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Articles

The psychological impact of COVID-19 on women's wellbeing during pregnancy and postpartum one year after pandemic outbreak in Italy.
A Systematic review

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Abstract

Background. Coronavirus (COVID-19) contagion prevalence and the severity of its symptoms do not seem different for pregnant and postpartum women than the general population. Nevertheless, the possible traumatic experiences related to the spread of covid-19 show negative effects on women's mental health during the childbearing and postnatal period. Although international reviews observed this phenomenon worldwide, an in-depth exploration of Italian pregnant and postpartum women's wellbeing is needed, considering the specific phases of the virus spread and the restrictive measures imposed by Italian government throughout the last year.

Aim. This research aims to identify and discuss existing studies on women's antenatal and postnatal mental health during the first year of the pandemic in Italy.

Method. In accordance with PRISMA guidelines, a systematic review was conducted, using the following databases: Web of Science, Embase, EBSCO (APA PsycArticles, APA PsycInfo; Psychology and Behavioral Sciences Collection; MEDLINE), Pubmed and other sources.

Results. Eleven articles were included in the review and three meaning trajectories were identified: *Pregnancy and postpartum continuum – from anxiety to depression and post-traumatic stress; Risk dimensions: previous psychopathologies and the lack of social support; Focus on others health before themselves.*

Conclusion. Findings suggest different vulnerable areas, such as a high fear for others health and the loss of the protective dimension of social support for pregnant and postpartum women's wellbeing in Italy. This evidence might help to project useful and specific psychological screening and intervention programmes for perinatal clinic.

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1. Introduction

1.1 Covid-19 in Italy

On March 11th 2020, the World Health Organization declared SARS-COV-2 (Coronavirus or Covid-19) a pandemic (World Health Organization [WHO], 2020).

Coronavirus, despite being a global threat, spread at different times and modalities in different countries, even with regard to the restrictions imposed by governments to limit infections, during the last year.

In Europe, Italy was the first country to report coronavirus cases, to be affected by the virus in terms of numbers of contagions and deceased and to adopt timely restrictive measures to contain the pandemic. In Italy, different phases of the covid-19 spread can be recognized, according to the government decrees. On February 23rd, the first decree (D.L. n.6, 23/2/2020) imposed a lockdown in some areas of Northern Italy which, on March 9th (D.P.C.M. 9/3/2020), was extended to the entire nation. During March, limitations which prohibited the encounter of more than two persons and incentivized working from home were reinforced with the shutdown of public places and all services which sold or produced non-essential goods. This first phase of the covid-19 spread ended on May 4th entailing the partial and progressive re-opening of work, commercial and recreational activities, although the mandatory to respect physical distance, wear masks and sanitation protocols remained in force nationwide. Finally, since November 6th (D.P.C.M. 3/11/2020) governments have decided to diversify restrictive measures according to the number of contagions in Italian regions.

1.2 Covid-19 medical impact on pregnant and postpartum women health

Current epidemiological data show that women are less prone to Covid-19 infection, its medical complications and the risk of mortality than men (Luciani & Mannelli, 2020).

Although pregnant and postpartum women are usually at-risk of viral respiratory infections due to the hormonal changes occurring in these conditions, they do not show a greater risk of coronavirus contagion or more severe medical consequences than the general population (Istituto Superiore di Sanità [ISS], 2021). Moreover, there is currently no evidence of an increased risk of abortion, stillbirth or neonatal death in relation to maternal covid-19 infection (Maraschini et al., 2020). In contrast, vertical transmission of the virus and the risk of fetal underdevelopment are rare but not impossible events (Wastnadge et al., 2021).

According to literature, the severity of covid-19 symptoms in pregnant women is related to age (older than 35 years), comorbidity with previous diseases, in particular diabetes and chronic hypertension, and obesity (Knight et al., 2020).

To date, during postpartum, although the possible risk of infection of the infant through breast milk cannot be excluded, perinatal services recommend breastfeeding and skin-to-skin contact for newborns, an experience which was only possible for 26.6% of mothers during the first phase of the pandemic (Maraschini et al., 2020).

Indeed, though horizontal transmission of the virus to the child appears to have low or mild clinical manifestation, failure to breastfeed and separation between the mother and child can have highly serious consequences on the development of the newborns (ISS, 2021).

Pregnant and postpartum women are not among the priority groups of the Italian vaccination plan. Vaccine evaluation trials have not been conducted directly on this target, although animal studies, performed in laboratories, suggest the absence of risk on the health of the mother and child (ISS, 2021).

1.3 Pregnant and postpartum women's wellbeing during covid-19 outbreak

In addition to the possibility of contagion, covid-19 exposed the worldwide population to various potential traumatic experiences, such as the loss of significant people, long susceptibility to negative media news and changes in lifestyle habits, such as the decrease of vis-à-vis relations.

Covid-19 has negatively affected the mental health of the general population, inducing an increase in anxiety, depression, poor quality sleep and insomnia (Merlo et al., 2021; Morin & Carrier, 2021; Parlapani et al., 2020; Somma et al., 2020; Wang et al., 2021). In particular, the current literature highlights that the intolerance of uncertainty (Bakioğlu et al., 2020; del Valle et al., 2020; Satici et al., 2020; Smith et al., 2020; Wheaton et al., 2021) and the fear of contamination (Di Giacomo, 2020; Gori et al., 2021; Settineri & Merlo, 2020), have increased psychological distress during the first phase of the pandemic, directly and indirectly.

Although medical-physiological literature does not consider women as an at-risk category for covid-19, the psychological literature, instead, highlights the strong impact of coronavirus on women's mental health, in the world and, more specifically, in Italy (Ausin et al., 2021; Connor et al., 2020; Moroianu et al., 2021; Parlapani et al., 2020; Rossi et al., 2020; Wang et al., 2021).

According to some studies, the wide psychological distress in women can be attributed to financial and work conditions, including their increased employment as health professionals (Wang et al., 2021). On the other hand, some studies underline the greater incidence of relational factors, such as the decrease in contact with friends and relatives, higher levels of perceived loneliness and the greater involvement of women in childcare duties than men (Benassi et al., 2021; Etheridge & Spanting, 2020).

In particular, pregnant and postpartum women seem to be a widely at-risk category for psychological distress (Kotlar et al., 2021; Wu et al., 2020).

Assuming a psychodynamic perspective, the transition to motherhood can be considered as a "critical" experience at intrapsychic and interpersonal levels, the result of a complex identity process aimed at creating a psychological space to welcome one's child, but also a new image of oneself as a mother and as a member of one's family (Erikson, 1993; Margherita et al., 2017; Milan, 2005; Stern et al., 2000). Furthermore, it is known that psychological disorders during pregnancy can increase the development of symptoms after childbirth and have consequences on women's health as well as on the child's development and on the mother-child relationship (Terardi et al., 2019; Smorti et al., 2019).

Recent international reviews in the perinatal field on the effects of coronavirus show several dimensions of psychological distress in women, including anxiety, stress, and depression (Fan et al., 2020; Hessami et al., 2020; Kotlar et al., 2020). To date, pregnant women during the pandemic appear to have even more post-traumatic symptoms, negative emotions, and insomnia than women who experienced pregnancy before the pandemic (Berthelot et al., 2020; Zhou et al., 2020). Instead, among the protective factors, the presence of perceived social support from close ones and from one's partner is predominant (Gu et al., 2020; Yue et al., 2020).

Along with the common problems related to the pandemic described above, women who have experienced or are experiencing pregnancy and postpartum in Italy over the last year must face further limitations imposed by hospitals, including the eventual impossibility to attend pre-birth courses, and be supported and accompanied during both visits and childbirth (Molgora & Accordini, 2020). These obstacles add to the set of biological, psychological, and social factors that affect the health of women during the pregnancy and postnatal period (ISS, 2021).

Considering the differences of the coronavirus spread dynamics among the different countries, a summary of the impacts that covid-19 has had on the psychological health of women in the ante and postnatal period in the Italian context one year after the pandemic outbreak is needed in order to create interventions aimed at improving the psychological health of women in the perinatal clinic nationwide.

For this purpose, a systematic review was conducted. The systematic review method is considered to be particularly useful to identify, discuss and summarise the most important results with regards to the psychological phenomenon with the secondary aim to steer future studies (Gandino et al., 2018).

2. Materials and Methods

2.1 Search strategy

To perform the current systematic review, PRISMA guidelines were used. Published papers were retrieved up to the 11/3/2021, from the following databases: Web of Science, Embase, EBSCO (APA PsycArticles, APA PsycInfo; Psychology and Behavioral Sciences Collection; MEDLINE) and Pubmed. Papers were searched in databases using the following combinations of terms: (pregnancy OR 'pregnant woman' OR perinatal OR antenatal OR puerperium OR 'postpartum' OR gravidanza OR puerperio) AND ('sars cov 2' OR 'covid 19' OR coronavirus) AND (psychological OR psychology OR psychopathology OR mental OR stress OR anxiety OR depression OR depressive OR ansia OR depressione OR psicologico OR psicologia OR psicopatologia OR mentale) AND (italy OR italian OR italia). An additional strategy, through the Google Scholar search engine, was then applied to identify the relevant “grey literature” for inclusion in this paper. In this work we use the term “grey literature” to refer to the unpublished and first online papers which did not emerge from systematic database searches (Higgins et al., 2019).

2.2 Selection strategy

To be included in this review, papers had to meet the following inclusion criteria: articles reporting information about the psychological impact of covid-19 on the experiences of pregnant and postpartum women; written in English or in Italian. Articles which did not present new research results or clinical purposes (for example: letters to editors, presentations of experimental protocols, data reports, abstracts), not in English or in Italian, not in the psychological field and not in the Italian context were excluded from the review.

The review process followed different steps. First, all duplicate papers were deleted. Then, abstracts and titles of the remaining studies were screened. Finally, the full texts of the papers were reviewed to establish whether or not they met the inclusion criteria.

3. Results

3.1 Selected studies

Database research produced a total of 217 papers, to which 2 articles obtained from Google Scholar were added. In the first selection step, 106 duplicates were found and deleted. After reviewing titles and abstracts, 28 articles remained and were screened on a full text basis. In this screening step, 17 papers were excluded: 9 because they were not journal or conceptual articles (6 were letters to editors, 1 was an experimental protocol, 1 was a data report and 1 was an abstract); 1 because the full-text was not available; 2 because they were not on the correct topic; and 5 because they were not based in the Italian context.

In the end, a total of 11 studies were included in the review (Figure 1). Their main characteristics are synthesized in the Table 1. 8 studies were published in 2020 and 3 in 2021. The review included 6 cross-sectional studies, 2 non-concurrent case-control studies, 1 qualitative study, 1 conceptual study and 1 literature review. The majority of the studies were nationwide, with 4 in Northern Italy and 1 in the South of the country exclusively. In 4 studies, data was collected during the first phase of the covid-19 outbreak (from March 1 to May 3), 2 studies collected data during the second phase (from May 4 to today) and 4 studies collected data during both phases. 3 studies only included women during pregnancy, 5 studies included postpartum women, and 1 study included both pregnant and postpartum women.

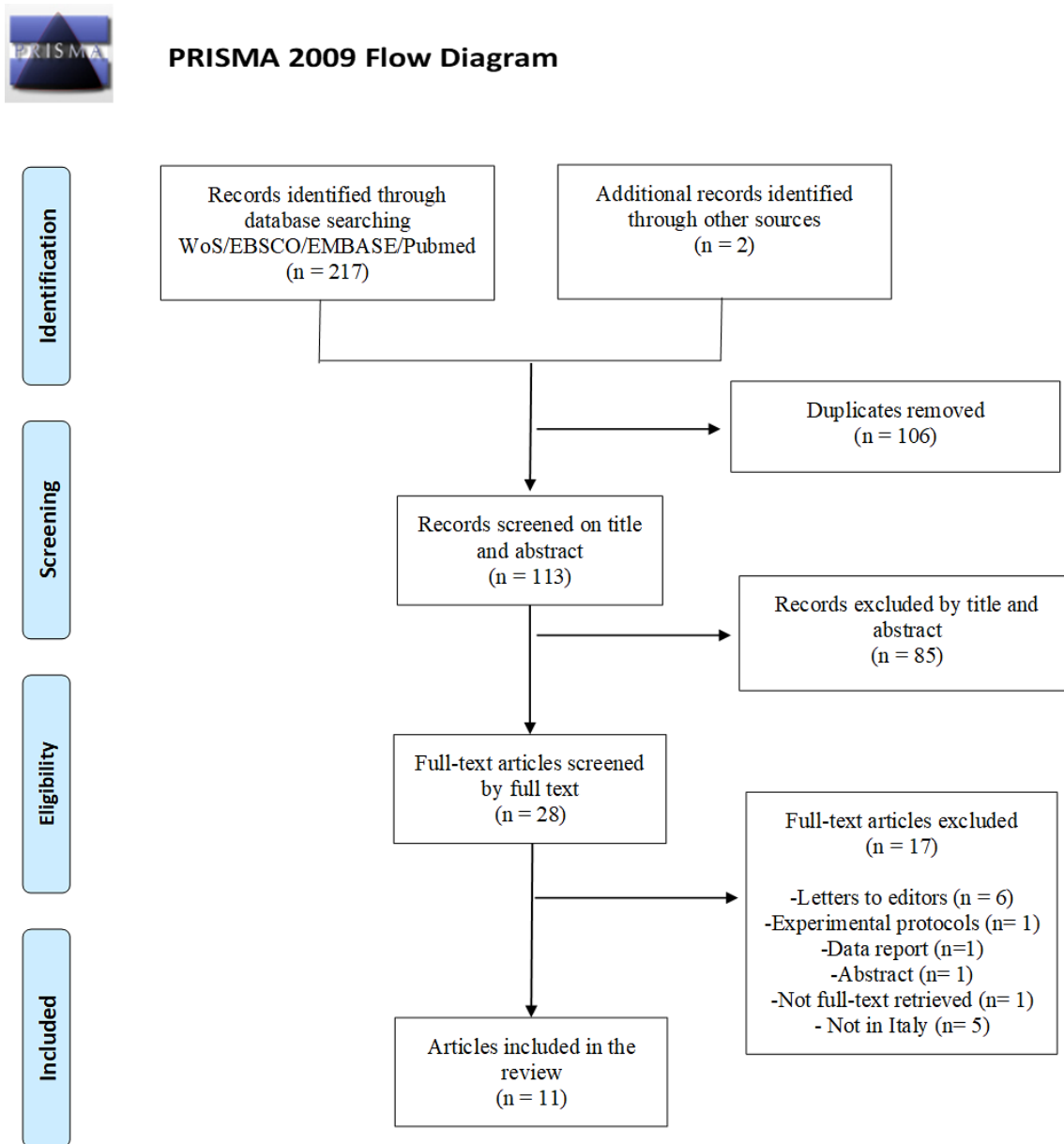


Figure 1. Prisma flow Diagram

Table 1. Study characteristics

Study	Type	Sample	Context	Phase	Instruments	Results
1. Molgora & Accordini (2020)	Quant. Cross-sectional study	Women from the 1 st month of pregnancy to the 6 th month after childbirth Total: 575 Pregnant: 389 Post-partum: 186	Italy (National -wide)	1 st phase (March 3- May 1)	All: -Socio-dem. Quest. - STAI, Y - EPDS Only pregnant: - WDEQ(A) Only post-partum: - WDEQ(B) - PPQ	A high percentage of women scored above the clinical cut-off both during pregnancy and postpartum, for anxiety (64.0%; 57.7%; cut-off ≥ 40), depression (34.2%, 26.3%; cut-off ≥ 13), negative birth expectation or experience (51,2%; 31,7%; ≥ 35), PTSD during post-partum (16,7%; cut-off ≥ 19). Women's mental health was predicted by socio-demographic, medical, and pandemic-related variables, especially the lack of support from one's partner.
2. Spinola et al. (2020)	Quant. Cross-sectional study	Post-partum women from delivery to the 12 th month after childbirth Total: 243	Italy (National -wide)	2 nd phase (May 11- June 6)	-Socio-dem. quest. - Brief-COPE - EPDS - PSS - MSSS	44,40% had a score above the cut-off (≥ 12) for postpartum depression. 51.90% had a score above the cut-off for significant stress perceived (≥ 27). 87.20% perceived very low Maternal Social Support. Women in Northern Italy reported higher levels of postpartum depression, and perceived stress more than women in the other areas of the country. Almost all covid-19 impact variables significantly increased the depression score. High levels of fear about close one health, instead, decreased the depression level.
3. Zanardo et al. (2021)	Quant. Non-concurrent case-control study	Data was collected the second day after delivery Study group: 152 Control group: 147	Northern -est Italy	Control group (2019) Study group – 1 st and 2 nd phases (March 8 - May 18)	-Frequency of feeding modalities -EPDS overall score and subscales (anhedonia, anxiety, depression)	The study group reported significantly higher EPDS overall scale (6.58 ± 4.08 vs, 8.03 ± 4.88 , $p < 0.005$), anhedonia (0.18 ± 0.38 vs, 0.56 ± 0.65 , $p < 0.001$) and depression subscale (0.39 ± 0.44 vs, 0.62 ± 0.60 , $p < 0.001$), scores than the control group. Mothers who practiced exclusive breastfeeding showed a significantly lower EPDS score in comparison with those practicing other feeding modalities.
4. Ostacoli et al. (2020)	Quant. Cross-sectional study	Post-partum women from delivery	Northern Italy (Turin)	1 st and 2 nd phase (March 8 - June 15)	-Socio-dem., obstetric and covid-related quest. -EPDS	44.2% had a score above the cut-off (≥ 11) for postpartum depression. 42.9% had a score above the cut-off (≥ 24) for mild post-traumatic stress.

		to the 4 th month after childbirth			-IES-R -RQ	Postpartum psychological distress seemed to be associated more with the antenatal experience and other individual dimensions than with the pandemic related factors.
		Total: 163				A protective factor against depression and PTSS was represented by the perception of healthcare staff support.
5. Zanardo et al. (2020)	Quant. Non-concurrent case-control study	Data was collected the second day after delivery Study group: 91 Control group: 101	Northern -est Italy	Control group (2019) Study group- 1 st and 2 nd phases (March 8 - May 18)	-EPDS overall score and subscales (anhedonia, anxiety, depression)	The study group reported significantly higher EPDS overall scale, anhedonia and depression subscale, scores than the control group. 28.6% of mothers in the study group vs 11.9% in the control group (p=0.006) had a score above the cut-off (≥ 12) of EPDS.
6. Saccone et al. (2020)	Quant. Cross-sectional study	Pregnant women Total: 100	Southern Italy (Naples)	1 st phase (March 15 -April 1)	-IES-R -STAI -VAS -Medical variables	53% had a score above the cut-off (≥ 37) for severe post-traumatic stress. 68% had a score above the cut-off (≥ 36) for anxiety. 46% reported high anxiety regarding the vertical transmission of the disease (cut-off >50). Mothers in the first trimester of pregnancy showed significantly higher anxiety and psychological impact than the others.
7. Ravaldi et al. (2020a)	Qualit-Quant. Cross-sectional study	Pregnant women Total: 200	Italy (National -wide)	1 st phase (first weeks of pandemic)	COVID-ASSESS	Positive constructs about childbirth expectations were prevalent before the pandemic, while negative ones were dominant after (Chi square = 482.6, p < 0.01). Among emotions, joy was the most expressed before the outbreak (63.0% before vs 17.0% after; p < 0.05), while fear was the most prevalent after (7.5% before vs 49.0% after; p < 0.05). In particular, fear before the pandemic was associated with joy, happiness and the impatience to meet the baby, while, during covid-19, fear was associated with sadness, loneliness and anguish. Pregnant women expressed greater concern about the health of the baby and significant relatives, than their

						own health. Women with previous psychological distress showed a greater concern for their partner's health in particular.
8. Ravaldi et al. (2020b)	Quant. Cross-sectional study	Pregnant women Total: 737	Italy (National-wide)	1 st phase (March 18-March 30)	-COVID-ASSESS In particular: -Socio demographic section -Psychometric section that included: -NSESSS -STAI-Y	10.2% had a score above the cut-off (≥ 24) for post-traumatic symptoms. 21,7% had a score above the cut-off (≥ 50) for anxiety. Women with a history of anxiety or depression showed significantly higher levels of anxiety, PTSD symptoms and greater concerns about covid-19.
9. Camoni et al. (2020)	Conceptual Article	NA	Italy (National-wide)	1 st and 2 nd phase (first semester of pandemic)	NA	Phases of a screening and intervention programme for anxiety and perinatal depression during the covid-19 pandemic are shown: -empowerment knowledge -remote screening (NICE items and socio-demographical schedule) - clinical assessment of anxiety and depression (GAD-7; EPDS) - remote psychological intervention proposals
10. Fumagalli et al. 2021	Qualitative study	Post-partum women positive to covid-19 assessed during the second or the third month post-partum Total:22	Northern Italy (Monza)	2 nd phase (June 2020)	-Semi-structured interview on pregnancy and childbearing experience during pandemic	The women's issues related to coping with unsatisfied expectations, trying to adapt to the new situation, managing separation from family and partners, relations with medical staff and, the long-lasting emotional effect of covid-19 experiences emerged.
11. Cena et al., 2021	Literature review	NA	Italy (National-wide)	NA	NA	Covid-19 led to a re-organization of NICU (neonatal intensive care units), decreasing the family-centered care support, priority for the mothers and new-borns. The study suggests the use of online tools to support parents in these difficult contexts.

STAI-Y : State-Trait Anxiety Inventory – Y form; EPDS: Edinburgh Postpartum Depression Scale; WDEQ: Wijma Delivery Expectancy Questionnaire; PPQ: Perinatal PTSD Questionnaire; Brief-COPE: Brief Coping Orientation to Problems Experiences; PSS: Perceived Stress Scale; MSSS: Maternity Social Support Scale; IES-R: Impact of Event Scale-Revised; RQ: Relationship Questionnaire; STAI: State-Trait Anxiety Inventory; VAS: Visual Analog Scale; COVID-ASSESS: COVID-19 related Anxiety and Stresses in pregnancy, post-partum and breastfeeding; NSESSS: National Stressful Events Survey; NICE: National Institute for Health and Care Excellence; GAD-7: General anxiety Disorder-7.

3.2 Trajectories

Three different meaning trajectories were used to interpret and summarise the findings of the Italian studies included in the review: *Pregnancy and postpartum continuum – from anxiety to depression and post-traumatic stress*; *Risk dimensions: previous psychopathologies and the lack of social support*; *Focus on others health before themselves*.

3.3 Pregnancy and postpartum continuum– from anxiety to depression and post-traumatic stress

The literature on the psychological effects of covid-19 on the health of Italian women is distributed differently in relation to the periods of pregnancy and postpartum. Anxiety was the psychopathological disorder most investigated during pregnancy (3 studies), while depression and post-traumatic stress were the most explored postpartum (4 depression studies, 3 post-traumatic stress studies).

Regarding pregnancy, studies showed significant levels of anxiety in women, though very different percentages were recorded: 68% (Saccone et al., 2020); 64.0% (Molgora & Accordini, 2020), and 21.7% (Ravaldi et al., 2020b). Higher levels of anxiety were observed especially in women during the first trimester of pregnancy than women in the other trimesters (Saccone et al., 2020).

However, studies about the postpartum period found a high percentage of women with significant depression scores: 28.6% two days after delivery (Zanardo et al., 2020); 44.2% up to 4 months (Ostacoli et al., 2020); 26.3% up to 6 months (Molgora & Accordini, 2020); 40.40% up to 12 months (Spinola et al., 2020). Close to delivery, a higher prevalence of depressive symptoms appeared in women who became mothers during the covid-19 period (28.6%) than women who became mothers in the previous year (11.9%) (Zanardo et al., 2020, 2021).

In postpartum women, stress (51.90% in Spinola et al., 2020) and post-traumatic distress disorders (16.7% in Molgora & Accordini, 2020; 42.9% in Ostacoli et al., 2020; 53% in Saccone et al., 2020) were also observed.

The only data available about depressive and post-traumatic symptoms in the antenatal period and anxiety in the postnatal period did not show significant differences between these stages of motherhood (Molgora & Accordini, 2020; Zanardo et al., 2020b).

3.4 Risk dimensions: previous psychopathologies and the lack of social support

All studies which included covid-19-related variables showed their effect on women's well-being during pregnancy and postpartum, alongside other individual and social factors (Molgora & Accordini, 2020; Ostacoli et al., 2020; Ravaldi et al., 2020a, 2020b; Spinola et al., 2020).

Considering the individual dimensions, the set of studies contained in the review suggested that women who suffered psychological disorders in the past were an at-risk category (Molgora & Accordini, 2020; Ravaldi et al., 2020a, 2020b; Spinola et al., 2020).

In particular, the presence of mood, anxiety, and eating disorders, along with alcohol, and drug abuse in the past were predictive of anxiety and depression in pregnancy and anxiety, depression, and postpartum PTSD (Molgora & Accordini, 2020). Having suffered from previous emotional troubles, along with other individual variables, was also related to anxiety, and postpartum stress (Spinola et al., 2020). In addition to the increase in anxiety and PTSD symptoms, pregnant women with previous histories of psychological distress showed greater concerns about covid-19 (Ravaldi, 2020a, 2020b).

On the other hand, among situational risk factors, the lack of support mainly emerged (Cena et al., 2021; Fumagalli et al., 2020; Molgora & Accordini, 2020; Ostacoli et al., 2020; Spinola et al., 2020). High scores of low perceived social support were recorded in women (Spinola et al., 2020). Studies also show that the lack of social support, particularly from one's partner, leads to a decrease in the well-being of pregnant and postpartum women (Molgora & Accordini, 2020), while receiving social support from the medical staff seems to assume a protective value for the psychological health of women (Ostacoli et al., 2020). Separation from partner and family during childbirth and the perinatal period were also found to be sources of emotional distress for women (Fumagalli et al., 2021). Even for health services, the possibility of guaranteeing care involving the family emerged as one of the main challenges for guaranteeing the quality of psychological care of women in the perinatal setting (Cena et al., 2021).

3.5 Fear for others health more than their own

The review shows that women seem to be more concerned about the health of their child and significant others than their own health both during pregnancy and postpartum (Ravaldi et al., 2020a; Spinola et al., 2020).

On the one hand, the data show this phenomenon in pregnant women, in which fear is often associated with experiences of loneliness, anguish and sadness, whilst fear in the pre-covid era, was attributed to the uncertainty and trepidation of childbirth (Ravaldi et al., 2020a).

On the other hand, even during the first year of maternity, women are not scared for their own health, while the level of fear for their child, their elderly family members and their partners is very high. Moreover, fear of contagion for significant others seemed to be associated with a decrease in depression symptoms (Spinola et al., 2020).

Even for women who tested positive for covid-19, the fear seemed to focus on the possible contagion of the child and of the medical staff who took care of the accompaniment to childbirth (Fumagalli et al., 2021).

4. Discussion

The current review shows the effects of covid-19 on women's antenatal and postnatal mental health during the first year of the pandemic in Italy. It highlights the presence of psychopathological symptoms such as anxiety, depression and post-traumatic stress, the lack of social support and previous psychopathologies as main risk factors, as well as women's greater concern for others health over their own. Moreover, it shows that data was collected mainly during the first pandemic phase and in the north of the country.

Regarding psychopathological symptoms, studies suggest increased levels of anxiety in the puerperium period and more depressive and post-traumatic disorders in the postpartum period.

During pregnancy, the prevalence of anxiety symptoms in Italy appears to be widely variable, which could partly depend on the different STAI versions and cut-off thresholds used in the studies. However, this variability seems to confirm international data (Fan et al., 2020). In general, anxiety levels recorded in pregnant women during the last year in Italy seem to be greater than those observed before the pandemic, both in international literature (Dennis et al., 2017) and more specifically in Italian studies (Cena et al., 2020; Vizzini et al., 2018).

During postpartum, depressive symptoms are the most investigated in Italy. The increase of depression in women who delivered during the pandemic (Zanardo et al., 2020), emerges when comparing the percentages of current studies with those recorded before the pandemic worldwide (Shorey et al., 2018) and nationwide (Banti et al., 2011; Clavenna et al., 2017).

Finally, post-traumatic disorder scores in postpartum women also highlight a wide variability. This gap could derive both from the different scales used by the studies (PSS, IES-R) and from the contexts in which the data was collected. However, in all cases, pre-covid-19 literature showed lower rates of PTSD in postpartum women (Yildiz et al., 2017).

To date, results show a lack of in-depth research which could generalize the results observed in the studies to the wide perinatal period (from pregnancy to one year after delivery), given that there are few data available on depression and post-traumatic stress in the antenatal period and anxiety in the postnatal period, they do not show significant differences between the stages of motherhood (Molgora & Accordini, 2020; Zanardo et al., 2020b).

It is not yet possible to clearly define what role the covid-related variables play in predicting the psychological distress of women during pregnancy and postpartum, though some vulnerable areas emerge.

Among individual dimensions, studies in Italy suggest that previous psychopathologies can predict several forms of distress during pregnancy and postpartum, confirming data already emerged in the pre-covid literature (Patel et al., 2012; Simpson et al., 2018).

For many years, the research has considered the lack of social support as a risk factor for the psychological health of women during pregnancy and the early years of motherhood (Grussu et al., 2020; Lancaster et al., 2010; Negron et al., 2013). From the data that emerged in the review, it might be hypothesized that the social restrictions imposed by governments and hospitals to prevent contagions decreased the social support perceived by women, fostering an increase of distress (Cena et al., 2020; Fan et al., 2020; Khoury et al., 2021). The lack of social support could involve feelings of loneliness in women, which impact women's psychic health during their pregnancy and postpartum (Junttila et al., 2013).

Indeed, isolation and separation from family close to childbirth seem to have a lasting traumatic impact on women who tested positive for covid-19. This aspect also emerges from the analysis of hospital contexts, in particular NICU wards, where the main difficulty is ensuring a family-centered support, which can limit the perception of loneliness experienced by women during and after childbirth. Moreover, during the first phase of the pandemic the possibility to sustain the supportive needs of the general population was one of the main challenges which health and psychological services were called to manage (Di Giacomo, 2020).

Another aspect highlighted by the review is the attention that women give to the health of their children and close ones over their own, which can also be observed worldwide (Corbett et al., 2020; Taubman-Ben-Ari et al., 2020). Women who have been faced with critical antenatal and postnatal experiences during the covid-19 spread, seem to have directed their concerns towards the other, through a decentralization of personal needs, ignored or replaced with those of others. Mothers seem to focus their fears only on one aspect of the interpersonal domain (Schimmenti et al., 2020), namely the fear for the other, denying the dimension of the fear of the other, as a possible source of contagion (Settineri & Merlo, 2020). Paraphrasing a concept stated by Winnicott (1956), we may suggest that women lived an "extended primary maternal concern", or rather wide concerns regarding health and one's own caring skills towards both the infant and the significant others.

The concern for the other is related to "take care" of the other, which can assume a protective function for the psychological well-being of postpartum women (Spinola et al., 2020).

However, on the other hand, this wide fear for others during pregnancy in the covid-19 era seems to be associated with feelings of sadness and anguish (Ravaldi et al., 2020). This tendency towards a concern for the other could lead women to flatten their self-representation to the gender "stigma" which attributes to women the exclusive role of "care" within society, hindering the recognition of needs and distress and limiting the request for medical and psychological help and support (Austin et al., 2008; Camoni et al., 2020).

From a methodological point of view, considering that the review collected the literature of the last year, longitudinal studies on this specific topic have not yet emerged. Furthermore, considering the research designs, only two of them used a control group (Zanardo et al., 2020, 2021). The increased frequency of cross-sectional studies appears to be a general feature of psychological research on the effects of covid-19 (Associazione Italiana di Psicologia [AIP], 2020). Therefore, the assessments on the impact of the different stages of spread of the virus on the psychological health of individuals are still preliminary.

Most studies use a quantitative methodology, while only one uses a qualitative methodology. In a broad sense, qualitative studies alongside quantitative data can be useful to show subjective meanings that individuals attribute to an experience (Margherita et al., 2020; Tessitore et al., 2019; Tessitore & Margherita, 2020).

Looking at the data collection contexts, it emerges that the studies published to date have mostly focused on the first acute phase of spread of covid-19 and in Northern Italy. In particular, there is a higher frequency of research conducted in healthcare settings in the north of the country than in the south. This data could derive from the fact that in the first half of 2020, the North was the area that suffered the greatest effects of the pandemic in terms of contagion and mortality (Ministry of Health, 2020), activating the interests of research in psychology. Italian studies also confirm the results observed in other contexts which show wide experiences of anxiety, fear and concern in women who delivered during the peak phase of virus spread (Mortazavi et al., 2021). This phenomenon is probably connected to the climate of great uncertainty and anguish experienced by individuals during the first phase of the coronavirus in Italy, as showed by the literature on the intolerance to uncertainty registered in people during the pandemic (Bakioğlu et al., 2020; del Valle et al., 2020; Satici et al., 2020; Smith et al., 2020; Wheaton et al., 2021). Although the studies included in the review do not directly investigate the domain of uncertainty, they do provide insights into the fact that coronavirus has added other "unknown aspects" (Freeston et al., 2020) to the pregnancy and postpartum experience that in itself represents for women, especially primiparous women, a new and unpredictable life experience.

In numerical terms, the studies identified in the review are still few. This testifies to the importance of increasing research on this topic.

Covid-19 can be considered as a traumatic experience, similar but different than other traumatic and risk conditions (Carlino et al., 2020; Carlino & Margherita, 2016; Margherita et al., 2015, 2017a, 2017b; Margherita & Tessitore, 2019), both because it is not limited in time and because it potentially involves an invisible but potentially ubiquitous threat.

Beyond the increase of psychopathological symptoms, the review reveals some areas of vulnerability that women experience during the pregnancy and perinatal period. From this perspective, the loss of the protective function of social support by significant others who usually take care of the woman and accompany her during pregnancy, childbirth, and the following months after birth, emerges. Furthermore, the great concern for the other's health pushes us to rethink the maternal function, in particular, its generative aspects. During this historical period, women who give birth to a child feel the responsibility of assuming a role of care and support even to protect her social bonds.

These phenomena lead to questioning the interventions and methods for promoting the health of new or future mothers in the next stages of the virus spread.

5. Conclusion

The current review showed an increase of anxiety, depression, and post-traumatic symptoms in pregnant and postpartum women compared to data observed in pre-pandemic studies. It confirmed a greater risk for women with previous psychopathology histories, highlighted the lack of social support as one of the main impact factors of covid-19, and, on an emotional level, showed a wide range of fears and concerns of women, particularly during the first phase of the virus spread and with respect to their significant others.

The discussion of the review's results can generate different future perspectives for both research and the clinic.

Regarding research in psychology, it might be relevant to project studies that cross the timing of pregnancy and postpartum with the contextual timing of the virus spread to identify other risk factors, in addition to those already emerged.

It might be useful even to deepen anxiety in post-partum and depression and post-traumatic disorders during pregnancy in Italy, as it can be observed in other contexts (Lebel et al., 2020; Silverio et al., 2021; Zhou et al., 2020).

Other aspects that we hope will be addressed in the future are the in-depth exploration of the emotional experiences of women, and the studies that associate surveys on women's well-being with results regarding the health of their children and partners.

On the other hand, this review underlines some implications for the clinic such as the need to take care of the health of pregnant and postpartum women during the covid-19 pandemic, using new online and offline mixed methods for the early screening and intervention which might reduce risk dimensions, such as the lack of social support and the greater fear perceived by mothers.

From a methodological point of view, although the choice of words for the selection of studies was made with reference to international works on the subject, it can be assumed that the use of other words could have led to different results. Furthermore, a meta-analysis would confirm the statistical relevance of some observed dimensions.

Our study offers a brief reflection and contributes partially to the interpretation of the complex scenario of the pandemic's effects and it is not free from limitations. The research, for example, does not focus on a specific target of pregnant and postpartum women (eg adolescent women or women with high-risk pregnancies, which could represent vulnerable categories). Another limitation is that the only languages included in the selection were English and Italian. Furthermore, the research does not allow us to clearly define whether the results identified by the studies can be interpreted as the emergence of new symptoms and psychological reactions of women to pregnancy and the birth of the child in the pandemic period or show an exacerbation of a psychological distress present prior to the spread of the virus.

In conclusion, we highlight the importance, in the context of research, to explore the emotional experience of women, in terms of protective factors, such as studies on the transition to parenting for the couple, and, in longitudinal terms, the impact of Covid -19 on the child's health.

Conflict of Interest Statement

The authors declare that the research was conducted in the absence of any potential conflict of interest.

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