



## **FACTORS INFLUENCING PREGNANCY ANXIETY: LITERATURE REVIEW**

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### **ABSTRACT**

**Background:** Alterations in both a woman's body and mind that occur during pregnancy might bring on feelings of anxiousness. Nine months of pregnancy are a particularly vulnerable time for feeling all of the feelings that pregnancy brings. This literature study aims to examine the elements that raise a pregnant woman's risk of anxiety. **Methods:** This research is a literature review study involving 13 articles from 510 articles that filtered data such as duplicate data, incomplete data, participants, titles, and abstracts that are suitable for this study and entered into the PRISMA system, the vulnerable years used are the years published 2018 to 2023 using PubMed and google scholar database searches. The search was adjusted for a literature search on factors that increase anxiety in pregnant women. **Results:** Inadequate social support, abuse or domestic violence in the past, unwanted pregnancies, unfavorable life events or strong feelings of stress, and complications from the current pregnancy /previous pregnancy were the factors that were shown to be most related to prenatal depression and anxiety. **Conclusion:** Many factors influence mothers to experience pregnancy anxiety such as age, parity, education, social support, financial income, past health problems related to pregnancy and childbirth, household problems, and employment. It is important to understand how a mother's anxiety affects her health, the health of her unborn baby, and the long-term impact on her child. Mothers need assistance in carrying out their pregnancy to minimize the anxiety they experience.

**Keywords:** Anxiety, Pregnancy, Factors

### **Introduction**

15–25 percent of pregnant women have symptoms of anxiety<sup>1</sup>. Worldwide, 10% and 16% of pregnant women have some form of mental illness; rates of depression are exceptionally high (16%) in less developed nations<sup>2</sup>. The most typical reaction to an emotional prompt is pregnancy. The combination of physiological and mental shifts that occur during pregnancy might bring on feelings of unease<sup>3</sup>. Anxiety during pregnancy might be exacerbated by changes in social or familial status<sup>4</sup>. These changes can eventually result in a wide variety of mental diseases. Some of the most common effects of this are elevated stress and anxiety levels and emotional difficulties<sup>5</sup>. A woman's pregnancy is a time of vulnerability, when she may experience strong emotions. It is believed typical for moms to suffer anxiety throughout pregnancy, even though this illness if left untreated, would have an impact on worsening the health condition of both the mother and fetus. This is true even though this situation will cause the mother's and the baby's health to get worse. During

pregnancy, a woman's body goes through many changes, such as gaining weight and having face changes<sup>6</sup>. Keramat et al (2021) conducted a study in which pregnant women were asked about their worries about their appearance throughout pregnancy, including how they felt about the changes to their bodies and how difficult they thought it would be to get back into shape after giving birth.

Essential to identify and treat anxiety during pregnancy as soon as it appears because it is so common and has been linked to negative implications for both the mother and the unborn child. This is due to studies linking anxiety during pregnancy to outcomes for both mothers and their unborn children<sup>8</sup>. According to Rasul et al (2017) 10% of expectant mothers have some form of mental illness; however, Keramat et al. Rasul et al (2017) Keramat et al (2021) estimates that the percentage of expectant mothers who experience mental health issues like anxiety and depression could range from 4% to 25%, depending on the study. In particular during the second and third trimesters, it also depends on the living situation<sup>10</sup>.

Several difficulties during pregnancy can be brought on by anxiety, including an early delivery, a low birth weight, and delays in the neuropsychiatric development of the child<sup>11</sup> preeclampsia, and cesarean delivery<sup>12</sup>. According to Corbett (2020), anxiety during pregnancy can cause changes in one's level of physical activity and disruptions in one's nutrition and rest or sleep patterns. What fear does to you in the long run Conditions that aren't treated can lead to mental illnesses that make it hard to take care of yourself and the baby during pregnancy and after birth<sup>14</sup>, which increases the risk of death, early birth, premature membrane rupture, and hyperemesis gravidarum<sup>15</sup>.

A study conducted on a general population found that the level of education had a statistically significant inverse association with the three variables of depression, anxiety, and stress. Depression, stress, and anxiety all improve in direct proportion to the individual's level of education<sup>16</sup>. Education has the power to educate, help people make sense of complicated situations, and to alter the way they react to the world around them. A variety of situations can impact pregnant women's mental health. Prenatal depression risk factors found by Tang et al (2019) include anxiety, a lack of social support, and inadequate to moderate levels of family care. Pregnancy anxiety risk factors include unemployment, being a first-time mother, high stress, clinical depression, and a lack of social support.

## Methods

### Research design, Setting, and Samples

This research was a literature study. This research is a literature review study involving 13 articles from 510 articles. Articles that fit the theme were selected from 2018-2023. The inclusion criteria were full-text articles, freely accessible, in English, with an RCT or experimental research design<sup>18</sup>. Exclusion criteria were conference papers, chapters, editorials, theses, and dissertations, and not

open access.

### Measurement and Data Collection

The data sources for this study were articles found in the electronic databases Science Direct, PubMed, and Google Scholar<sup>19</sup>. The researcher used the following search strategy on each database with the keywords Anxiety pregnancy, factor, influencing.

### Data Analysis

Researchers use the Preferred Reporting Items for Systematic Reviews and Meta-analyses Statement (PRISMA) method to follow the correct research steps or protocols<sup>20</sup>, as shown in Figure 1.

### Results

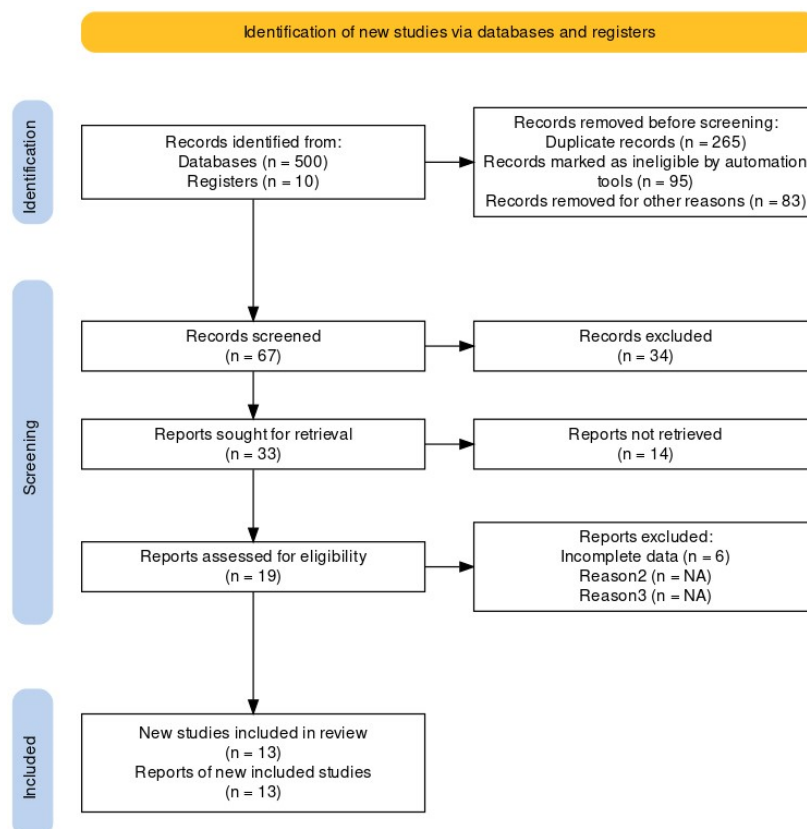


Figure 1. Flow-chart of study selection<sup>20</sup>

**Table 1. Studies Included in This Review**

<b>Author</b>	<b>Method</b>	<b>Population</b>	<b>Instrument</b>	<b>Result</b>
3	Cross-sectional descriptive-analytic study. Cluster sampling is the sampling technique. The general linear model identifies the stress, anxiety, and depression predicting components.	205	DASS-21	Anxiety symptoms can be predicted by factors such as a partner's level of support, the level of life satisfaction in the family, the number of pregnancies, and the education level of the other partner.
21	Study cross-sectional.	423	(PRAQ-R2)	Pregnancy-related anxiety was found to be substantially correlated with young age, low income, inadequate social support, high perceived stress, depression, and unintended pregnancies.
15	Cross-sectional study. Descriptive research	203	(PRAQ-R2), and (STAI-I and STAI-II)	Pregnant women's anxiety varies depending on factors such as age, parity, income, pregnancy planning, and occupation. The results showed that the PRAQ-R2 subscale's connection with age, occupation, and parity was statistically significant. Scores on the STAI-I were 35.42 9.11, on the STAI-II they were 42.21 8.21, and on the PRAQ-R2 they were 25.63 8.58, on average, for pregnant women. We discovered that the PRAQ-R2 scale scores of pregnant women were positively correlated with the STAI-I and STAI-II scale scores.
4	Cross-sectional study.	373	Perceived Stress Scale (PSS-10) and STAI	According to the findings of multiple linear regression analyses, women who attended birthing classes and engaged in physical activity before becoming pregnant had lower anxiety levels. However, the age of the woman was found to have the most significant influence on the anxiety and stress levels of women.
22	Studi cross-sectional	493	Medical Outcomes Study Social Support Index (MOSS)	7.1% of pregnant women reported having little social support, based on poll results. Poor mental health, anxiety, stress, a low socioeconomic status, and not having a partner in the pregnancy are important causes of insufficient social support during pregnancy.
23	A Mixed Methods Study	538	Cross-sectional survey	According to the findings of hierarchical multiple regression analysis, there are six significant predictors of paternal perinatal mental distress, with father stress being the most significant risk factor for perinatal mental distress.
24	Study cross-sectional	63	Zung Anxiety Rating Scale	According to the findings of the regression analysis, the effect of social support on anxiety is 12.3%. Women who are high-risk during their third trimester of pregnancy benefit greatly from having a strong social support system. The degree to which pregnant women receive social support correlates inversely with their levels of worry.
25	Cross-sectional descriptive-analytical study	40	Farsi anxiety scale for (F-ASP-R)	A history of hospitalization is predictive of pregnancy anxiety, a lack of understanding about analgesia during labor, unplanned pregnancies, poor emotional support from a partner, a history of dysmenorrhea, and a negative impression of one's health.
26	Study cohort	380	Pregnancy-related thoughts	Pregnancy-related anxiety was diagnosed in 195 women (55.7%). Anxiety and depression were found to be significant predictors of low

27	A multicentre study cross-sectional	1142	STAI	socioeconomic position. According to the findings of this study, having a low level of education, being unemployed, and having financial troubles are three significant characteristics that put pregnant women at an increased risk for experiencing anxiety.
28	A cross-sectional study	212	(PRA-Q)	There is a considerable correlation between a person's socioeconomic status and the prevalence of pregnancy-related anxiety.
29	Cross-sectional survey	413	(DASS-21)	Significant correlations have been found between depression and factors such as marital status, educational level, and employment status. Age, marital status, education level, religion, income, trimester, and previous abortion or miscarriage are strongly connected with stress, whereas marital status, religion, and trimester are significantly associated with anxiety.
30	Analysis of cross-sectional baseline data from a cohort	545	DSM-IV-TR.	Women who become pregnant between the ages of 16 and 24 have an extremely elevated chance of acquiring a mental handicap. Therefore, agencies should concentrate their efforts on providing support to women under the age of 25, particularly those in their early 20s. Significant correlations have been found between depression and factors such as marital status, educational level, and employment status. Age, marital status, education level, religion, income, trimester, and previous abortion or miscarriage are strongly connected with stress, whereas marital status, religion, and trimester are significantly associated with anxiety.

## Discussion

### Social Support and Marital Relations

Lack of social support during pregnancy increases the likelihood of anxiety. Newly pregnant women especially. Social support has many subconcepts, including spreading knowledge and showing care and appreciation. According to research conducted by <sup>22</sup>, 7.1% of expectant women reported having a low level of social support throughout their pregnancy. Several key factors might lead to a lack of social support during pregnancy. These factors include poor mental health, high-stress levels, a low socioeconomic position, and the absence of a love connection. In addition to that, the absence of a love partner is another factor that adds to this issue <sup>24</sup>. Social support affects anxiety by 12.3%, according to regression research. In the third trimester, women at high risk of problems benefit from robust social support. Social support decreases pregnancy anxiety. Fathers' anxiety and depression during pregnancy and mothers' marital strife are linked <sup>31</sup>. Becoming a parent is a life-altering experience that can have a negative impact on a person's mental health and increase their risk of depression. It might be difficult for fathers to express their needs and emotions to their children's mothers when they themselves are experiencing emotional distress <sup>32</sup>. Their marriage could suffer and the father's prenatal mood and anxiety disorders could worsen if they don't get help <sup>23</sup>.

Multiple studies have found that a lack of social and marital support is a major risk factor for perinatal anxiety and depression<sup>33</sup>. The mental health risks associated with prenatal worry and melancholy can be mitigated by a sense of support and happiness from one's partner<sup>34</sup>. Anxiety during pregnancy has been linked to both marital dissatisfaction and troubled or tense relationships<sup>35</sup>. It is essential for expectant mothers to have a strong network of emotional support, which can come from the partner in addition to the family and the community in which they live. The presence of a partner who is understanding and able to aid a mother with the difficulties she confronts as she adjusts to her new position as a parent can be beneficial to a mother's mental health and well-being. First-time mothers are most affected, however when a woman has an unhealthy relationship with her husband, it makes it harder for her to adjust to her new role as a mother and pregnant woman<sup>36</sup>.

Whether or not the mother is married, the stability of her relationship, and the length of time she has been with her partner all influence the mother's level of support throughout pregnancy. Several studies have found that women who have prenatal depression are more likely to have partners who do not share their home<sup>37</sup>.

### **Socioeconomic and Sociodemographic Risk Factors**

A wide variety of socioeconomic risk factors that may be associated with prenatal anxiety and depression have been the subject of numerous research. Multiple studies have revealed that being a young woman increases the likelihood that she may experience anxiety during her pregnancy<sup>38,34</sup>. Researchers have observed that older mothers are less likely to suffer from postpartum depression<sup>30</sup>. On the other hand, the findings of the research conducted by Shrestha & Pun (2018) Show that there is not correlation between age and anxiety to refute this claim. Pregnancy-related anxiety is more likely to be experienced by women with less education<sup>40,41</sup>. Women with less education tend to have higher rates of anxiety disorders<sup>42</sup>.

There is a considerable correlation between a mother's socioeconomic level and the stress that she experiences during her pregnancy<sup>27</sup>. Research in developing nations, which are noted for their low socioeconomic status and low levels of education, has contributed to a better understanding of prenatal anxiety and its possible impacts<sup>43</sup>. Previous research has shown a connection between low income, unemployment, and other types of financial issues and higher levels of prenatal anxiety<sup>44</sup>. Our interpretation is in keeping with their findings, as is the fact that previous research has shown a connection between low income, unemployment, and other forms of financial problems and elevated levels of prenatal anxiety. Women who were unable to secure employment had a significantly greater likelihood of developing pregnancy anxiety and despair<sup>45,46</sup>. Pregnant women from lower socioeconomic backgrounds in South Africa are more likely to experience anxiety and depression, according to research by Brittain et al (2015).

A study from Malaysia Fadzil et al (2013) revealed not been linked between postpartum anxiety and maternal depression because the people in the study were different or because the researchers used different ways to measure income levels. In addition Keramat et al. (2021) demonstrate that there is a link between antenatal anxiety and the job that women do, and that this link is statistically significant. This demonstrates that women who do not work outside the house are less likely to have anxiety during pregnancy compared to those who do work outside the home. This finding agrees with that of a researcher who took part in a study done in Brazil <sup>49</sup>. Prenatal anxiety was not significantly associated with the participant's occupation (whether it be student, housewife, unemployed, employed, or manager) in a study of its prevalence and associated characteristics conducted in Italy <sup>50</sup>. Differences could be due to how women are classified in the workforce. As a result of having extra time on their hands, pregnant stay-at-home mothers may experience increased anxiety. Their worry may increase if they have to rely on their partner's income to support a family

Fadzil et al (2013) found that prenatal worry is more likely to happen when the pregnancy is less than 20 weeks old. Compared to mothers who are 20 weeks or more along in their pregnancies or later, women who are less than 20 weeks along in their pregnancies have a 4.85 times higher risk of getting a foetal anxiety disorder. Research supports this as well Sarkar et al(2017) and Bekkhus et al(2021). Because of the physiological demands of pregnancy and the numerous physical changes that occur in women's bodies throughout the course of their lifetimes, this discovery may have a natural explanation. Additionally, it was found that women who are older are more likely to experience depression, anxiety, or stress. This may be because older mothers are inclined to experience mental anguish due to pregnancy problems like preeclampsia. Typically seen in females. Lack of emotional, intellectual, and material support from spouses, as well as a lack of education and resources, might amplify the negative effects of depression, anxiety, and stress in wives <sup>3</sup>.

### **Experience Related To Obstetrics and Childbirth**

This study showed that pregnant women who had problems with past pregnancies were more probable to experience stress and anxiety throughout their current pregnancy. A mother's stress levels during her current pregnancy may rise if she has a history of miscarriage, stillbirth, or early delivery, or if she develops hyperemesis gravidarum, high blood pressure, or gestational diabetes <sup>53</sup>. Whether the trauma occurred to the mother or the foetus, these studies emphasise the importance of asking all pregnant women about any previous traumatic experiences they may have had. This is something that needs to be done no matter what culture you're from. We also found that worrying about getting an abortion is a significant risk factor for developing anxiety. Primiparous women's fear may stem from their lack of mothering experience, while multiparous women's fear may be the result of their repeated encounters with difficulties during pregnancy. It's

possible that both of these things help bring on anxiousness. Our results could be explained by either of these two scenarios. Therefore, it is vital to discuss worries and fears with expectant mothers during prenatal visits. It is also crucial to provide counselling to these expectant moms in an effort to alleviate their worries and stress.

Anxiety is linked to both preoccupation with the labour process and unpleasant anticipation of the impending birth<sup>54</sup>(Raisanen et al., 2014). A significant correlation between negative experiences during pregnancy and postpartum depression was discovered in one study<sup>56</sup>. Snoek et al (2018) and Räsänen et al., (2014) found that Multiparous women have a lower risk than nulliparous or primiparous women. Primigravidae, or first-time mothers, are more susceptible to clinical depression<sup>58</sup>.

Evidence suggests that women who experience problems with their pregnancies or childbirth, a miscarriage, an abortion, or a stillbirth possess a larger potential for postpartum depression, generalised anxiety disorder, and perinatal depression. The stark increase in this risk is evident when comparing women who have and have not experienced any of these occurrences<sup>59</sup>. Furthermore, compared to women who had just experienced one pregnancy loss, those who had undergone repeated miscarriages reported much higher levels of worry. However, other research Bicking Kinsey et al(2014)found no clear link between a woman's obstetric history and feelings of anxiety or depression during pregnancy. Abortions used to happen both naturally and intentionally. Anxiety and depression while pregnant are more frequent among women who have previously undergone one or more caesarean sections or episiotomies. On the other hand, several research have come to the conclusion that there is no connection between the "mode of delivery" and prenatal depression<sup>61</sup>. A miscarriage that occurs unexpectedly can be a traumatic event that induces significant anxiety and despair, both of which can persist in subsequent pregnancies. According to the results of one study, a history of miscarriage has been related with antenatal melancholy, nonetheless, there was no connection between the two and stillbirth<sup>62</sup>. According to the findings of a study, the risk of a woman experiencing anxiety and sadness while she was pregnant throughout the first trimester was higher for women who had experienced a previous miscarriage and who had not gone more than six months in between pregnancies. This was the discovery made by the researchers (Gong et al., 2013). These women had fewer than six months in between pregnancies.

### **Bad Experiences That Happened**

Numerous researchRatcliff et al(2015), have shown that a high level of perceived stress during pregnancy, as well as a history of traumatic experiences, are both associated with pregnancy-related anxiety. In contrast, many people experience symptoms or disorders of



depression and anxiety after going through traumatic life events including the death or illness of a loved one, a divorce, the loss of a job, a move, or being assaulted or raped.

An individual's perception of the stress they are experiencing and their capacity to deal with the effects of that stress play a factor in determining the severity of that experience, which can range from mild to severe. The degree of intensity of the experience of stress can range from light to severe. It is general knowledge that pregnancy is a challenging period due to the numerous obvious and anticipated changes as well as challenges that occur during this time. This fact contributes to the perception that pregnancy is a difficult time. These factors contribute to the stressful nature of pregnancy. This is the case due to the numerous physiological and psychological shifts that take place during pregnancy. When one or more stressful situations occur, there is an increased likelihood that both the mother and the father would experience psychological issues or diseases of the mental health. This danger may be magnified to a greater degree if both the mother and the father are subjected to a number of stressful events. This much elevated possibility may have unfavourable repercussions for the child. This highlights how essential it is to have social support in order to mitigate the negative consequences that traumatic events have: When a woman goes through traumatic experiences in her life and at the same time has a strong social support network, she is able to recover from those experiences with less emotional suffering.

Terrible childhood experiences including domestic violence, emotional, physical, or sexual abuse have a significant negative impact on the mother's mental health. These traumatic experiences took place when the mother was a child. Instances of sexual assault and child abuse also suit this category. This adds to the already devastating impacts caused by the mother's predicament. Multiple studies have found that being a victim of abuse, sexual assault, or domestic violence prior to or during pregnancy increases a woman's risk of experiencing prenatal anxiety. Especially if the perpetrator was the victim's intimate with Post-Traumatic Stress Disorder (PTSD) and depression symptoms<sup>65</sup>. According to the findings of another study, women who were subjected to either physical violence or sexual coercion at the hands of their partners prior to or while they were pregnant were more likely to exhibit symptoms of depression afterwards<sup>37</sup>. If a woman has a history of being abused, she is at an increased risk of having experienced abuse herself, which also increases the likelihood that she has had more than one traumatic event in her lifetime.

Those who have gone through more than one bad experience are at a greater risk of acquiring depression and post-traumatic stress disorder (PTSD) in comparison to those who have only been through one terrible experience. Abuse suffered as a child is a substantial predictor of both depression and anxiety experienced by pregnant women during the entirety of the postpartum period<sup>66</sup>.

## Unintended Pregnancy

Based on A Biaggi (2016) and A Waqas et al (2022) show a strong correlation between unplanned pregnancies and maternal anxiety. Contrary to popular belief, studies by Senobari et al (2019) and Martini (2016) found no correlation between unplanned pregnancies and prenatal anxiety or depression. Women who become pregnant unexpectedly may feel distressed. Women who become pregnant out of wedlock may feel stressed and dissatisfied. Unhappiness can stem from a wide variety of causes, including interpersonal conflicts, overwhelming circumstances, and a lack of social support. One possible explanation is the high price of having children, especially if more aren't planned for. Previous studies have shown that poor income, unemployment, and financial difficulty are linked to increased prenatal anxiety and our interpretation is consistent with those findings. Furthermore, such variations may result from variations in income classification, anxiety assessment instruments, and classroom settings.

## Conclusion

Many factors influence mothers to experience pregnancy anxiety such as age, parity, education, social support, financial income, past health problems related to pregnancy and childbirth, household problems, and employment. It is important to understand how a mother's anxiety affects her health, the health of her unborn baby, and the long-term impact on her child. Mothers need assistance in carrying out their pregnancy to minimize the anxiety they experience.

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## Conflict of Interest

We certify that there is no actual or potential conflict of interest in relation to this article

## Reference

1. Fawcett EJ, Fairbrother N, Cox ML, White IR, Fawcett JM. The prevalence of anxiety disorders during pregnancy and the postpartum period: A multivariate Bayesian meta-analysis. *J Clin Psychiatry*. 2019;80(4).

2. WHO. Mental Health Determinants and Populations. Department of mental Health and Substance Dependence. Maternal and Child Mental Health Program [Internet]. Department of mental Health and Substance Dependence; 2016. Available from: <https://www.who.int/teams/mental-health-and-substance-use/maternal-mental-health>
3. Effati-daryani F, Zarei S, Mohammadi A, Hemmati E, Yngyknd SG. BMC Psychology. 2020;1–10.
4. Kowalska J. The Level of Stress and Anxiety in Pregnant Women Depending on Social Support and Physical Activity. J Clin Med. 2023;12(9).
5. Pampaka D, Papatheodorou SI, AlSeaidan M, Al Wotayan R, Wright RJ, Buring JE, et al. Depressive symptoms and comorbid problems in pregnancy - results from a population based study. J Psychosom Res [Internet]. 2018;112(June):53–8. Available from: <https://doi.org/10.1016/j.jpsychores.2018.06.011>
6. Inanir S, Cakmak B, Nacar MC, Guler AE, Inanir A. Body image perception and self-esteem during pregnancy. Int J Women's Heal Reprod Sci. 2015;3(4):196–200.
7. Keramat A, Malary M, Moosazadeh M, Bagherian N, Rajabi-Shakib MR. Factors influencing stress, anxiety, and depression among Iranian pregnant women: the role of sexual distress and genital self-image. BMC Pregnancy Childbirth. 2021;21(1):1–12.
8. Bayrampour H, Vinturache A, Hetherington E, Lorenzetti DL, Tough S. Risk factors for antenatal anxiety: A systematic review of the literature. J Reprod Infant Psychol [Internet]. 2018;36(5):476–503. Available from: <https://doi.org/10.1080/02646838.2018.1492097>
9. Rasul S, Bowen A, Muhajarine N. Factors That Moderate or Mediate Pregnancy Complications in Women with Anxiety and Depression. J Pregnancy Child Heal. 2017;04(06).
10. Vigod SN, Wilson CA, Howard LM. Depression in pregnancy. BMJ. 2016;352(March):1–9.
11. Danielle B. Cooper; Lily Yang. Pregnancy And Exercise [Internet]. StatPearls Publishing; 2022. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK430821/?report=printable>
12. Ravid E, Salzer L, Arnon L, Eisner M, Wiznitzer A, Weller A, et al. Is there an association between maternal anxiety propensity and pregnancy outcomes? BMC Pregnancy Childbirth. 2018;18(1):22–4.
13. Corbett GA. Health anxiety and behavioural changes of pregnant women during the COVID-19 pandemic [Internet]. Vol. 249, European Journal of Obstetrics and Gynecology and Reproductive Biology. 2020. p. 96–7. Available from: <https://api.elsevier.com/content/article/eid/1-s2.0-S0301211520301901>
14. Egbe T, Ngonsai D, Tchounzou R, Ngowe M. Prevalence and Risk Factors of Lactation Mastitis in Three Hospitals in Cameroon: A Cross-Sectional Study. Br J Med Med Res. 2016;13(1):1–10.

15. Yeşilçinar İ, Acavut G. Anxiety during the pregnancy and affecting factors: a cross-sectional study. Springer [Internet]. 2022; Available from: [https://www.researchgate.net/publication/360697011\\_Anxiety\\_during\\_the\\_pregnancy\\_and\\_affecting\\_factors\\_a\\_cross-sectional\\_study](https://www.researchgate.net/publication/360697011_Anxiety_during_the_pregnancy_and_affecting_factors_a_cross-sectional_study)
16. Setyarini EA, Niman S, Parulian TS, Hendarsyah S. Prevalensi Masalah Emosional: Stres, Kecemasan dan Depresi pada Usia Lanjut. *Bull Couns Psychother*. 2022;4(1):21–7.
17. Tang X, Lu Z, Hu D, Zhong X. Influencing factors for prenatal Stress, anxiety and depression in early pregnancy among women in Chongqing, China [Internet]. Vol. 253, *Journal of Affective Disorders*. Elsevier B.V.; 2019. 292–302 p. Available from: <https://doi.org/10.1016/j.jad.2019.05.003>
18. Patino CM, Ferreira JC. Inclusion and exclusion criteria in research studies: Definitions and why they matter. *J Bras Pneumol*. 2018;44(2):84.
19. Goossen K, Hess S, Lunny C, Pieper D. Database combinations to retrieve systematic reviews in overviews of reviews: A methodological study. *BMC Med Res Methodol*. 2020;20(1):1–15.
20. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *Syst Rev*. 2021;10(1):1–11.
21. Tarafa H, Alemayehu Y, Nigussie M. Factors associated with pregnancy-related anxiety among pregnant women attending antenatal care follow-up at Bedelle general hospital and Metu Karl comprehensive specialized hospital, Southwest Ethiopia. *Front Psychiatry*. 2022;13.
22. Bedaso A, Adams J, Peng W, Sibbritt D. Prevalence and determinants of low social support during pregnancy among Australian women: a community-based cross-sectional study. *Reprod Health*. 2021;18(1):1–11.
23. Chhabra J, Li W, McDermott B. Predictive Factors for Depression and Anxiety in Men During the Perinatal Period: A Mixed Methods Study. *Am J Mens Health*. 2022;16(1).
24. Vidayanti V, Pratiwi DAA. the Role of Social Support in Reducing Anxiety Among High Risk Pregnant Women in Third Trimester. *Int Respati Heal Conf*. 2019;1:610–5.
25. Ghezi S, Eftekhariyazdi M, Mortazavi F. Pregnancy Anxiety and Associated Factors in Pregnant Women. *Zahedan J Res Med Sci*. 2021;23(1).
26. Nath A, Venkatesh S, Balan S, Metgud CS, Krishna M, Murthy GVS. <p>The prevalence and determinants of pregnancy-related anxiety amongst pregnant women at less than 24 weeks of pregnancy in Bangalore, Southern India</p>. *Int J Womens Health*. 2019;Volume 11:241–8.
27. Cena L, Gigantesco A, Mirabella F, Palumbo G, Trainini A, Stefana A. Prevalence of Maternal Postnatal Anxiety and Its Association With Demographic and Socioeconomic

- Factors: A Multicentre Study in Italy. *Front Psychiatry*. 2021;12.
28. Wall V, Premji SS, Letourneau N, McCaffrey G, Nyanza EC. Factors associated with pregnancy-related anxiety in Tanzanian women: A cross sectional study. *BMJ Open*. 2018;8(6):1–8.
  29. Wegbom AI, Edet CK, Ogba AA, Osaro BO, Harry AM, Pepple BG, et al. Determinants of Depression, Anxiety, and Stress among Pregnant Women Attending Tertiary Hospitals in Urban Centers, Nigeria. *Women*. 2023;3(1):41–52.
  30. Lockwood Estrin G, Ryan EG, Trevillion K, Demilew J, Bick D, Pickles A, et al. Young pregnant women and risk for mental disorders: findings from an early pregnancy cohort. *BJPsych Open*. 2019;5(2):1–7.
  31. Ansari NS, Shah J, Dennis CL, Shah PS. Risk factors for postpartum depressive symptoms among fathers: A systematic review and meta-analysis. *Acta Obstet Gynecol Scand*. 2021;100(7):1186–99.
  32. Wang D, Li YL, Qiu D, Xiao SY. Factors Influencing Paternal Postpartum Depression: A Systematic Review and Meta-Analysis. *J Affect Disord* [Internet]. 2021;293:51–63. Available from: <https://doi.org/10.1016/j.jad.2021.05.088>
  33. Agrawal I, Mehendale AM, Malhotra R. Risk Factors of Postpartum Depression. *Cureus*. 2022;14(10):1–8.
  34. Zeng Y, Cui Y, Li J. Prevalence and predictors of antenatal depressive symptoms among Chinese women in their third trimester: A cross-sectional survey. *BMC Psychiatry*. 2015;15(1):1–7.
  35. Araji S. Hypertension, Maternal Mood and Inflammation During Pregnancy–No Clear Link Among Pregnant Mississippi Women [Internet]. [search.proquest.com](https://search.proquest.com); 2021. Available from: <https://search.proquest.com/openview/d7066f7e4e8770dc91dc4187dac69c56/1?pq-origsite=gscholar&cbl=18750&diss=y>
  36. Biaggi A. Identifying the women at risk of antenatal anxiety and depression: A systematic review [Internet]. Vol. 191, *Journal of Affective Disorders*. 2016. p. 62–77. Available from: <https://api.elsevier.com/content/article/eid/1-s2.0-S0165032715302330>
  37. Martini J. A prospective-longitudinal study on the association of anxiety disorders prior to pregnancy and pregnancy- and child-related fears. *J Anxiety Disord* [Internet]. 2016;40:58–66. Available from: <https://api.elsevier.com/content/article/eid/1-s2.0-S0887618516300536>
  38. Zhong QY, Gelaye B, Sánchez SE, ... Psychometric properties of the Pittsburgh Sleep Quality Index (PSQI) in a cohort of Peruvian pregnant women. *J Clin Sleep ...* [Internet]. 2015; Available from: <https://jcsm.aasm.org/doi/abs/10.5664/jcsm.4936>
  39. Shrestha S, Pun KD. Anxiety on primigravid women attending antenatal care: A hospital based cross-sectional study. *Kathmandu Univ Med J*. 2018;16(61):23–7.
  40. Gillani A, Shafique F, Rashid A, Mahjabeen B, ... Protocol: Evaluating the impact of a

- common elements-based intervention to improve maternal psychological well-being and mother–infant interaction in rural ... [Internet]. *BMJ Open*. ncbi.nlm.nih.gov; 2021. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8264893/>
41. Kotimäki S, Härkönen J, Karlsson L, Karlsson H, Scheinin NM. Educational differences in prenatal anxiety and depressive symptoms and the role of childhood circumstances. *SSM - Popul Heal*. 2020;12.
  42. Akinsulore A, Temidayo AM, Oloniniyi IO, Olalekan BO, Yetunde OB. Pregnancy-related anxiety symptoms and associated factors amongst pregnant women attending a tertiary hospital in south-west nigeria. *South African J Psychiatry*. 2021;27:1–9.
  43. Waqas A, Raza N, Lodhi HW, Muhammad Z, Jamal M, Rehman A. Psychosocial factors of antenatal anxiety and depression in Pakistan: Is social support a mediator? *PLoS One*. 2015;10(1):1–14.
  44. Leach LS, Poyser C, Fairweather-Schmidt K. Maternal perinatal anxiety: A review of prevalence and correlates. *Clin Psychol*. 2017;21(1):4–19.
  45. Xiao J, Xiong R, Wen Y, Liu L, Peng Y, Xiao C, et al. Antenatal depression is associated with perceived stress, family relations, educational and professional status among women in South of China: a multicenter cross-sectional survey. *Front Psychiatry*. 2023;14(June):1–9.
  46. Akinsulore A, Temidayo AM, Oloniniyi IO, Olalekan BO, Yetunde OB. Pregnancy-related anxiety symptoms and related factors among pregnant women attending a tertiary hospital in southwestern Nigeria. *South African J Psychiatry* [Internet]. 2020;27. Available from: <https://sajp.org.za/index.php/sajp/article/view/1616/2055>
  47. Brittain K, Myer L, Koen N, Koopowitz S, Donald KA, Barnett W, et al. Risk factors for antenatal depression and associations with infant birth outcomes: Results from a south african birth cohort study. *Paediatr Perinat Epidemiol*. 2015;29(6):504–14.
  48. Fadzil A, Balakrishnan K, Razali R, Sidi H, Malapan T, Japaraj RP, et al. Risk factors for depression and anxiety among pregnant women in Hospital Tuanku Bainun, Ipoh, Malaysia. *Asia-Pacific Psychiatry*. 2013;5(SUPPL. 1):7–13.
  49. Silva M. Anxiety in pregnancy: Prevalence and associated factors. *Rev da Esc Enferm* [Internet]. 2017;51. Available from: [https://api.elsevier.com/content/abstract/scopus\\_id/85041412867](https://api.elsevier.com/content/abstract/scopus_id/85041412867)
  50. Giardinelli L, Innocenti A, Benni L, Stefanini MC, Lino G, Lunardi C, et al. Depression and anxiety in perinatal period: Prevalence and risk factors in an Italian sample. *Arch Womens Ment Health*. 2012;15(1):21–30.
  51. Sarkar K, Das G, Chowdhury R, Shahbabu B, Sarkar I, Maiti S, et al. Screening antenatal anxiety: Predicting its effect on fetal growth. *J Fam Med Prim Care*. 2017;6(1):131.
  52. Bekkhus M, Lee Y, Brandlistuen RE, Samuelsen SO, Magnus P. Maternal Anxiety and Infants Birthweight and Length of Gestation. A sibling design. *BMC Psychiatry* [Internet].

- 2021;21(1):1–10. Available from: <https://doi.org/10.1186/s12888-021-03620-5>
53. Chou FH, Kuo SH, Wang RH. A longitudinal study of nausea and vomiting, fatigue and perceived stress in, and social support for, pregnant women through the three trimesters. *Kaohsiung J Med Sci.* 2008;24(6):306–14.
  54. Rubertsson C, Hellström J, Cross M, Sydsjö G. Anxiety in early pregnancy: Prevalence and contributing factors. *Arch Womens Ment Health.* 2014;17(3):221–8.
  55. Räisänen S, Lehto SM, Nielsen HS, Gissler M, Kramer MR, Heinonen S. Risk factors for and perinatal outcomes of major depression during pregnancy: A population-based analysis during 2002-2010 in Finland. *BMJ Open.* 2014;4(11).
  56. Agostini F, Neri E, Salvatori P, Dellabartola S, Bozicevic L, Monti F. Antenatal Depressive Symptoms Associated with Specific Life Events and Sources of Social Support Among Italian Women. *Matern Child Health J.* 2015;19(5):1131–41.
  57. Snoek FJ, Brodar KE, Cuddeback G, Fisher EB, ... Psychology, mental health, and quality of life. *Princ Concepts ...* [Internet]. 2018; Available from: [https://link.springer.com/chapter/10.1007/978-0-387-93826-4\\_32](https://link.springer.com/chapter/10.1007/978-0-387-93826-4_32)
  58. Srinivasan N, Murthy S, Singh AK, Upadhyay V, Mohan SK, Joshi A. Assessment of burden of depression during pregnancy among pregnant women residing in rural setting of Chennai. *J Clin Diagnostic Res.* 2015;9(4):LC08-LC12.
  59. Palmer AD, Murphy-Oikonen J. Social work intervention for women experiencing early pregnancy loss in the emergency department. *Soc Work Health Care* [Internet]. 2019; Available from: <https://www.tandfonline.com/doi/abs/10.1080/00981389.2019.1580237>
  60. Bicking Kinsey C, Baptiste-Roberts K, Zhu J, Kjerulff KH. Birth-related, psychosocial, and emotional correlates of positive maternal-infant bonding in a cohort of first-time mothers. *Midwifery* [Internet]. 2014;30(5):e188–94. Available from: <http://dx.doi.org/10.1016/j.midw.2014.02.006>
  61. George C, Lalitha ARN, Antony A, Kumar A V., Jacob KS. Antenatal depression in coastal South India: Prevalence and risk factors in the community. *Int J Soc Psychiatry.* 2016;62(2):141–7.
  62. Baylis R, Ekdahl J, Haines H, Rubertsson C. Women's experiences of internet-delivered Cognitive Behaviour Therapy (iCBT) for Fear of Birth. *Women and Birth* [Internet]. 2020; Available from: <https://www.sciencedirect.com/science/article/pii/S1871519218301720>
  63. Gong X, Hao J, Tao F, Zhang J, Wang H, Xu R. Pregnancy loss and anxiety and depression during subsequent pregnancies: Data from the C-ABC study. *Eur J Obstet Gynecol Reprod Biol* [Internet]. 2013;166(1):30–6. Available from: <http://dx.doi.org/10.1016/j.ejogrb.2012.09.024>
  64. Ratcliff BG, Sharapova A, Suardi F, Borel F. Factors associated with antenatal depression and obstetric complications in immigrant women in Geneva. *Midwifery* [Internet].

- 2015;31(9):871–8. Available from: <http://dx.doi.org/10.1016/j.midw.2015.04.010>
65. Akçali Aslan P, Aydin N, Yazici E, Aksoy AN, Kirkan TS, Daloglu GA. Prevalence of depressive disorders and related factors in women in the first trimester of their pregnancies in Erzurum, Turkey. *Int J Soc Psychiatry*. 2014;60(8):809–17.
66. Seng JS, D'Andrea W, Ford JD. Complex mental health sequelae of psychological trauma among women in prenatal care. *Psychol Trauma Theory, Res Pract Policy*. 2014;6(1):41–9.
67. Waqas A, Zafar SW, Meraj H, Tariq M, Naveed S, ... Prevention of common mental disorders among women in the perinatal period: a critical mixed-methods review and meta-analysis. *Glob Ment ...* [Internet]. 2022; Available from: <https://www.cambridge.org/core/journals/global-mental-health/article/prevention-of-common-mental-disorders-among-women-in-the-perinatal-period-a-critical-mixedmethods-review-and-metaanalysis/CCFA3FEF08406630A03AC44330D28D3A>
68. Senobari M, Azmoude E, Mousavi M. The relationship between body mass index, body image, and sexual function: A survey on Iranian pregnant women. *Int J Reprod Biomed*. 2019;17(7):505–14.