

# Psychological state of pregnant women during the war in Ukraine and forced migration

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The article presents a review analysis of domestic and foreign scientific research regarding the impact of war on the psychological health of pregnant women, including internally displaced persons in Ukraine and refugee women to neighboring European countries.

Results of modern research indicate that any upheavals, anxiety states, external stress factors, or other negative emotions intensify their influence on both the mother's organism and her future child. In today's realities, one of the main stress factors for Ukrainian women has become the war, and this can have consequences for two generations at once – both for the mother and for the child. Due to experienced trauma, loss of loved ones, forced migration, and constant fear for their own lives and the lives of relatives, pregnant women have a high risk of depression, anxiety, and post-traumatic stress disorder. The ongoing war in Ukraine has drawn the attention of European countries to numerous and diverse consequences, including the migration and economic crisis. It is displaced pregnant women who, according to systematic reviews and meta-analyses, are at an extremely high risk of psychological disorders.

The issue of the impact of the war in Ukraine on the psychological state of pregnant women in neighboring European countries is currently studied only in isolated studies, and they indicate that refugees from Ukraine as a result of the war face additional risk factors, such as linguistic and cultural barriers, which hinder effective communication between patients and medical professionals. Therefore, the question arises of developing tools for psychological screening and a set of psychological support measures that take into account cultural factors. Further effective psychological health support for this contingent of women requires a complex interdisciplinary approach.

**Keywords:** pregnancy, refugee women, internally displaced persons, psycho-emotional state, psychological health, war in Ukraine, stress, anxiety, depression, post-traumatic stress disorder.

## Психологічний стан вагітних під час війни в Україні та вимушеної міграції

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У статті наведено оглядовий аналіз вітчизняних і закордонних наукових досліджень щодо впливу війни на психологічне здоров'я вагітних, зокрема внутрішньо переміщених осіб в Україні та жінок-біженок до сусідніх європейських країн.

Результати сучасних досліджень свідчать, що будь-які потрясіння, тривожні стани, зовнішні стресові чинники або інші негативні емоції посилюють вплив як на організм матері, так і на її майбутню дитину. У реаліях сьогодення одним з основних стресових факторів для українських жінок стала війна, що може спричинити наслідки відразу для двох поколінь – як для матері, так і для дитини. Через пережиті травми, втрату близьких, вимушене переселення та постійний страх за власне життя й життя рідних вагітні мають високий ризик розвитку депресії, тривожних розладів і посттравматичного стресового розладу. Війна в Україні, що триває, привернула увагу європейських країн до численних і різноманітних наслідків, зокрема міграційної та економічної криз. Саме переміщені вагітні, як свідчать дані систематичних оглядів і метааналізів, піддаються надзвичайно високому ризику психологічних розладів.

Питання впливу війни в Україні на психологічний стан вагітних у сусідніх європейських країнах наразі висвітлене лише в поодиноких дослідженнях; їх результати свідчать, що жінки-біженки з України внаслідок війни стикаються з додатковими факторами ризику, як-от мовними та культурними бар'єрами, що перешкоджають ефективній комунікації між пацієнтками й медичними працівниками. З огляду на це актуальним є питання розроблення інструментів психологічного скринінгу та комплексу заходів психологічного супроводу з урахуванням культурних чинників. Подальша ефективна підтримка психічного здоров'я цього контингенту жінок потребує комплексного міждисциплінарного підходу.

**Ключові слова:** вагітність, жінки-біженки, внутрішньо переміщені особи, психоемоційний стан, психологічне здоров'я, війна в Україні, стрес, тривожність, депресія, посттравматичний стресовий розлад.

A stable psycho-emotional state of a woman is recognized as one of the most important conditions for the proper development of the fetus and physiological childbirth [1, 2]. It is generally recognized that during pregnancy, all systems of the female body experience additional stress, and the psychological reorganization caused by pregnancy makes a woman more vulnerable to the development of anxiety and depression, which are the most common mental disorders during pregnancy and postpartum [3–5].

According to studies [6, 7], the transition to motherhood involves a number of physical and psychological changes that increase the risk of mental disorders. Refugee women are almost five times more likely to develop postpartum depression. Recent data from systematic reviews and meta-analyses report the prevalence of perinatal depression at 20.7% during pregnancy [8] and 17% in the postpartum period [9].

In scientific literature, it is noted that any stress, anxiety, or negative emotions caused by war, natural disasters,

or other traumatic situations intensify the negative impact on the mother's body and her unborn child [1, 2, 10, 11]. In modern realities, war in Ukraine is considered an additional stress factor for pregnant women [12–17]. As a result of the war in Ukraine, the number of scientific studies devoted to the psychological state of pregnant women in wartime conditions is increasing [1–3, 11–15, 18–21].

According to the results of a scientific systematic review [18], pregnant women and young mothers are recognized as one of the most vulnerable categories to various stress factors caused by hostilities; increased anxiety levels, sleep disturbances, depression are common and often unrecognized conditions that can cause negative consequences for the health of the woman and her unborn child [3, 10, 13, 22].

Analysis of literary sources [1, 3, 13, 15, 20, 23] shows that due to experienced trauma, loss of loved ones, forced displacement, and constant fear for their own lives and the lives of relatives, pregnant women have a high risk of depression, anxiety, and post-traumatic stress disorder (PTSD). The results of one cohort study indicate that pregnant women who lost a significant person (child, brother or sister, parents, husband) during pregnancy or a year prior had a greater risk of complicated labor and negative outcomes for fetal health, including an increase in the level of infant mortality (3–18%) [24]. Many studies have found a link between maternal stress and anxiety and pregnancy complications [1, 2, 4, 11, 20, 25].

Thus, in the course of the conducted meta-analysis [4], it was established that maternal anxiety and depression correlate with an increase in the frequency of preeclampsia and a decrease in birth weight. It is noted that the level of depression during pregnancy ranges from 4 to 20%. It was also established that perinatal depression correlates with an increase in the number of spontaneous miscarriages, intrapartum hemorrhages, hypertension, eclampsia, stillbirth, low Apgar score, fetal growth retardation. Data from a prospective cohort study involving 4,408 pregnant women with generalized anxiety disorder (prevalence 32.6%) indicate that a woman who experiences depressive disorders during pregnancy has an increased likelihood of having a low-birth-weight baby (adjusted odds ratio (OR) = 1.47; 95% confidence interval (CI) [1.10–1.95]) or a small-for-gestational-age (SGA) baby (OR = 1.39; 95% CI [1.01–1.92]), while PTSD is more associated with an increased risk of preterm birth (OR = 1.28; 95% CI [1.00–1.65]). Their findings suggest that antenatal care should provide patients with additional mental health intervention [26]. Another prospective cohort analysis of pregnant women showed that women with both PTSD and depression (8% during pregnancy) were four times more likely to have preterm birth [27].

Results from an observational cohort study demonstrated an association between symptoms of prenatal depression and preterm birth (15% of women delivered preterm at < 37 weeks, 2% very preterm at < 32 weeks, and 0.2% extremely preterm at < 28 weeks) as well as having an SGA infant at birth (13%) were SGA at birth, and 8% of infants weighed < 2,500 g [28].

According to a systematic review dedicated to the link between prenatal depression, anxiety, stress, and preterm

birth, the presence of one or more of these psychological disorders in a pregnant woman increases the overall risk of preterm birth [29]. According to the results of a longitudinal cohort study conducted in Canada, depressive symptoms in the third trimester were the only mental health characteristic associated with obstetric interventions. It was found that such pregnant women had an increased risk of emergency cesarean section (adjusted OR = 2.04; 95% CI [1.26–3.29]). At the same time, no additional link between prenatal depression and anxiety symptoms and other obstetric treatment methods was found [30].

A systematic review of 26 studies, dedicated to the link between perinatal PTSD and child development, revealed that postpartum PTSD in the mother correlates with low birth weight and reduced breastfeeding rates. At the same time, data regarding the link between PTSD and preterm birth, fetal growth, head circumference, and mother-infant interaction is conflicting [31]. Authors of scientific research note the link between a high level of stress and anxiety and the risk of obstetric complications. In this regard, they recommend including psychological screening and providing qualified medical and psychological support to pregnant women to prevent complications in both the mother and the child [12, 14, 26].

Under stressful conditions, the endocrine, nervous, and immune systems unite to support homeostasis. However, during periods of chronic stress, these systems can become maladaptive and lead to long-term negative health consequences, as confirmed by a literature review [32].

Available scientific evidence suggests that a number of factors, such as forced evacuation, sheltering, constant feelings of insecurity, stress, malnutrition, and limited access to quality medical care, increase the likelihood of obstetric complications, increase the risk of low birth weight and intrauterine developmental defect, and stillbirths [1, 2, 12, 13, 20, 33–35].

It has been scientifically proven that the impact of war on the intrauterine development of the fetus increases the risks of impaired mental health in the future [1, 15]. In a study dedicated to the impact of maternal stress on children's neurodevelopment during the first two years of life, it was established that maternal stress is the most important factor affecting the psychomotor development of children from birth to two years of age ( $p = 0.01$ ) [36].

As a result of military aggression, certain territories of Ukraine are becoming uninhabitable. As a result, many residents of the southeastern regions of Ukraine were forced to evacuate to the western region of the country, resulting in the emergence of a new social group of pregnant women with the status of internally displaced persons (IDP) [2, 33].

Due to active hostilities in Ukraine, refugee pregnant women to the European Union (EU) countries have been added to the existing contingent of IDP, and therefore the issue of their adaptation is becoming particularly urgent [2, 18, 37]. As a result, a significant portion of the population faces problems related to stress caused by hostilities and forced displacement [38]. It was established that refugee or IDP status is associated with a significant increase in the risk of psycho-emotional problems in women during pregnancy and postpartum [3, 10, 15, 37–39].

The ongoing war, fear of the uncertain future, destroyed housing, uncertainty about the future, including living in other countries as refugees, and the lack of permanent sources of income, lead to stress reactions that are exacerbated by endless information about hostilities [2, 40]. Ukrainian refugee women as a result of the war face additional risk factors, such as the loss of their usual way of life and security, separation from their husbands, the need to adapt to a new country and possible difficulties, socio-economic disadvantage, communication problems due to language, fear for relatives who remained in Ukraine or joined the army, as well as terrible memories [18].

In addition, when arriving in a foreign country, separation from family, burden of finances, and dealing with discrimination may exacerbate the development of postpartum depression [41]. An analysis of scientific sources shows that increasing cultural awareness is an important factor for establishing mutual understanding between medical workers and the patient, which makes patients more open to receiving medical care [41, 42].

The war in Ukraine has drawn the attention of European countries to its numerous and diverse consequences, including the migration and economic crisis [2, 43]. Since 2022, the borders of the EU have been crossed by over 5 million Ukrainian refugees, the vast majority were women and children from all corners of Ukraine [18, 44]. Currently, more than 4.2 million people from Ukraine have had the opportunity to use the temporary protection mechanism. Many of these people are pregnant women, who constitute a particularly vulnerable group among displaced persons, so the issue of their adaptation is particularly urgent [44]. However, the exact number of women, including pregnant women, who have become refugees from the war in Ukraine is unknown. According to the United Nations Population Fund, at the beginning of the full-scale Russian invasion, about 265,000 women in Ukraine were expecting. As of June, Ukraine's Ministry of Health reported almost 50,000 newborn babies [45].

The dramatic increase in the number of Ukrainian refugees to EU countries due to the ongoing conflict has created significant problems in healthcare and social services [46]. From February 2022 to the end of March 2023, the Estonian border was crossed by more than 127,000 Ukrainian war refugees, of whom 58,000 used Estonia as a transit country. Approximately 36,000 Ukrainian war refugees with temporary shelter are currently in Estonia [47]. In the context of this situation, a survey of Ukrainian war refugees was conducted in cooperation with the Centre for Applied Social Sciences of the University of Tartu RAKE and the Praxis think tank [48]. This study states: "An adult Ukrainian war refugee who has received temporary protection and lives in Estonia has the face of a young, healthy woman with higher education". 74% of war refugees who reached Estonia are women, and more than half have higher education.

In the study "War Refugees of the Year in Estonia", conducted by the Ministry of Social Affairs [47], it was revealed that compared to 2014, the profile of Ukrainian war refugees who arrived in Estonia from 2022 is different: if in the period 2014–2017 refugees were predominantly young men with a low level of education, then among the

current Ukrainian war refugees there are more women with a higher level of education. Currently, there is a lack of European scientific research on the psycho-emotional state of refugee pregnant women from Ukraine, as well as the experience of medical professionals in the field of perinatal care for this category of patients [49–51].

To provide psychological support to war refugees, Estonia quickly took a number of measures. This allowed refugees to receive psychosocial assistance, and specialists to undergo training to work with people who have experienced war trauma. In particular, the Social Insurance Board organized the provision of psychosocial crisis assistance at accommodation centers, and the Ministry of Social Affairs provided a pastoral care service. War refugees receive consultations in Ukrainian both through the victim support service and through the consultation line of the Association of School Psychologists [47].

The outbreak of the war in Ukraine created an exceptional situation and challenge for the Polish healthcare system, as it led to an increase in the number of refugee women giving birth in Polish hospitals. According to the National Health Fund [52], 4,306 children of Ukrainian refugees were born in Polish hospitals last year.

In view of the above, research conducted by Polish scientists highlights the experience of Polish midwives in caring for pregnant Ukrainian women after the outbreak of the war [49, 50].

Pregnant refugee women from Ukraine experienced numerous traumatic events, which indicates an increased need for emotional support. According to researchers, the most frequent reactions included crying, increased anxiety and irritability, fear, alienation, and a constant search for information about the current situation. Difficulties with breastfeeding were also observed, which were considered a consequence of chronic stress [49].

The use of online semi-structured interview methods in qualitative research allowed for the identification of the main barriers in the care of pregnant refugees from Ukraine, namely: linguistic, cultural, educational, and psychological. The existence of specific characteristics, closely related to different levels of cultural differences (including traditions, adaptation features such as alienation, passivity), as well as assimilation processes that manifest through instrumental acculturation and informational reorientation, was also noted [50].

A group of authors emphasizes that ensuring access to information in Ukrainian regarding the healthcare system in Poland or other bordering countries is critically important for providing effective perinatal care to this population group [18]. A recent study conducted in Norway showed that communication barriers and limited access to services were among the main difficulties faced by pregnant refugee women from Ukraine. Along with this, the professional and respectful attitude of healthcare workers contributed to the formation of a positive experience and leveled out the negative aspects associated with communication and adaptation in an unfamiliar healthcare system [51]. According to the study data [18], expectations regarding future experiences are important predictors of future birth outcomes. The authors emphasize that providing clear information about perinatal care in a new country can help reduce psychological distress among pregnant refugee women.

Lithuanian scientists in their research interviewed Ukrainian refugee women and Lithuanian women. The survey included the Edinburgh Postnatal Depression Scale (EPDS) and a questionnaire designed to assess the social and medical characteristics of the mother-child dyad in the early postpartum period. Additionally, medical records from the maternity ward were analyzed [15]. According to the study results, the average EPDS scores among Ukrainian women were significantly higher than those of Lithuanian women. At the same time, the authors emphasize that women who arrived in Lithuania to join close relatives had lower EPDS scores compared to those who evacuated from combat zones without support. This confirms that the presence of close relatives and a comfortable environment are important for women's emotional state during pregnancy and in crisis situations [15].

According to the results of a systematic review and meta-analysis, refugee women are twice as likely to experience symptoms of postpartum depression than non-refugee women. Factors that increase the likelihood of postpartum depression include language barriers, social isolation, financial difficulties, and discrimination [37, 39, 41, 53].

Analysis of literary sources shows that the financial and socio-economic situation of pregnant and young mothers during migration affects mental health, as unstable access to basic resources caused by wartime economic problems significantly affects the well-being of future mothers [19]. The authors emphasize that the prevalence of mental disorders among this population group necessitates the need for comprehensive medico-psychosocial services and the necessity of timely correction of anxious states. Furthermore, to effectively identify a high-risk group, it is important to consider cultural factors (language, traditions, etc.) and use a wide range of psychological diagnostic methods, including questionnaires, structured interviews, and screening for postpartum depression [11, 15, 18, 20].

The absence of relatives or friends, as well as family support, is considered a common situation for women who find themselves far from home, and is an important risk factor for the development of perinatal mental health problems [18]. In this regard, the critical need for support from immediate family members and the creation of a supportive environment for women's emotional well-being during this vulnerable period is emphasized [11, 15, 51]. Information regarding the impact of the war in Ukraine on the psychological state of pregnant women in neighboring European countries is contained in a few studies [15–17].

The ongoing war in Ukraine and its impact on the European economy have led to an economic crisis that has potentially affected the mental health of European women in the perinatal period. They have an increased risk of anxiety and depression due to the dual stress of pregnancy and socio-political instability, despite the absence of direct exposure to military events [16, 17].

As an example is the migration crisis in Poland, which arose a few months after the start of the war in Ukraine, which caused an additional burden on the resources of Polish hospitals. Which subsequently led to problems with providing medical services to pregnant women and planning the further work of the health-care system. This became a potential stress factor for

women expecting a child and led to chronic persistent fears about childbirth [16, 54].

In one study [16], a link is suggested between resilience and the negative impact of war on the psychological well-being of Polish women in the perinatal period. It was found that resilience is assessed as a protective factor against anxiety and depression in Polish pregnant women during the crisis period. That is why these results and conclusions will be useful for understanding mental health problems in the perinatal period, especially in connection with potential future crises of an economic or military nature. In another study, conducted by an online survey, the severity of depressive symptoms and anxiety was assessed among Polish female citizens aged 23–43. The assessment was carried out during pregnancy (before 33 weeks and/or between 33 and 37 weeks), as well as 4 weeks postpartum. The data obtained showed that 31.6% of participants experienced depressive symptoms, while 70.4% reported increased anxiety related to childbirth. Furthermore, 24.3% felt significant anxiety due to the war in Ukraine, and 25% suffered from strong anxiety related to the global situation in the world [17].

Considering the problem and relying on the conclusions of researchers, there is a critical need to intensify research on assessing the psychological state of pregnant women during the war in Ukraine [18]. Experts emphasize the need for further scientific study of the long-term impact of the war on the mental health of mothers and their children [17, 38].

Unfortunately, the current level of education on perinatal mental health issues among medical personnel in many European countries remains insufficient. This confirms the need to develop joint European recommendations and training standards that will allow specialists to effectively care for the mental health of patients and minimize the risks associated with re-traumatization, as experienced by experts in this field [18].

A number of researchers emphasize that effective interventions in the field of mental health require cooperation between specialists, researchers, community leaders, and people who have personally experienced psychological trauma [4, 23]. They note that it is collective efforts that are crucial for providing effective support to victims. It has been established that social support networks and financial well-being are protective factors against war-related stress [19]. It is important for specialists to consider that concerns about the child's health and difficulties with access to medical care are key variables that can affect the mental well-being of pregnant women.

Scientists in the field of perinatal mental health emphasize the need for further scientific research into the impact of war on the mental health of mothers and their children [17, 18, 38, 55–57].

## CONCLUSIONS

A review of scientific sources indicates that pregnant women who are refugees due to the war have significant psychological distress both during pregnancy and in the postpartum period. For pregnant women, the impact of war can have consequences for two generations at once – for both the mother and the child. Due to experienced trauma, loss of loved ones, forced displacement, and constant fear for their own lives and the lives of relatives, pregnant

women have a high risk of developing depression, anxiety, and PTSD. Due to active hostilities in Ukraine, pregnant refugees to EU countries have been added to the existing contingent of IDP, and these displaced pregnant women are at extremely high risk of psychological disorders.

Many studies have shown that anxiety, depression, and PTSD increase the risk of adverse birth outcomes. Premature birth, miscarriage, bleeding, preeclampsia, higher frequency of caesarean section, low birth weight, low Apgar score, fetal growth restriction, stillbirth – these are the most frequently mentioned evaluated outcomes.

Establishing the link between impact and outcome can help us understand risk factors and guide us in future clinical and research practice.

Emotional, neurological, and motor development of children is closely linked to the mother's well-being, mental health status, and socio-economic conditions during the perinatal period, which emphasizes the need for greater and better support for women from medical professionals.

Therefore, the issue of developing tools for psychological screening and comprehensive support programs, where the provision of women's mental health is realized through the interdisciplinary interaction of specialists, becomes relevant. Particular attention is drawn to the need for further research aimed at studying the mechanisms of the influence of maternal anxiety and depression on the antenatal development of the fetus and long-term consequences for the child's health.

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