Article

Psychosocial Risk Factors and Psychopathological Outcomes: Preliminary Findings in Italian Pregnant Women

Maria Rita Infurna *[ID]**, Eleonora Bevacqua, Giulia Costanzo, Giorgio Falgares**[ID] **and Francesca Giannone**

Department of Psychology, Educational Sciences and Human Movement, University of Palermo, 90144 Palermo, Italy
* Correspondence: mariarita.infurna@unipa.it

Abstract: The perinatal period may represent a particularly challenging time for expecting parents. Previous studies have highlighted an association between several perinatal risk conditions (e.g., childhood maltreatment, poor social support, and stress levels) and the development of psychopathological symptoms in pregnant women, especially depression symptoms. The current study examined the effects of psychosocial risk factors (childhood maltreatment, poor social support, and stressful events) on anxiety, depression, perceived stress, irritability/anger, relationship problems, psychosomatic symptoms, specific physiological problems, and addiction/at-risk behaviors. Sixty-one pregnant women (age range = 24–45) participating in a larger study completed questionnaires about childhood maltreatment (CECA Q.), Maternity Social Support Scale (MSSS), questionnaire on stressful events, and the Perinatal Assessment of Maternal Affectivity (PAMA) during their pregnancy. Results from regression analysis indicated that the presence of childhood maltreatment predicted elevated depressive symptoms, elevated irritability and anger, and elevated relationship problems. Further, stressful events in the year prior to pregnancy predicted elevated psychosomatic symptoms during pregnancy. No other significant associations were found. In this study, traumatic childhood events were strongly associated with mental health symptoms during pregnancy. This is an important finding that suggests the importance of screening and targeting psychotherapeutic interventions for vulnerable women during pregnancy.

Keywords: childhood maltreatment; social support; stressful events; psychopathological outcomes; pregnancy

1. Introduction

The perinatal period, which is typically defined as from the beginning of pregnancy to one year after childbirth, is associated with major physiological and emotional changes related to pregnancy, childbirth, and the care of a newborn. Such intense changes can make the transition into parenthood a time of vulnerability for mothers and fathers. During gestation, caregivers are required to reorganize their internal experience and begin to change their identity to accommodate their new role as parents [1,2]. Pregnancy is usually defined as a generally positive and joyful time for most; nevertheless, there may also be severe stressors associated with the physical, emotional, and cognitive changes that affect women in the prenatal period [3]. These stressors may be exacerbated by recall of one's own childhood caregiving experiences [4,5].

As research has shown, experiences of childhood maltreatment can have long-term negative consequences on adult health [6–10]. Childhood adversities typically refer to a wide range of negative early experiences, including physical, sexual, and emotional abuse; physical and emotional neglect; exposure to domestic violence; the presence of a family member with mental illness and/or substance abuse problems; bullying; parental death or loss; serious accidents or injuries; and extreme poverty [10]. Among all experiences of childhood adversity, research has demonstrated a strong link between experiences of childhood maltreatment and several psychopathological conditions in the lifespan, such as post-traumatic stress disorder, suicidal

and self-injurious behavior, depressive symptomatology, personality disorders, substance abuse, somatization, anxiety, and dissociation [6]. Considering the possible explanations of the association between childhood maltreatment experiences and psychopathological conditions, psychodynamic models highlight how experiences of childhood maltreatment can threaten fundamental human needs to belong and to create positive relationships, which are scaffolding for the development of self-worth and security feelings [11,12]. Given the importance of early nurturing bonds, traumatic experiences within the relationship between parents and their child can lead to the damaged development of all future relationships, including that of maltreated individuals with their offspring [13].

A growing body of research has shown interest in studying the relationship between childhood maltreatment and adverse psychological outcomes specifically during pregnancy [14,15]. The long-term consequences of early traumatic experiences are a serious public health concern. Therefore, identifying sensitive life periods when childhood maltreatment consequences are most salient may lead to successful intervention efforts. Research has shown that the perinatal period is one such sensitive time point [16].

In line with the attachment theory and psychodynamic models, the perinatal period is a time during which the negative effects of childhood maltreatment can manifest [13,14]. Indeed, early adverse experiences, particularly those of abuse and neglect, may be reactivated by the transition process to motherhood, potentially eliciting emotional and psychological responses associated with those experiences [17,18]. To confirm this theory, an interesting longitudinal study compared psychological distress in a group of pregnant and non-pregnant adolescents. Findings highlighted that early traumatic experiences can be considered predictors of psychopathological conditions among pregnant and parenting adolescents but not among nulliparous adolescents [19]. During pregnancy, emotional distress such as depression may be caused by recall of childhood maltreatment, which can elicit trauma-related thoughts and feelings [20,21].

Women who have experienced abuse in childhood may therefore be at particularly high risk for the development of psychopathological conditions such as post-traumatic stress disorder and post-partum depression during pregnancy and the postpartum period [22–25]. A recent systematic review of the empirical literature on the relationship between maternal histories of childhood maltreatment and perinatal mood and anxiety disorders revealed strong trends of association between adverse early experiences and perinatal depression, as well as post-traumatic stress disorder [20].

Research highlights that early traumatic experiences not only may affect mothers' psychological well-being during the perinatal period but also may have potential negative implications for their offspring's health and development. Indeed, strong associations were found between maternal psychological distress and increased risk for preterm birth, low birth weight, poor health, and other pregnancy and birth complications [26–28]. Moreover, evidence suggests that exposure to maternal psychopathology during the perinatal period also may have detrimental effects on the cognitive, behavioral, and emotional development of offspring, increasing the risk of psychiatric disorders in the adolescence and early adulthood of offspring [29,30].

The aforementioned studies show that pregnancy is a sensitive window during which to act promptly to avoid possible negative consequences for women and families. Among possible negative effects, previous studies have focused mainly on postpartum depression and have shown that it is associated with serious emotional distress, important social and occupational impairments, and increased healthcare utilization [31]. Postpartum depression may also affect women's parenting functioning and couples' relationships [32]. The potential link between a history of abuse and maternal depression during pregnancy has been less investigated [33] despite evidence suggesting that prenatal depression and postpartum depression may have similar negative effects and that pregnant women with a history of early traumatic experiences can manifest severe depression symptoms [34,35]. Further, as evidenced in some studies, almost 50% of women experience continued prenatal depression in the postnatal period [36,37].

For this reason, assessment during pregnancy is necessary to immediately detect, treat, and reduce depressive symptoms, as well as other forms of psychopathological distress [38,39].

Besides the serious negative consequences of childhood maltreatment, several risk factors associated with prenatal and postpartum psychopathological distress (anxiety, relationship, or psychosomatic problems), such as low social support and stressful life events, have been detected [40].

Knowing and understanding predictors of psychological negative conditions in pregnancy is crucial to avoid negative consequences for parents and children. One of the major obstacles to implementing effective prevention programs is inadequate programs for the early identification of women who are at risk of suffering from psychological problems during pregnancy and postpartum [41]. This situation has often left such disorders undetected and untreated or only detected at an advanced stage [42]. In this study, a wider range of potential risk factors (such as childhood abuse, lack of social support, and stressful events) for psychopathological outcomes was examined.

The current study aimed to present preliminary findings of larger ongoing research to garner a better understanding of the associations between potential risk factors and mental health outcomes in a sample of pregnant women. Targeting the risk factors of future mothers may help to reduce mental health problems for women, improve pregnancy outcomes, and offer a better family environment for children.

2. Materials and Methods

2.1. Procedure and Participants

Participants in this study (N = 61) comprised a convenience sample of Italian pregnant women. Eligibility requirements included the following: (a) being pregnant, (b) being at least 18 years of age, and (c) having the ability to understand and speak fluent Italian. Eligible participants provided informed consent after being provided with a thorough description of the purpose of the project. Following informed consent, participants completed a battery of self-report measures on their smartphone or computer/tablet. The project was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Department of Psychology, Educational Science and Human Movement at the University of Palermo (V.8_22/05/2022).

Participants were recruited through the active involvement of birth centers and local health services and health workers (e.g., gynecologists, obstetricians, etc.); formal and informal birth support networks; and the posting of fliers in public healthcare service locations, hospitals, community prenatal clinics, and social service agencies serving pregnant women.

2.2. Measures

–   Questionnaire on sociodemographic characteristics and pregnancy-related variables: an ad hoc questionnaire used to collect primary information such as date of birth, marital status, education level, gestational age (in weeks), primiparity (first pregnancy or not), other children, information on the current pregnancy (single/twin, high/low risk), and whether they were currently romantically involved with a partner. Further questions assess the presence of psychological distress (depression, anxiety, etc.) before the current pregnancy.

–   *Stressful Events in the Previous Year*: a 15-item questionnaire assessing any stressful events that occurred in the previous year (economic problems, illness of a loved one, change or loss of work, etc.) through dichotomous questions. A final single item assesses the impact of reported stressful events (none, mild, medium, and strong levels).

–   *Maternal Social Support Scale (MSSS)* [43]: The MSSS is a 6-item, 5-point Likert-type rating scale that measures perceived social support (i.e., friendship network, family support, help from spouse/partner, and conflict with spouse/partner). The total possible score is 30, with cutoff points suggested by Webster [43] as follows: 0–18 (low social support), 19–24 (medium support), and >24 (adequate support). The MSSI showed good psychometric properties.

- *Childhood Experience of Care and Abuse Questionnaire (CECA.Q)* [44]: a self-report measure designed to collect information concerning adverse events occurring before the age of 17 years. These experiences include physical abuse by the main mother and father figures, sexual abuse by any adult, parental antipathy (hostility, rejection, or coldness), and emotional or physical neglect (defined in terms of a parent's disinterest in material care, health, schoolwork, and friendships). It thus combines classic traumatic experiences with negative bonding experiences with each caregiver. This measure is considered the gold-standard measure for childhood experience assessment, and it has satisfactory levels of test–retest reliability and concurrent validity.
- *Perinatal Assessment of Maternal Affectivity* (PAMA) [45]: The PAMA is an 11-item screening instrument used to assess perinatal maternal affective disorders. The first eight items deal with the following dimensions: anxiety, depression, perceived stress, irritability/anger (irritability, hostility, arguments with others, and anger attacks), relationship problems (including couple, family, friends, and at work), abnormal illness behavior (somatization, functional medical syndromes, chronic pain syndromes, and hypochondriac complaints), physiological problems (with sleeping, eating, or sexual desire), addictions (smoking, drinking alcohol, taking drugs, gambling, and compulsive use of the Internet), and other risky behaviors (such as driving at high speed, dangerous sports, or taking unnecessary risks at work). The last three items are questions relating to motherhood and cultural factors. The questions are: "Do you think your answers to these questions are related to being, or becoming, a mother? If "YES" or "Possibly", in what way?"; "Do you feel happy or content with being, or becoming, a mother?", and "Are there other questions, or words, that would be better to describe how you have been feeling over the past two weeks? If "YES", please describe". A self-rating of 0–3 is elicited for nine scaled items, with a total maximum score of 27. A higher score indicates a greater risk for an affective disorder.

2.3. Data Analysis

All measures were scored according to published guidelines, and basic descriptive statistics were calculated. The associations between potential risk factors and specific types of psychopathological distress were examined using binary linear regressions. In each case, the independent variables were, the CECA Q. dichotomic score, MSSS total score, and the presence of stressful events in the last 12 months; dependent variables included the different PAMA subscales (e.g., anxiety, depression, relational problems, etc.). All analyses were carried out using SPSS version 28.0 (SPSS Inc., Chicago, IL, USA). The significance level was determined as 0.05.

3. Results

3.1. Sample Characteristics

The study population consisted of 61 Italian pregnant women, mainly from central (47.5%) and southern Italy (44.3%), aged between 24 and 45 years old. Most of the pregnant women were married or lived with their unmarried partner (91.8%), had a university degree (72.2%), and had paid work (85.2%). Only 18% of the sample reported a low economic state, whereas the rest of the sample reported an average (57.4%) or medium-high economic status (24.6%).

As regards current pregnancy, most participants had a planned pregnancy (86.9%), 72.1% of women were primipara, and 57.4% were in the third trimester.

From a clinical perspective, 82% of women reported a low-risk pregnancy, 81.3% reported no pharmacological treatment for psychological disorders, 83.6% had chosen a private gynecologist, and 54.1% attended childbirth preparation training.

A proportion of 65.3% of participants did not have a history of abortion, voluntary interruptions of pregnancy, perinatal death, or high-risk pregnancies. Table 1 indicates the main participant information.

Table 1. Characteristics of the study population (N = 61).

Variable	n	%
Age		
45–37 years old	18	29.5
36–30 years old	31	50.8
<29 years old	12	19.7
Country: Italy		
Northern	5	8.2
Central	29	47.5
Southern	27	44.3
Education		
Primary school	1	1.6
High school diploma	16	26.2
University degree	22	36.1
Postgraduate degree	22	36.1
Employment status		
Unemployed	4	6.6
Housewife	3	4.9
Student	2	3.3
Precarious employment	13	21.3
Stable employment	39	63.9
Marital status		
Unmarried	5	8.2
Married/cohabitant	56	91.8
Economic status		
Low	11	18
Middle class	35	57.4
Medium–high	15	24.6
Gestational age		
First trimester	7	11.5
Second trimester	19	31.1
Third trimester	35	57.4
Pregnancy		
Planned pregnancy	53	86.9
Unplanned pregnancy	8	13.1
First pregnancy		
Yes	44	72.1
No	17	27.9
Other children		
Yes	11	18
No	50	82
High-risk pregnancy		
Yes	11	18
No	50	82
Psychopharmacological treatment		
Yes	0	0
No	61	100

3.2. Risk Factors and Psychopathological Outcomes in Pregnancy

As regards child maltreatment, 59% of the total research sample (36 out of 61 women) reported at least one experience. Specifically, more than half (54.1%) reported emotional abuse (from mother and/or father), described as hostility or coldness toward the child; 8.2% experienced physical abuse, described as serious forms of physical violence toward the child (e.g., punching, hitting with an object, or threatening with a knife); and 6.6%

experienced sexual abuse, defined as any non-consensual sexual contact by any perpetrator (e.g., fondling, oral sex, or penetration) before the age of 16.

Over half of the sample (55.7%) reported the presence of stressful events in the last 12 months. The type of stressful events reported concerned serious illness or accidents involving oneself or loved ones, grief, being a victim of violence, change or loss of important lifestyle components (study, work, or home), marital separation, problems with justice, and problems with work or finances. Among those who reported the presence of stressful events in the last 12 months, more than half (18 out of 34) were in the third trimester of gestation; moreover, 38.2% and 35.3% reported medium and strong levels of discomfort, suffering, and stress caused by these events, respectively.

Results from the MSSS showed that the majority (88.5%) of pregnant women indicated a medium level of perceived social support (from partner, parents, and friends), while 6.6% indicated a low level, and only 4.9% indicated a high level. With the progress of the gestation trimester, this perception did not significantly change.

Detailed information on childhood maltreatment experiences, stressful events in the previous year, and perceived maternal social support are provided as Supplementary Materials.

3.3. Associations of Risk Factors and Psychopathology in Pregnancy

Subscales of the PAMA were related to different risk factors, such as childhood maltreatment, stressful events in the last year, and lack of social support.

Regression analysis (Table 2) showed that the presence of childhood maltreatment was significantly related to higher levels of depression symptoms ($R^2 = 0.07$, Adj $R^2 = 0.05$, $F(1,59) = 4.11$, $p = 0.047$), higher levels of irritability and anger ($R^2 = 0.0.7$, Adj $R^2 = 0.05$, $F(1,59) = 4.12$, $p = 0.047$), and higher levels of relational problems ($R^2 = 0.12$, Adj $R^2 = 0.10$, $F(1,59) = 7.68$, $p = 0.007$).

Table 2. Association between childhood maltreatment and PAMA subscales.

Dependent Variable	B	SE	Beta	*p*
Anxiety	0.12	0.21	0.08	0.555
Depression	0.35	0.17	0.26	0.047 *
Perceived stress	0.33	0.22	0.19	0.144
Irritability/anger	0.45	0.22	0.26	0.047 *
Relationship problems	0.54	0.19	0.34	0.007 **
Psychosomatic problems	0.10	0.21	0.06	0.643
Physiological problems	−0.14	0.22	−0.08	0.520
Addiction/at-risk behaviors	0.11	0.10	0.14	0.277

PAMA: Perinatal Assessment of Maternal Affectivity; B: unstandardized coefficient; SE: standard error; Beta: standardized coefficient. * $p < 0.05$. ** $p < 0.01$.

Regression analysis with stressful events in the last year as independent predictors indicated that the presence of stressful events predicted significantly more psychosomatic symptoms during pregnancy (Table 3; $R^2 = 0.10$, Adj $R^2 = 0.08$, $F(1,59) = 6.47$, $p = 0.014$), whereas no significant relations were found for other psychopathological subscales.

Table 3. Association between stressful events and PAMA subscales.

Dependent Variable	B	SE	Beta	*p*
Anxiety	−0.31	0.21	−0.19	0.138
Depression	−0.08	0.18	−0.06	0.660
Perceived stress	−0.19	0.22	−0.11	0.389
Irritability/anger	0.05	0.23	0.03	0.827
Relationship problems	−0.07	0.20	−0.04	0.734

Table 3. *Cont.*

Dependent Variable	B	SE	Beta	*p*
Psychosomatic problems	−0.51	0.20	−0.31	0.014 *
Physiological problems	−0.29	0.21	−0.17	0.184
Addiction/at-risk behaviors	<0.01	0.10	<.01	0.992

PAMA: Perinatal Assessment of Maternal Affectivity; B: unstandardized coefficient; SE: standard error; Beta: standardized coefficient. * *p* < 0.05.

Regression analysis with maternal social support as independent predictors indicated that higher levels of a lack of social support from partner, parents, or friends did not predict any psychopathological symptoms (Table 4).

Table 4. Association between perceived social support (MSSS) and PAMA subscales.

Dependent Variable	B	SE	Beta	*p*
Anxiety	−0.02	0.04	−0.05	0.697
Depression	−0.05	0.04	−0.17	0.199
Perceived stress	−0.02	0.05	−0.07	0.615
Irritability/anger	−0.01	0.05	−0.04	0.761
Relationship problems	−0.02	0.04	−0.07	0.592
Psychosomatic problems	−0.05	0.04	−0.15	0.247
Physiological problems	0.02	0.04	0.07	0.605
Addiction/at-risk behaviors	0.02	0.02	0.15	0.246

MSSS: Maternity Social Support Scale; PAMA: Perinatal Assessment of Maternal Affectivity; B: unstandardized coefficient; SE: standard error; Beta: standardized coefficient.

4. Discussion

This study reported preliminary findings from broader ongoing research that aims to establish links between several risk factors for psychopathological outcomes in pregnant women. Specifically, in the current study, the unique contribution of these risk factors to specific clinical manifestations (e.g., anxiety, depression) during pregnancy was examined. However, given the small sample size and the use of multiple tests, results from this study should be considered provisional.

The current study builds on the childhood maltreatment literature by linking childhood maltreatment to psychopathological problems specifically during the prenatal period, which is a phase of extensive psychological and physiological changes. The PAMA questionnaire is a tool for the screening of perinatal affective disorders that considers not only depressive symptoms but also anxiety; hostility; and somatic, relational, behavioral, and addiction problems.

It is well-recognized that childhood abuse is among the major risk factors for depression in adulthood [46]. Despite the detrimental effects of depression at any time during a woman's lifetime, the effects of depression during the prenatal and postpartum periods are of great importance due to their severe and protracted consequences for both women and their offspring [33,47]. Findings from this study indicate an association between childhood abuse and depressive symptoms during pregnancy. As suggested in previous research, pregnancy may be a particularly sensitive period due to the development of a new self-identity, as well as the substantial biological and emotional changes that occur during the transition to motherhood [25,33]. Therefore, identification of traumatic childhood experiences during pregnancy may allow pregnant women at risk for depression to be closely observed by healthcare professionals, enabling the implementation of important preventive strategies, as treatment of prenatal depression can ward off the onset of postpartum depression [37].

Furthermore, in our sample of pregnant women, childhood maltreatment was associated with higher levels of irritability and anger, as well as with relationship problems, including in couples, as well as with family and friends, and at work. These findings contribute important insights to current knowledge, highlighting the effect of childhood maltreatment not only on depressive symptoms but also on other areas of psychopathologi-

cal distress. Significantly, dimensions such as irritability and anger (against others), and relationship problems appeared to be affected by traumatic childhood experiences. Indeed, from a psychodynamic point of view, an infant is shaped by his environment, interaction with his parents, and his own personal growth [48,49]. Psychologically, becoming a mother requires the activation of mental patterns that pregnant women and their own parents had reciprocally shaped. Unfortunately, this process may be problematic or impaired in women with traumatic childhood experiences, in whom traumatic memories can cause psychological distress, suggesting the need for greater attention to women's childhood histories during prenatal screening in order to achieve early detection of expectant mothers at risk of developing psychopathological conditions.

In line with previous research [4,50], this study considered not only childhood maltreatment but also the presence of several stressful events in the last year (economic problems, illness of a loved one, change or loss of work, etc.) and a lack of social support (from partner, parents, and friends) as potential risk factors for psychopathological symptoms during pregnancy.

Overall, the findings of regression analysis indicated that the presence of stressful events in the last 12 months predicted higher levels of psychosomatic symptoms but not other psychopathological problems. This result is in line with the literature considering recent stressful life events (including illness, accidents, domestic violence, etc.) among the main risk factors for the development of psychopathological outcomes in pregnancy and the perinatal period [51,52]. These data seem to underline the importance of clinicians and medical staff evaluating whether the presence of psychosomatic symptoms (such as somatization, headaches and migraines, skin rash, stomach ulcers, and hypochondriac complaints) may have a psychological rather than a physiological etiology during pregnancy in order to better identify the most accurate interventions.

Moreover, contrary to expectation, no associations between lack of social support from partners, parents, and friends and PAMA subscales were found. This result does not allow for validation of the research hypothesis suggested by the literature, according to which poor social support represents a strong risk factor for psychopathological outcomes during pregnancy and the perinatal period [53,54]. These unexpected findings may be attributable to the small sample size or factors unique to this sample and should be assessed further in future studies.

Limitations

In this preliminary study, several limitations can be noted. First, our sample was self-selected and not representative of pregnant women. It is expected that the psychopathological consequences would be more marked among women who have more psychosocial stress factors. Future studies are needed to ascertain whether or not these results can be generalized to the broader population of pregnant women.

Second, the sample was small since this study is part of a larger ongoing research project, which did not allow for more sophisticated statistical analysis. The use of multiple tests and the small sample size mean that findings from this study should be interpreted with caution.

Lastly, is important that future research broaden this study to a more representative sample of pregnant women, taking into account other risk factors that may contribute, and start to examine the mechanisms behind these associations. For example, a topic of particular interest but that is still neglected is fathers' experience of pregnancy and their influence on the well-being of women and children. For many years, the literature has mainly focused on expectant mothers, probably because women play a principal role during pregnancy and their experience is more physically and physiologically perceptible than that of fathers [55]. However, in the last few years, researchers have focused their attention on the paternal experience of pregnancy; however, to date, there is not enough evidence to propose appropriate gender-based screening for fathers [56–58]. This area of investigation, which remains understudied, may play a central role in the prevention and management of situations of vulnerability and psychopathological risk.

5. Conclusions

In conclusion, although results from this study should be considered provisional, they suggest that the experience of maternal maltreatment in childhood has an impact on a pregnant woman's mental health and well-being. The results of this study highlight the need to identify at-risk women during pregnancy so as to allow healthcare workers to offer them the necessary help. Women with early traumatic experiences and a state of psychological suffering can be considered at risk. Therefore, comprehensive prenatal screening should include the assessment of childhood maltreatment experiences and of the current psychopathological distress of all pregnant women. This assessment is essential for identifying pregnant women who would benefit from targeted intervention to help interrupt the intergenerational transmission of adversity before babies are born.

The risk of the intergenerational transmission of mental health problems to the next generation of children is well-recognized [59,60]; therefore, prevention and intervention efforts for this vulnerable population may be informed by a better understanding of processes by which traumatic experiences provoke the risk of psychopathological conditions among pregnant women.

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