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The Prevalence of Depression Symptoms among Pregnant Women during the Second Wave of COVID-19

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Abstract

BACKGROUND: Pregnant women are vulnerable to depression. We hypothesized that the COVID-19 pandemic would increase depression in pregnancy leading to complications to both mother and fetus.

AIM: This study is aimed to identify antenatal depression symptoms during the second wave COVID-19 pandemic.

METHODS: This was a community-based, cross-sectional study conducted from 10 to 21 June 2021. A number of 130 pregnant women were recruited through both convenience and snowball sampling. An online survey with self-administered Whooley questions was used to assess antenatal depression symptoms.

RESULTS: We found elevated antenatal depression symptoms similar to other countries during the COVID-19 pandemic. The prevalence of pregnant women with depression symptoms was 42.3%. The majority of pregnant women who had antenatal depression symptoms had the following characteristics: About 44.75% lived outside Jakarta, 60% had low education (Junior high school and below), 42.9% aged 20–35 years, and 44.8% of them were housewives.

CONCLUSION: In Indonesia, the second wave of COVID-19 pandemic affected increasing symptoms of depression among pregnant women. Positive protective factors should be taken to prevent negative impacts of both unidentified and untreated antenatal depression among the pregnant women for the sake of maternal and child health.

Introduction

Depression and anxiety disorder are the common mental disorders in pregnancy. Globally, the prevalence of depression and anxiety disorder in pregnant women has found to be about 1–37%. The Low and Middle Income Countries (LMICs) have 2 times higher rate of depression than the High Income Countries (HICs) [1], [2]. Before the COVID-19 pandemic, the prevalence of antenatal depression in Indonesia was 15%, China 13.7%, Pakistan 81%, Ethiopia 21.5%, and Australia 6.2% [3], [4], [5], [6], [7].

In normal situations, there is still low awareness of the pregnant women's mental health during antenatal care. Many cases of depression (50–70%) in pregnant women were unidentified or under diagnosed and under reported. Only approximately 20% of the pregnant women of identified cases were getting treatment in health-care facilities [8], [9]. Unidentified and untreated antenatal depression will have several adverse consequences on maternal and fetal health. They may be associated with postpartum depression, premature death (suicide), disability, as well as low birth weight, stunting, and social-emotional problems of the child [10], [11], [12], [13], [14], [15].

During the second wave of COVID-19 pandemic, pregnant women faced heavy challenges: risk of infection with a greater severity of the COVID-19 disease, limited access to antenatal care, and other social-economic problems. In fact, the COVID-19 pandemic has increased the risk of antenatal depression. Recent studies have found the prevalence of depression symptoms in pregnant women were 40.7% in worldwide sample [16], 37% in Canada [17], and 44.2% in Egypt [18].

The National Task Force for COVID-19 in Indonesia announced that Indonesia was in the second wave of COVID 19 on June, 2021 with an additional 21.345 confirmed cases in a single day [19]. This was a crucial condition and due to Large Scale Social Restrictions implemented by the government the vulnerable population like pregnant women were affected. The pregnant women were unable and were limited in getting antenatal care and feared delivery in healthcare facilities. We assumed that the second wave

of COVID-19 increased the risk of antenatal depression in Indonesia. Accordingly, this study aimed to identify early depression symptoms among pregnant women during the second wave of COVID-19 in the country.

Methods

Study design

This was a cross-sectional or survey study conducted from June 10–21, 2021. The minimal sample size of this survey study was 108 pregnant women which were calculated with a confidence level of 95%, margin of error 5%, and proportion population of 40.7%. This study recruited 130 pregnant women who filled out voluntarily self-administered questionnaire online through Google form. Data were collected through both convenience and snowball sampling.

The inclusion criteria in this study were the pregnant women who had cell phones, and no complications or diseases in pregnancy. The exclusion criteria if pregnant women filled questionnaires more than once, had mental health disorders or were getting mental care.

First, we distributed the questionnaire via online involving midwives in primary health-care centers in Depok and Jakarta. We used online data collection due to Indonesian government rules that restricted the visit of pregnant women physically to antenatal care facilities. The midwives shared the link of study via their WhatsApp groups with the pregnant women. Apparently, the pregnant women who had filled out the questionnaire disseminated it to their families and other pregnant women outside Depok and Jakarta area. Therefore, this study involved pregnant women from several regions in Indonesia.

Measurement

This is a short survey to pregnant women, the average time for filing the questionnaire through online was 2–5 min. The questionnaire included two parts. The first part inquired about demographic characteristics of the participants. The second part was assessment of depression symptoms using The Whooley Questions.

The Whooley questions are a short tool that has been validated in many countries but has not been validated in Indonesia, where it identified symptoms of early depression. The Whooley questions were used in this study as an initial exploration in the COVID-19 pandemic which became a heavy burden for pregnant women. The use of this instrument was as a pre-screening. The Whooley questions consist of two short questions with “Yes or No” answers. A score of > 1 is interpreted as a symptom of positive depression [20], [21].

Ethical approval

The Ethics Commission of the Faculty of Public Health, Universitas Indonesia approved the study on October 21th, 2020 (Approval No: Ket-627/UN2.F10.D11/PPM.00.02/2020). Before participating in the study all pregnant women completed the informed consent form. Among the research team there was no conflict of interest in this study.

Statistical analysis

Data were statistically described in terms of mean and standard deviation for continuous variables, frequencies and percentages for categorical variables. We used Chi-Square test for analysis of categorical variables.

Results

We recruited 67 (51.5%) housewives and 63 (48.5%) employees. The majority of the participants in the study were in their second and third trimester of pregnancy, highly educated, and lived outside Jakarta. This was shown in Table 1.

Table 1: Demographic characteristics of the studied population

Variables	Mean ± SD	Minimum	Maximum	n = 130, n (%)
Age (years)	28.18 ± 4.45	20	40	
Gestational age (weeks)	24.84 ± 9.38	5	39	
City				
Jakarta				36 (27.7)
Outside Jakarta				94 (72.3)
Education				
Low (junior high school and below)				20 (15.4)
High (senior high school and above)				110 (84.6)
Occupation				
Housewife				67 (51.5)
Employee				63 (48.5)

SD: Standard deviation.

The prevalence of depression symptoms among the pregnant women was 55 (42.3%). This study also showed that the pregnant women who lived in Jakarta had lower percentage of antenatal depression symptoms (36.1%) than the pregnant women who lived in other regions (44.75%). Twelve (60%) pregnant women with the lower education had antenatal depression symptoms, while pregnant women with higher education only 43 (39.1%) had antenatal depression symptoms (Table 2).

Discussion

This study was conducted to identify early depression symptoms among pregnant women during the second wave of COVID-19. Pregnant participants

Table 2: Comparison of the demographic characteristics' pregnant women with and without depression symptoms based on The Whooley Questions

Variables	With depression symptoms (n = 55), n (%)	Without depression symptoms (n = 75), n (%)	p
Region			
Jakarta	13 (36.1)	23 (63.9)	0.492
Outside Jakarta	42 (44.7)	52 (55.3)	
Age group			
20–35	51 (42.9)	68 (57.1)	0.922
>36	4 (36.4)	7 (63.6)	
Gestational trimester			
1st trimester	8 (42.1)	11 (57.9)	0.931
2nd trimester	24 (40.7)	35 (59.3)	
3rd trimester	23 (44.2)	29 (55.8)	
Education			
Low (junior high school and below)	12 (60)	8 (40)	0.135
High (senior high school and above)	43 (39.1)	67 (60.9)	
Occupation			
Housewife	30 (44.8)	37 (55.2)	0.682
Employee	25 (39.7)	38 (60.3)	

reported increased depression symptoms. The results of the study described the condition of mental health in pregnant women during the COVID-19 pandemic, even though there was no significant association between demographic characteristics with antenatal depression symptoms.

These findings highlighted that in Indonesia (June, 2021) higher symptoms of depression were associated with increasing cases of COVID-19 in June 2021 in Indonesia. There was more concern about maternal and child healthcare because of the COVID-19 pandemic. Elevated symptoms of depression were higher than prevalence based on a previous cross sectional study before COVID-19 pandemic in Indonesia [3]. There was an urgent need to promote mental health and reduce depression symptoms in pregnancy by early identification and detection of antenatal depression symptoms.

Increasing COVID-19 cases in the second wave and implementation of the Large Scale Social Restrictions Policy on the community caused negative feelings (distress, worry, and fear) for pregnant women [18], [22]. Most concern was with pregnant women who were housewives, as they were likely to face financial instability, and bored with restrictions of routine activities related to the pandemic. On the other hand, pregnant women who still worked needed to be aware of the high risk of contracting COVID-19 infection at work.

We found positive influence between the preparedness of local government and numerous pregnant women with depression symptoms. Jakarta is one of the cities in Indonesia which began early preparations in January 2020 to handling of the COVID-19 [23]. This provided a sense of comfort and safety for the community, including pregnant women, and increased a positive experience in pregnancy. However, the government should not only focus on handling and controlling the COVID-19, but also should be aware in disaster management of the psychological impact of the COVID-19 pandemic [24].

This study also found that education was a positive factor to prevent depression symptoms in pregnant women. The pregnant women with high education were able to better filter information about the COVID-19, and minimized negative news or hoaxes causing fear and worry [25].

In Indonesia, this is the first study to identify early depression symptoms in pregnant women during the second wave of COVID-19. We used The Whooley Questions which consists of only two questions with binomial answers (Yes or No). It is very useful in the healthcare facilities to pre-screening mental health of pregnant women with limited antenatal visits and social distancing. This online survey arranged that the participants had to fill out all the questions, and could not leave any of them unanswered.

However, this study had a few limitations. Although the recent study in South Africa showed its sensitivity 78.6% and specificity 72.6% [21], the Whooley Questions that we used in this study have not yet been validated in Indonesia. Furthermore, the sample size was small and included only a few demographic characteristics, limiting the results in this study. The majority of pregnant women who participated in this study were of high academic level and lived outside Jakarta. An online survey could have certain biases to the data. Assessing antenatal depression in a longitudinal study is suggested to be done in further studies.

Conclusion

Approximately one-half of the pregnant women had early depression symptoms during the second wave of the COVID-19. If mental health in pregnancy during COVID-19 pandemic and then in new era adaptation are neglected, many cases of antenatal depression will be unidentified and untreated. It can increase both mortality and morbidity of maternal and child direct or indirectly. Screening as an early detection of the symptoms of depression should be done as a prevention of mental health disorder in pregnancy.

References

1. Jha S, Salve HR, Goswami K, Sagar R, Kant S. Burden of common mental disorders among pregnant women: A systematic review. Asian J Psychiatr. 2018;36:46-53. https://doi.org/10.1016/j.ajp.2018.06.020 PMid:29966886
2. Dadi AF, Miller ER, Bisetegn TA, Mwanri L. Global burden of antenatal depression and its association with adverse

birth outcomes: An mmbrella review. BMC Public Health. 2020;20(1):173. https://doi.org/10.1186/s12889-020-8293-9

3. Anindyajati G, Ismail RI, Diatri H, Elvira SD. Antenatal depression and its determinant factors in urban community setting. Adv Sci Lett. 2017;23(4):3439-41. https://doi.org/10.1166/asl.2017.9122
4. Wang Y, Wang X, Liu F, Jiang X, Xiao Y, Dong X, *et al*. Negative life events and antenatal depression among pregnant women in rural china: The Role of negative automatic thoughts. PLoS One. 2016;11(12):e0167597. https://doi.org/10.1371/journal.pone.0167597
PMid:27977715
5. Jafri SA, Ali M, Ali R, Shaikh S, Abid M, Aamir IS. Prevalence of depression among pregnant women attending antenatal clinics in Pakistan. Acta Psychopathol. 2017;3(5):3-7. https://doi.org/10.4172/2469-6676.100126
6. Duko B, Ayano G, Bedaso A. Depression among pregnant women and associated factors in Hawassa city, Ethiopia: An institution-based cross-sectional study. Reprod Health. 2019;16(1)25. https://doi.org/10.1186/s12978-019-0685-x
PMid:30819195
7. Ogbo FA, Eastwood J, Hendry A, Jalaludin B, Agho KE, Barnett B, *et al*. Determinants of antenatal depression and postnatal depression in Australia. BMC Psychiatry. 2018;18(1):49. https://doi.org/10.1186/s12888-018-1598-x
PMid:29463221
8. Littlewood E, Ali S, Ansell P, Dyson L, Gascoyne S, Hewitt C, *et al*. Identification of depression in women during pregnancy and the early postnatal period using the whooley questions and the edinburgh postnatal depression scale: Protocol for the born and bred in yorkshire: Perinatal depression diagnostic accuracy (baby panda) study. BMJ Open. 2016;6(6):e011223. https://doi.10.1136/bmjopen-2016-011223
PMid:27297012
9. O'Connor E, Rossom RC, Henninger M, Groom HC, Burda BU. Primary care screening for and treatment of depression in pregnant and postpartum women: Evidence report and systematic review for the US Preventive Services Task Force. JAMA. 2016;315(4):388-406. https//doi.org/10.1001/jama.2015.18948
PMid:26813212
10. Silva F, Conde A, Costa R. Impact of prenatal depressive symptoms on postpartum depressive symptoms: Mediation effect of perinatal health. Span J Psychol. 2018;21:E28. https://doi.org/10.1017/sjp.2018.29
PMid:30056815
11. Arachchi NS, Ganegama R, Husna AW, Chandima DL, Hettigama N, Premadasa J. *et al*. Suicidal ideation and intentional self-harm in pregnancy as a neglected agenda in maternal health: An experience from rural Sri Lanka. Reprod Health. 2019;16(1):166. https://doi.10.1186/s12978-019-0823-5
12. Bindt C, Appiah-Poku J, Te Bonle M, Schoppen S, Feldt T, Barkmann C, *et al*. Antepartum depression and anxiety associated with disability in African women: Cross-sectional results from the CDS study in Ghana and Cote d'Ivoire. PLoS One. 2012;7(10):e48396. https://doi.org/10.1371/journal.pone.0048396
PMid:23110236
13. Bennett IM, Schott W, Krutikova S, Behrman JR. Maternal mental health and child growth and development in four low-income and middle-income Countries. J Epidemiol Community Health. 2016;70(2):168-73.https://doi.org/10.1136/jech-2014-205311
PMid:26359503
14. Girma S, Fikadu T, Abdisa E. Maternal common mental disorder as predictors of stunting among children aged 6-59 months in Western Ethiopia: A case-control study. Int J Pediatr. 2019;2019:4716482. https://doi.org/10.1155/2019/4716482
PMid:30956676
15. Sinclair I, St-Pierre M, Roofigari N, Buffa G, Dahan S, Rondeau JJ. *et al*. Prenatal stress and child development: A scoping review of research in low-and middle-income countries. PLoS One. 2018;13(12):e0207235. https://doi.org/10.1371/journal.pone.0207235
PMid:30592715
16. Davenport MH, Meyer S, Meah VL, Strynadka MC, Khurana R. Moms are not oK: COVID-19 and maternal mental health. Front Glob Womens Health. 2020;1:1. https://doi.org/10.3389/fgwh.2020.00001
PMid:34816146
17. Lebel C, Mackinnon A, Bagshawe M, Tomfohr-madsen L, Giesbrecht G. Elevated depression and anxiety symptoms among pregnant individuals during the COVID-19 pandemic. J Affect Disord. 2020;277:5-13. https://doi.org/10.1016/j.jad.2020.07.126
PMid:32777604
18. Khamees RE, Taha OT, Ali TY. Anxiety and depression during pregnancy in the era of COVID-19. J Perinat Med. 2021;49(6):674-7. https://doi.org/10.1515/jpm-2021-0181
PMid:34062628
19. Indonesia Fights Back the COVID-19 Second Wave; 2021. Available from: https://www.covid19.go.id/p/berita/indonesia-fights-back-covid-19-second-wave [Last accessed on 2021 Nov 15].
20. McKenna A, Abrahams Z, Marsay C, Honikman S. Screening for common perinatal mental disorders in South Africa. South African Perinatal Mental Health Screening Advisory; 2017. p. 1-42. Available from: https://www.pmhp.za.org [Last accessed on 2020 Feb 15].
21. Marsay C, Manderson L, Subramaney U. Validation of the whooley questions for antenatal depression and anxiety among low-income women in urban South Africa. S Afr J Psychiatr. 2017;23:1013. htpps://doi.org/:10.4102/sajpsychiatry.v23i0.1013
PMid:30263185
22. Lopez-Morales H, Del Valle MV, Canet-Juric L, Andres ML, Galli JI, Poo F, *et al*. Mental health of pregnant women during the COVID-19 pandemic: A longitudinal study. Psychiatry Res. 2021;295:113567. https://doi.org/10.1016/j.psychres.2020.113567
PMid:33213933
23. Kementerian Pembangunan Perencanaan Nasional/Bappenas. Studi Pembelajaran Penanganan COVID-19 Indonesia. 1st ed. Jakarta, Indonesia: Kementerian Perencanaan Pembangunan Nasional/Badan Perencanaan Pembangunan Nasional (Bappenas); 2021. p. 167.
24. Sheek-Hussein M, Abu-Zidan FM, Stip E. Disaster management of the psychological impact of the COVID-19 pandemic. Int J Emerg Med. 2021;14(1):19. https://doi.org/10.1186/s12245-021-00342-z
PMid:33761863
25. World Health Organization. Mental Health and Psychosocial Considerations during the COVID-19 Outbreak. Geneva: World Health Organization; 2020. p. 1-6. Available from: https://www.who.int/docs/default-source/coronaviruse/mental-health considerations.pdf [Last accessed on 2021 Nov 19].