

TITLE

Prevalence and impact of anxiety on mental health of pregnant women in the time of catastrophic events including COVID-19 pandemic – a rapid systematic review.

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1. ABSTRACT

The article presents a rapid systematic review protocol. The aim is to assess the current studies about influence of exposure to a natural disaster or catastrophic event on prevalence the anxiety among pregnant women around the world. We hope that this knowledge will provide a better understanding of the current situation related to the COVID-19 pandemic. There are more than 1 million coronavirus infection cases worldwide and many countries have declared states of a natural disaster[1]. Therefore, we believe that experiences from previous natural disasters in the context of maternal anxiety could be an important lesson for planning intervention in this group of patients.

KEY WORDS: Perinatal anxiety; Maternal anxiety; Pregnancy; Catastrophic event; Natural disasters; COVID-19;

2. INTRODUCTION

The perinatal period is often a time of maternal emotional distress related to the pregnancy itself. Women are concerned about fetal wellbeing and labor outcome. Besides the pregnancy itself, there are several risk factors correlated with a higher prevalence of anxiety[2]. Risk factors of anxiety include adverse childhood events (overprotective or harsh parenting, maltreatment, and physical punishment). Parental history of mental disorders and low socioeconomic status are also described as increasing the risk of anxiety [2–4].

One of the adverse influences on mental health of pregnant women could be insecurity related to catastrophic events or occurrence of a natural disaster. A catastrophic event is defined as a disaster or accident which takes place within a defined area, or is caused by an act of terrorism or war, and results in the deaths of six or more persons within 30 days after onset of such event, regardless of cause, that causes damage to property of significant severity and magnitude[5]. Examples of natural catastrophic events are natural disasters, like floods, fires, earthquakes, droughts, tsunamis, epidemics.[5] Human-made catastrophic events are wars, explosions of factories, nuclear reactors, acts of terrorisms. All these events may result in

aggravation of the economic state of individuals, regions and countries as well as specific restrictions of transport, housing, job loss and hunger [6].

The current COVID-19 pandemic is also an example of a natural disaster. The health burden is enormous, with more than 1 million cases worldwide, more than 68 thousand deaths and more than 39 thousand patients in a critical state[1]. The restrictions related to social distancing have put a strain on individuals, families, societies and countries. Many aspects of daily life have been affected resulting in stress, anxiety and depression.

Anxiety is a feeling of worry, nervousness, or unease about something with an uncertain outcome and it can co-exist or lead to depression [7]. The feeling of insecurity about any catastrophic event, including the COVID-19 pandemic may lead to generalized anxiety disorder[3]. The available literature shows that pregnancy is especially prone to anxiety [7,8]. Furthermore, the prevalence of antenatal anxiety varies from 15 to 23% [9], when worldwide only 3-5% of the population suffers from anxiety symptoms [4].

The relationship between anxiety and insecurity of pregnant women is very probable [10]. Mental health has a crucial effect on maternal wellbeing and fetal development [11]. Therefore, it is necessary to look for ways of early diagnosis and possible interventions in the group of patients affected by the pandemic.

We hope that the analysis of previous natural disasters will help us better understand this relationship and plan studies and interventions among pregnant women affected by the COVID-19 pandemic worldwide.

OBJECTIVE

To investigate the impact of anxiety on mental health in a population of pregnant women exposed to catastrophic events compared to healthy pregnant women without such exposure.

3. Review Question

Table 1. Review question.

Population	Intervention	Comparison	Outcome
Pregnant women	Exposure to natural disaster or another catastrophic event	Pregnant women, in time without catastrophic events.	Assessment of the anxiety of the pregnant women and

			their attitude to the problematic situation
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- *How stress and insecurity related to the natural disaster impacted anxiety of pregnant women?*

4. METHODS

4.1. Study selection

4.1.1. Searching databases

- Pubmed / MEDLINE,
- Web of Science,
- Cochrane Library,
- EMBASE
- Google Scholar.

4.1.2. Search strategy

The results would be accessed manually without using any Search software. The general search phrase that will be used is shown in Table 2. Search engine options will be used to limit the search to title and abstract, languages restricted to English, German or Polish, no publication time limits.

Table 2. Search strategy.

(pregnant OR pregnancy OR partum OR prepartum OR prenatal OR gestation OR partus OR prelabour OR maternal) AND ("catastrophic event" OR epidemic OR pandemic OR COVID-19 OR SARS-COV 2 OR "natural disaster" OR cataclysm OR explosion OR flood OR fire OR earthquake OR tsunami OR war OR "economic state" OR job loss OR hunger OR drought OR bomb) AND (anxiety OR mental)

4.2. Inclusion criteria

4.2.1. Types of studies:

All types of evaluative study designs are eligible for inclusion, including grey literature. Studies will not be selected based on methodological quality.

4.2.2. Types of participants

This literature review will compare prevalence of anxiety among pregnant women during a catastrophic event and pregnant women with pregnancy studied in a naturally stable setting.

4.2.3. Types of exposure:

Exposure to natural disasters or other catastrophic events on maternal anxiety.

4.2.4. Types of outcome measures:

Assessment of anxiety of pregnant women during a catastrophic event. We expect that different scales to measure anxiety will be used. Therefore, direct comparison will not be possible. Only a few used scales were evaluated for use in the pregnant women population in accordance with ICD-10 (10th revision of the International Statistical Classification of Diseases and Related Health Problems) [12] or DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition) [13,14] guidelines. Regarding the method of anxiety evaluation, only studies using STAI (State-Trait Anxiety Inventory), GAD-2/7 (Generalised Anxiety Disorder scale) [15,16], EPDS (Edinburgh Postnatal Depression Scale – Anxiety subscale) [17], HADS (Hospital Anxiety and Depression Scale) – Anxiety subscale [18], BMWS (Brief Measure of Worry Severity) [19], CWS (Cambridge Worry Scale) [20], W-DEQ – Version A (Wijma Delivery Expectancy/Experience Questionnaire) [21], PRAQ-R (Pregnancy-Related Anxiety Questionnaire-Revised) [22] would be included to the study [9]. The results published on the basis of these studies will be assessed according to DSM-5 criteria and ICD-10 criteria. The results of the maternal anxiety will be divided into four groups 0-none, 1-mild, 2 – moderate, and 3-severe anxiety.

4.2.5. Exclusion criteria

Editorials, newspaper articles, and other forms of popular media will be excluded. Failure to meet any one of the above eligibility criteria will result in exclusion from the review, and an independent reviewer will resolve any apparent discrepancies resulting from the selection process. The main reason for

exclusion will be incorrect anxiety measurement. The number of excluded studies (including reasons for exclusion for those excluded following review of the full text) will be recorded at each stage.

5. Assessment of risk of bias and data extraction

The risk of bias will be assessed independently during the data extraction process by at least two researchers using the Newcastle-Ottawa Scale. The third reviewer will assess any differences. Data on the prevalence and severity of anxiety will be extracted.

Each study will be assessed and compared in three aspects:

- The selection of the study group and the control group
- The comparability of the groups
- The detection of the exposure

A study will reach one star for each signaling question. The questions will be divided into three categories Selection, Comparability and Exposure/Outcome. Out of 9 possible stars, reaching 7 or more will be evaluated as a high-quality study.

Studies will be divided into three categories: low risk of bias, unclear bias and high risk of bias. The following characteristics will be evaluated:

- Random sequence generation (selection bias)
- Allocation concealment (selection bias)
- Incomplete results (attrition bias)
- Selective reporting (reporting bias)
- Other biases

6. Heterogeneity and reporting bias

In case of severe methodological, clinical or statistical heterogeneity pooled results will not be reported. We will identify heterogeneity by both visual inspections of forest plots and statistical methods. Reporting bias will be identified by using funnel plots.

7. Dissemination

A manuscript will be prepared for submission to a peer-reviewed journal.

8. A potential limitation of the study

There are not many studies published with the assessment of the anxiety level during the COVID-19 pandemic. There are a few regarding previous pandemics such as SARS and

MER. Therefore, our study would be focused on other catastrophic events to compare the present situation of COVID19 pandemic to earlier findings related to other catastrophic events.

9. DISCUSSION

Nowadays, mental health of pregnant women is an important aspect of perinatal care. The primary interest of medical care providers is maternal depression, but perinatal anxiety is also a significant disease that could lead to adverse outcomes during pregnancy. The COVID-19 pandemic may have a profound impact on mental health worldwide.[23]

We hope that the analysis of previous natural disasters will help us better understand this relationship and plan studies and interventions among pregnant women affected by the COVID-19 pandemic.

10. Other information

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11. References

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