchero, R., Guerini, P., Grossi, E., Magnani, ML, Mariani, EM, Nacinovich, R., Pantaleo, D., Pisoni, C., Prefumo, F., Sabatini, C., ... Borgatti, R. (2021). Depression and Anxiety in Mothers Who Were Pregnant During the COVID-19 Outbreak in Northern Italy: The Role of Pandemic-Related Emotional Stress and Perceived Social Support. *Frontiers in Psychiatry*, 12(September), 1–9. <https://doi.org/10.3389/fpsy.2021.716488>
- Ilska, M., Brandt-Salmeri, A., Kołodziej-Zaleska, A., Preis, H., Rehbein, E., & Lobel, M. (2022). Anxiety among pregnant women during the first wave of the COVID-19 pandemic in Poland. *Scientific Reports*, 12(1), 10–17. <https://doi.org/10.1038/s41598-022-12275-5>
- Iwanowicz-Palus, G., Mróz, M., Korda, A., Marcewicz, A., & Palus, A. (2022). Perinatal Anxiety among Women during the COVID-19 Pandemic—A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, 19(5). <https://doi.org/10.3390/ijerph19052603>
- Kassaeva, P., Belova, E., Shashina, E., Shcherbakov, D., Makarova, V., Ershov, B., Sukhov, V., Zabroda, N., Sriraam, N., Mitrokhin, O., & Zhernov, Y. (2022). Anxiety, Depression, and Other Emotional Disorders during the COVID-19 Pandemic: A Narrative Review of the Risk Factors and Risk Groups. *Encyclopedia*, 2(2), 912–927. <https://doi.org/10.3390/encyclopedia2020060>
- Kicia, M., Iwanowicz-Palus, G., Korzyńska-Piętas, M., Skurzak, A., Krysa, J., & Szlendak, B. (2018). The selection of strategies for coping with stress at midwife and nurse's work. *Journal of Education, Health and Sport.*, 8(3), 312–320.
- Lequertier, B., McLean, MA, Kildea, S., King, S., Keedle, H., Gao, Y., Boyle, JA, Agho, K., & Dahlen, HG (2022). Perinatal Depression in Australian Women during the COVID-19 Pandemic: The Birth in the Time of COVID-19 (BITTOC) Study. *International Journal of Environmental Research and Public Health*, 19(9), 1–17. <https://doi.org/10.3390/ijerph19095062>
- Liu, J., Hung, P., Alberg, AJ, Hair, NI, Whitaker, KM, Simon, J., & Taylor, SK (2021). Mental health among pregnant women with COVID-19 related stressors and worries in the United States. *Birth*, 48, 470–479.
- Luo, M., Guo, L., Yu, M., Jiang, W., & Wang, H. (2020). Since January 2020 Elsevier has created a COVID-19 resource center with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource center is hosted on Elsevier Connect, the company's public news and information. *Psychiatry Research*, 291(January).
- Luong, TC, Pham, TTM, Nguyen, MH, Do, AQ, Pham, LV, Nguyen, HC, Nguyen, HC, Ha, TH, Dao, HK, Trinh, MV, Do, TV, Nguyen, HQ, Nguyen, TTP, Tran, CQ, Tran, KV, Duong, TT, Pham, HX, Do, TT, Nguyen, PB, ... Duong, T. Van. (2021). Fear, anxiety and depression among pregnant women during the COVID-19 pandemic: impacts of healthy eating behavior and health literacy. *Annals of Medicine*, 53(1),

- 2120–2131.
<https://doi.org/10.1080/07853890.2021.2001044>
- Morris, JR, Jaswa, E., Kaing, A., Hariton, E., Andrusier, M., Aliaga, K., Davis, M., Cedars, MI, & Huddleston, HG (2022). Early pregnancy anxiety during the COVID-19 pandemic: preliminary findings from the UCSF ASPIRE study. *BMC Pregnancy and Childbirth*, 22(1), 1–12. <https://doi.org/10.1186/s12884-022-04595-1>
- Özdin, S., & Bayrak Özdin, Ş. (2020). Levels and predictors of anxiety, depression and health anxiety during the COVID-19 pandemic in Turkish society: The importance of gender. *International Journal of Social Psychiatry*, 66(5), 504–511. <https://doi.org/10.1177/0020764020927051>
- Puertas-Gonzalez, JA, Romero-Gonzalez, B., Mariño-Narvaez, C., Cruz-Martinez, M., & Peralta-Ramirez, MI (2021). La Cognitiva-Conductual Therapy Como Amortiguadora De Los Efectos Psicológicos Negativos Del Confinamiento Por La Covid-19 En Mujeres Embarazadas. *Salud Publica*, 95(12), 10.
- Rohmah, MK, & Nurdianto, AR (2020). Corona Virus Disease 2019 (Covid-19) in Pregnant Women and Infants: a Literature Review. *Medica Hospitalia*, 7(1A), 329–336.
- Rhodes A, Khireddine S, Smith AD. Experiences, Attitudes, and Needs of Users of a Pregnancy and Parenting App (Baby Buddy) During the COVID-19 Pandemic: Mixed Methods Study. *JMIR Mhealth Uhealth*. 2020 Dec 9;8(12):e23157. <https://pubmed.ncbi.nlm.nih.gov/33264100/>
- Sianipar, K. (2018). Factors Affecting the Level of Anxiety of Pregnant Women in Facing Primigravida Labor Processes in Independent Practice Midwives, Bosar Maligas District, Simalungun Regency. *Journal of Reproductive Health*, 3(1), 10–21.
- Sukaedah, E., & Fadilah, L. (2016). Correlation between Education Level and Husband's Support with Levels of Anxiety in Primigravida Trimester III Mothers. *Journal of Medicine (Health Information Media)*, 3(April), 56–62.
- Tyastuti, S. (2016). *Pregnancy Midwifery Care*. Ministry of Health of the Republic of Indonesia.
- Vindegard, N., & Benros, ME (2020). Since January 2020 Elsevier has created a COVID-19 resource center with free information in English and Mandarin on the novel coronavirus COVID-19 . The COVID-19 resource center is hosted on Elsevier Connect , the company's public news and information. *Brain, Behavior, and Immunity*, 89(January), 531–542.
- Wilson, AN, Sweet, L., Vasilenski, V., Hauck, Y., Wynter, K., Kuliukas, L., Szabo, RA, Homer, CSE, & Bradifield, Z. (2022). Australian women's experiences of receiving maternity care during the Covid-19 pandemic: A cross-sectional national survey. *Birth*, 49, 30–39.
- Zhoua J, Havens KL, Starnes CP, Pickering TA, Brito NH, Hendrix CL, Thomasone ME, Vatarloe TC, Smith BA. (2021). Changes in social support of pregnant and postnatal mothers during the COVID-19 pandemic. *Midwifery*. Dec;103:103162. <https://pubmed.ncbi.nlm.nih.gov/34649034/>.