

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Mental health of pregnant and postpartum women during the third wave of the Covid-19 pandemic – a European cross-sectional study
<b>AUTHORS</b>	Tauqeer, Fatima; Ceulemans, Michael; Gerbier, Eva; Passier, Anneke; Oliver, Alison; Foulon, Veerle; Panchaud, Alice; Lupattelli, Angela; Nordeng, Hedvig

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Stepan Feduniw Centrum Medyczne Kształcenia Podyplomowego, Department of Reproductive Health
<b>REVIEW RETURNED</b>	08-Jul-2022

<b>GENERAL COMMENTS</b>	<p>I am pleased to have the possibility to review the study “Mental health of pregnant and postpartum women during the third wave of the Covid-19 pandemic – a European cross-sectional study”. The discussed problem of the current pandemic’s influence has a meaningful impact on maternal and children’s health. The size of the study population, the time of included patients and the character of the study are undoubtful study strengths. Another advantage of the study is its multicentral and Europe-wide character. Only a few remarks should be made.</p> <p>The introduction section is a well-constructed part of the study. It presents a perfect overview of what is known in the field of mental disturbance assessment in the COVID pandemic era. I would also suggest looking at a systematic review of women’s behaviour patterns according to crises published in 2021 under the doi 10.1080/0167482X.2021.1985453.</p> <p>The aim of the study is well established and well presented. I also have no reservations about the Methodological part and used statistical methods. The study is conducted according to STROBE guidelines for cross-sectional studies. PICO question is well described, and the inclusion and exclusion criteria are well presented.</p> <p>The results sections were presented very clearly and consisted of the information introduced in the study’s aim. Nevertheless, the secondary outcomes were not discussed enough in the discussion section. I would strongly suggest completing the discussion with the interpretation of the secondary outcomes of the study.</p>
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<b>REVIEWER</b>	Hannah Dahlen Western Sydney University, School of Nursing and Midwifery
<b>REVIEW RETURNED</b>	10-Jul-2022

<b>GENERAL COMMENTS</b>	Thank you for the opportunity to review the paper: Mental health of pregnant and postpartum women during the third wave of the Covid-
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	<p>19 pandemic – a European cross-sectional study</p> <p>Abstract</p> <p>Participants: Pregnant and postpartum women up to 3 months postpartum, older than 18 years of age.</p> <p>The correct title is Edinburgh Postnatal Depression Scale (EPDS) not EDS. Please correct throughout the paper</p> <p>Results</p> <p>How did you get a standardisation of education levels in the different countries where they all have different systems? Can you explain more in the methods as not until you look at the survey at the end that you see this.</p> <p>Page 8 line 21 “Depression and anxiety disorders were grouped into chronic mental illnesses.” Do you mean pre-existing depression and anxiety prior to pregnancy? If so make clear and if not differentiate. I would not use the term chronic if this is the case.</p> <p>As the majority of participants were from one country, Norway, it is important to see how representative the populations were who responded to the survey. Can you provide some general demographics for childbearing women in these countries. Did you think about sample weighting to reduce bias associated with the online survey, including oversampling of certain maternal age groups?</p> <p>What does professionally active or not professionally active. Need to make this easier to understand. What is included in low, medium and high education and as stated before how do you account for differences in education between countries. You need to define this in methods.</p> <p>Most of your respondents were multiparous. This needs more attention in the manuscript as a limitation and why this may have been the case. Why did you not find out how many were primiparous and multiparous in the postnatal women?</p> <p>Why were the postnatal women not asked if their pregnancy was planned?</p> <p>With breastfeeding, pregnant women could have been feeding another infant or toddler. Was this not considered? Also why was a previous breastfeeding experienced not asked of the pregnant women considered the vast majority were multiparous?</p> <p>Table 3 is hard to follow. Can you fix up the lines and make the CI go in one line. The same with table 4</p> <p>Can you give some comparisons for the EPDS and GAD-7 between countries? Did the higher prevalence between the waves vary between countries?</p> <p>Discussion</p> <p>Page 18 line 9. I would not use the word Inventoried (not a statistical</p>
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	<p>or scientific term!)</p> <p>If you are going to add Supp table 3 you really need to explain the analysis in the methods. I would not include this.</p>
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### VERSION 1 – AUTHOR RESPONSE

Reviewer: 1

Dr. Stepan Feduniw, Centrum Medyczne Kształcenia Podyplomowego

Comments to the Author:

I am pleased to have the possibility to review the study “Mental health of pregnant and postpartum women during the third wave of the Covid-19 pandemic – a European cross-sectional study”. The discussed problem of the current pandemic's influence has a meaningful impact on maternal and children's health. The size of the study population, the time of included patients and the character of the study are undoubtful study strengths. Another advantage of the study is its multicentral and Europewide character. Only a few remarks should be made.

Comment 1: The introduction section is a well-constructed part of the study. It presents a perfect overview of what is known in the field of mental disturbance assessment in the COVID pandemic era. I would also suggest looking at a systematic review of women's behaviour patterns according to crises published in 2021 under the doi 10.1080/0167482X.2021.1985453.

Reply 1: We have now added the relevant systematic review as a reference in the introduction (lines 3-4).

Comment 2: The aim of the study is well established and well presented. I also have no reservations about the Methodological part and used statistical methods. The study is conducted according to STROBE guidelines for cross-sectional studies. PICO question is well described, and the inclusion and exclusion criteria are well presented.

Reply 2: We thank the reviewer for this comment.

Comment 3: The results sections were presented very clearly and consisted of the information introduced in the study's aim. Nevertheless, the secondary outcomes were not discussed enough in the discussion section. I would strongly suggest completing the discussion with the interpretation of the secondary outcomes of the study.

Reply 3: In light of this comment, we have re-phrased parts of discussion to clearly state our secondary outcomes and their interpretation (lines 337; 355 – 357; 361 - 363).

Reviewer: 1

Competing interests of Reviewer: Nothing to declare

Reviewer: 2

Prof. Hannah Dahlen, Western Sydney University

Comments to the Author:

Thank you for the opportunity to review the paper: Mental health of pregnant and postpartum women during the third wave of the Covid-19 pandemic – a European cross-sectional study

Comment 1: Abstract; Participants: Pregnant and postpartum women up to 3 months postpartum, older than 18 years of age. The correct title is Edinburgh Postnatal Depression Scale (EPDS) not EDS. Please correct throughout the paper

Reply 1: EPDS was developed to screen for postnatal depression in women. Since we have used EPDS in both pregnant and postpartum women, we have referred it as EDS to reflect the broadening of its use as mentioned by Cox . Some of the recent publications have also used EDS terminology .

Comment 2: Results: How did you get a standardisation of education levels in the different countries where they all have different systems? Can you explain more in the methods as not until you look at the survey at the end that you see this.

Reply 2: We are grateful for the reviewer's careful reading of our manuscript and have included this information in the methods (line 108 - 112), which reads "The educational level was categorised into low, medium, and high according to national definitions as low = primary education; medium = professional secondary education, technical secondary education, artistic secondary education, general secondary education, and high = professional bachelor, academic bachelor, master and/or PhD."

Comment 3: Page 8 line 21 "Depression and anxiety disorders were grouped into chronic mental illnesses." Do you mean pre-existing depression and anxiety prior to pregnancy? If so make clear and if not differentiate. I would not use the term chronic if this is the case.

Reply 3: We apologise for the confusing term. By chronic depression and anxiety, we meant pre-existing illnesses as stated in the methods (line 118 - 120). We have amended this term as 'pre-existing mental illnesses' in the manuscript as follow:

"Depression and anxiety disorders were grouped into pre-existing mental illnesses."

Comment 4: As the majority of participants were from one country, Norway, it is important to see how representative the populations were who responded to the survey. Can you provide some general demographics for childbearing women in these countries. Did you think about sample weighting to reduce bias associated with the online survey, including oversampling of certain maternal age groups?

Reply 4: The supplementary material comprises of a supplementary table 2 that illustrates a comparison between the general birthing population and the study sample of pregnant and postpartum women in each country. The comparison between the general birthing population and the study sample in the supplementary table 2 informed the interpretation of results in terms of external validity.

We agree with the reviewer that application of survey weights would have been a good method to use, however statistics by age and education specifically in pregnant or postpartum women are not readily available in all countries for generating these weights. We understand that this could affect the variance of some variables; it also means that the population included in the analysis does not reflect a representative sample of the countries. We have mentioned this as a limitation in the limitation section (lines 389 – 408):

"We must rely on indirect measures, i.e., a comparison with national birthing population data, to assess the study's external validity (Supplementary Table 2)..." and

"We did not apply survey weights to take account of unequal sample selection, as demographic characteristics such as age and education specifically in pregnant or postpartum women are not readily available in all countries for generating these weights. This could affect the variance of some covariates; it also means that the population included in the analysis does not reflect a representative sample of the countries and might preclude the generalizability of results."

Comment 5: What does professionally active or not professionally active. Need to make this easier to understand. What is included in low, medium and high education and as stated before how do you account for differences in education between countries. You need to define this in methods.

Reply 5: Professional status was categorized into professionally active = employed, and not professionally active = student, homemaker, jobseeker, incapacitated or unemployed. The educational level was categorised into low, medium, and high according to national definitions as low = primary education; medium = professional secondary education, technical secondary education, artistic secondary education, general secondary education, and high = professional bachelor,

academic bachelor, master and/or PhD. We have added this description in the methods section (lines 106 - 112)

Comment 6: Most of your respondents were multiparous. This needs more attention in the manuscript as a limitation and why this may have been the case. Why did you not find out how many were primiparous and multiparous in the postnatal women?

Reply 6: For postnatal women, we did not ask women to report information on parity unfortunately. This is now clarified in the methods section, which reads: "Question on parity and pregnancy planning was only limited to pregnant women." (lines 114 – 115)

Comment 7: Why were the postnatal women not asked if their pregnancy was planned?

Reply 7: We agree with the reviewer that we could have included whether the pregnancy was planned for the postnatal women as well, as unplanned pregnancy is one of the most important risk factors for postnatal depression. However, to shorten the survey time and to cater more specifically to the postnatal experience, we limited our postnatal questions primarily for the immediate postpartum setting. This is now clarified in the methods section, which reads: "Question on parity and pregnancy planning was only limited to pregnant women." (lines 114 – 115)

Comment 8: With breastfeeding, pregnant women could have been feeding another infant or toddler. Was this not considered? Also why was a previous breastfeeding experienced not asked of the pregnant women considered the vast majority were multiparous?

Reply 8: We did not collect data specifically on breastfeeding among the pregnant sample. If a woman was at the same time pregnant and a recent mother, she was asked to provide information either on her current pregnancy or about the latest born child. This was done to simplify the questionnaire and to avoid confusion among the woman.

At the time of questionnaire design, we did not expect to have more multiparous women participating in the study, and we tried to focus the questionnaire on a single period in the woman's life, either pregnancy or recent motherhood. This choice was taken to enhance the accurate recall of women about all the factors measured in the study.

Comment 9: Table 3 is hard to follow. Can you fix up the lines and make the CI go in one line. The same with table 4

Reply 9: We thank the reviewer for this comment. We have modified the tables accordingly.

Comment 10: Can you give some comparisons for the EPDS and GAD-7 between countries? Did the higher prevalence between the waves vary between countries?

Reply 10: We thank the reviewer for this comment. We have modified Table 2 accordingly.

Comment 11: Discussion: Page 18 line 9. I would not use the word Inventoried (not a statistical or scientific term!)

Reply 11: We have now replaced this word with 'investigated'.

Comment 12: If you are going to add Supp table 3 you really need to explain the analysis in the methods. I would not include this.

Reply 12: Authors used their clinical judgement to select representative statements on predefined topics including mental health, vaccination and medication use. Such representative statements may provide the readers with more insight into women's experiences and reflections, and aid interpretation. We have now edited the methods section specifying the type of thematic analysis done for supplementary table 3, which reads, "All the responses were inductively categorised under predominant themes such as mental health, vaccination and medication use, using the clinical judgement approach."

## VERSION 2 – REVIEW

<b>REVIEWER</b>	Stepan Feduniw Centrum Medyczne Kształcenia Podyplomowego, Department of Reproductive Health
<b>REVIEW RETURNED</b>	03-Oct-2022
<b>GENERAL COMMENTS</b>	The corrections were correctly made. Thank you for the possibility of reviewing the study. The manuscript should be accepted in its current form.