ORIGINAL ARTICLE

Major Depressive Episode and Generalized Anxiety in Pregnant Women at a Public Hospital in Tucumán, Argentina

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ABSTRACT

Introduction: The well-being of a pregnant woman must be considered holistically from a biological, mental and social point of view. The objectives of this study were to determine the frequency of Current Major Depressive Episode (CMDE), Recurrent Major Depressive Episode (RMDE), and Current Generalized Anxiety Disorder (CGAD) in pregnant women; to associate these frequencies with sociodemographic factors; and to examine the association with Stressful Life Events (SLE) during pregnancy.

Methodology: A descriptive cross-sectional study was conducted on 67 pregnant women in a public hospital in San Miguel de Tucumán in the year 2022. A survey, the Mini International Neuropsychiatric Interview, and a brief SLE scale were administered. Written informed consent was obtained, ensuring confidentiality and anonymity. Association analysis was performed considering $p \leq 0.05$ as significant.

Results: The average age was 28±5.93 years. Six percent (4) reported a personal history, and 10% (7) reported a family history of mental health problems. Additionally, 19% (13) of participants exhibited CGAD, while 51% (34) presented CMDE, with 29% (10) being recurrent episodes. A significant association was found between the frequency of CGAD and the number of SLE during pregnancy ($p=0.018$), whereas no such association was found between CMDE and SLE ($p=0.091$). Furthermore, a significant association was observed between CGAD and the number of children ($p=0.013$).

Discussion: The observed values of Current Generalized Anxiety Disorder and Current Major Depressive Episode in pregnant women coincides with the literature worldwide. The significant association between Anxiety Disorder and Stressful Life Events highlights the importance of considering stress in maternal mental health.

Conclusion: The high frequency of psychopathologies emphasizes the need to design primary care interventions to promote a healthy pregnancy. These interventions could include the use of brief instruments, as employed in this study, for screening psychopathologies.

Key words: depression, anxiety, pregnancy, stressful life events.

Episodio depresivo mayor y ansiedad generalizada en embarazadas de un hospital público de Tucumán, Argentina

RESUMEN

Introducción: el bienestar de una embarazada debe considerarse de manera integral desde el punto de vista biológico, mental y social.

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Objetivos: determinar la frecuencia de episodio depresivo mayor actual (EDMA), EDM recidivante (EDMR) y trastorno de ansiedad generalizada actual (TAGA) en embarazadas, asociar esas frecuencias con factores sociodemográficos y con acontecimientos vitales estresantes (AVE) en el embarazo.
Metodología: se realizó un estudio descriptivo, transversal, a 67 embarazadas en un hospital público de San Miguel de Tucumán, en el año 2022. Se aplicaron una encuesta, la *Mini International Neuropsychiatric Interview* y una escala breve de AVE. Se solicitó consentimiento informado escrito, garantizando confidencialidad y anonimato. Se realizó análisis de asociación considerando significativo p ≤ 0,05.
Resultados: la edad promedio fue de 28 ± 5,93 años. El 6% (4) informó tener antecedentes personales y el 10% (7) antecedentes familiares de problemas de salud mental. Asimismo, el 19% (13) de las participantes presentó TAGA, mientras que el 51% (34) presentó EDMA y de estos el 29% (10) era un episodio recidivante. Se encontró asociación significativa entre la frecuencia de TAGA y cantidad de AVE durante el embarazo (p = 0,018), pero no se encontró dicha asociación entre TDMA y AVE (p = 0,091). Así también, se observó asociación significativa entre TAGA y cantidad de hijos (p = 0,013).
Discusión: los valores observados de trastorno de ansiedad generalizada actual y episodio depresivo mayor actual en embarazadas coinciden con la bibliografía a nivel mundial. La asociación significativa entre trastorno de ansiedad y acontecimientos vitales estresantes destaca la importancia de considerar el estrés en la salud mental materna.
Conclusión: la frecuencia elevada de psicopatologías encontradas resalta la necesidad de diseñar, en atención primaria, estrategias de intervención para promover un embarazo saludable; estas podrían incluir la aplicación de instrumentos breves, como los empleados en este estudio, para tamizaje (*screening*) de psicopatologías.

Palabras clave: depresión, ansiedad, embarazo, acontecimientos vitales estresantes.

INTRODUCTION

During pregnancy, women experience a series of significant physical and psychological changes, making them more vulnerable in terms of mental health[1]. This period entails alterations in their body and well-being that affect their emotional state and their role in society and the family. It is a common occurrence to observe an increase in the manifestation of symptoms related to emotional distress, and psychiatric disorders may even arise[2]. During gestation, we have observed changes in the prefrontal cortex activation, which are associated with an increased sensitivity of pregnant women to threatening stimuli. These brain modifications could be an evolutionary adaptation intended to prepare future mothers for the demands of protection in motherhood, resulting in a general increase in their emotional sensitivity and heightened vigilance to signals of threat and aggression; they could also be responsible for a greater vulnerability to experiencing anxiety disorders during pregnancy[3,4].

Among the primary mental health problems that can manifest during pregnancy, anxiety, and depression stand out due to their high prevalence. Anxiety manifests itself through feelings of worry, nervousness, and restlessness, while a depressive episode manifests through persistent sadness, loss of interest, and lack of energy. Both disorders can negatively affect the quality of life of the pregnant woman and have consequences for both the mother and her child[5]. Anxiety and depression are highly relevant disorders for many professionals in the psychological and psychiatric fields, as they are the two most common reasons for mental health consultations. Being triggered by a combination of stimuli can potentially generate negative changes in the individual's physical and psychological health[6].

At the national and regional levels, there are few studies focused on psychological pathologies during pregnancy, which means they are going unnoticed, ignoring that the evaluation of mothers should be comprehensive, considering psychological assessment and control alongside the monitoring of physiological changes inherent to gestation. This approach would significantly contribute to ensuring a pregnancy with a favorable evolution[7].

Various studies have investigated the prevalence of depression in pregnant women in different countries and regions. For example, a research study carried out in Mexico found that approximately 23.3% of the patients studied exhibited symptoms suggestive of depression during the gestational period[8]. Another study conducted at the National Maternal Perinatal Institute in Lima, Peru, reported an even higher prevalence of major depression during pregnancy, reaching 40.1%[9].

A study conducted in Tucumán, Argentina, found that 50.7% of pregnant women exhibited depression according to the Edinburgh Postnatal Depression Scale (EPDS).

Of these, 21.9% had a major depressive episode by the Mini International Neuropsychiatric Interview (MINI)[10]. Anxiety has also been investigated in pregnant women in different Latin American countries. A study conducted in a municipality in southern Minas Gerais, Brazil, showed that approximately 26.8% of pregnant women reported suffering from anxiety, which was more frequent in the third trimester (42.9%)[11]. Similarly, another study carried out in Colombia found that the prevalence of anxiety during pregnancy was 25.8%[12]. Considering this particular psychopathology, it is relevant to highlight that evidence indicates that the presence of stress or anxiety during pregnancy negatively affects the newborn's potential and weight[13].

Previous research by the team from the Chair of Scientific Research Methodology at the Faculty of Medicine of the National University of Tucumán (UNT) showed a 45% frequency of emotional disturbances during pregnancy. However, after pregnancy, 30% of those affected developed postpartum depression[14]. Later, in another cohort of adolescent mothers, this team observed that 47% experienced emotional disturbances during pregnancy, 28% of the total developed postpartum depression, and 14% had suicidal ideation. Ten percent of the total of these mothers sequentially showed emotional disturbances during pregnancy, postpartum depression, and suicidal ideation[15]. These findings allowed the Chair to open research lines that analyzed pregnant women with depression and their possible neurobiological implications[16].

In summary, pregnancy is a time of high vulnerability for a woman's emotional and psychological well-being. Multiple factors can influence mental health during this stage, including hormonal changes, pregnancy or motherhood-related concerns, and the adaptation to new roles and responsibilities[17]. Adequate mental health during pregnancy is essential for the well-being of both the mother and the future child. However, under 20% of prenatal care providers are reported to assess and treat mental health problems, and less than 20% of pregnant women seek mental health care[18].

The Pan American Health Organization emphasizes the importance of preconception care and focuses on counseling future mothers and detecting risk factors in the reproductive process. The primary purpose is to reduce these risks through proper prenatal care[19]. In Argentina, the 27611 Act, "Comprehensive Health Care during Pregnancy and Early Childhood," known as the 1000 Days Law, aims to protect, strengthen, and support the comprehensive care of the life and health of pregnant individuals and children in their first three years. It establishes prevention and protection practices, promoting a comprehensive view of this life course, understanding the diverse realities in which families care for and raise their children from gestation, and how communities support these care practices[20].

For the reasons mentioned above, we decided to investigate the main psychopathologies in pregnant women.

OBJECTIVES

• Determine the frequency of current major depressive episode (CMDE) and recurrent major depressive episode (RMDE) in pregnant women who attended the Maternity Service of the Hospital Presidente Dr. Nicolás Avellaneda in Tucumán, Argentina.

• Determine the frequency of current generalized anxiety disorder (CGAD) in the pregnant women under study.

• Associate the presence of CMDE and CGAD with the number of stressful life events (SLE) that occurred during pregnancy.

• Associate the presence of psychopathologies with sociodemographic factors.

MATERIALS AND METHODS

We conducted a descriptive, observational, cross-sectional study on 67 pregnant women who were in the waiting room for prenatal care at the Presidente Dr. Nicolás Avellaneda Hospital in the city of San Miguel de Tucumán, in the province of Tucumán, Argentina, during the second half of 2022. We excluded women who refused to participate in the study.

We surveyed on sociodemographic data and applied the Mini International Neuropsychiatric Interview (MINI Test) to evaluate current major depressive episode (MDE) and recurrent major depressive episode (rMDE), along with a brief scale of stressful life events (SLE). The MINI Test is a set of brief diagnostic questionnaires developed in France and the United States to explore various disorders according to the diagnostic criteria of the Diagnostic and Statistical Manual (DSM) III-R. To study the SLE we used a brief scale formulated by the Research Methodology Department of the Faculty of Medicine at the National University of Tucumán, based on the Stressful Life Events Scale developed by Holmes and Rahe. This brief scale, which inquires about 10 SLEs, was previously validated by the team in a population of 470 pregnant women in Tucumán[21]. We selected both instruments because they are brief questionnaires, making them practical tools for measuring psychopathologies and stress factors in primary care.

A written informed consent was requested from the participants, guaranteeing confidentiality and anonymity of the data recorded. This research was evaluated and approved by the Research Ethics Committee of the Faculty of Medicine of the National University of Tucumán (CEI FM-UNT), with a report corresponding to File 1145/611-D.

The studied variables were:

• Age: the time elapsed from birth to the moment of the study, measured in years.

• Personal history of mental health problems: history, records, or relevant information about disorders or difficulties related to mental health that a person has experienced in the past. This history may include anxiety, depression, bipolar disorder, among others, or episodes of significant psychological stress or traumatic events

that have affected the person's mental health in the past. Measured as personal history YES/NO.

• Family history of mental health problems: the presence of disorders or issues related to mental health in a person's family members, such as parents, siblings, grandparents, or other close relatives. Measured as family history YES/NO

• Psychopathologies: organic mental disorders that have evident physical causes and functional mental disorders that encompass abnormal behavior patterns without concrete indications of organic brain alterations. By applying the Mini International Neuropsychiatric Interview (MINI), we established scores of the different subscales to record the presence/absence of current major depressive episode (MDE), recurrent major depressive episode (rMDE), and generalized anxiety disorder (GAD).

• Number of stressful life events (SLE): we recorded the number of circumstances or environmental conditions that threaten, challenge, exceed, or damage the individual's psychological or biological capacities.

They were identified with a brief scale, modified from the Holmes and Rahe Stressful Life Events Scale, made up of 10 items, and constructed and validated by the Scientific Research Methodology Department team.

• Level of education: the highest degree of studies completed, regardless of whether they have been finished or are provisionally or definitively incomplete. The categories considered were uneducated, primary, secondary, and tertiary levels.

• Occupation: type or class of work or activity performed. The categories considered were: are working (Yes/No), are studying (Yes/No), and are stay-at-home moms (Yes/No).

• Gestational age: time elapsed from the date of the last menstruation to the time of the investigation, expressed in weeks.

• Number of children: number of children in the care of the interviewee (we considered biological and non-biological children). We recorded whole numbers.

A descriptive and association analysis using the Mann-Whitney Test with SPSS Statistic 26.0® software, considering $p \leq 0.05$ as significant. We expressed the results as mean and standard deviation.

RESULTS

The average age of the participants was 28.06 ± 5.93 years (minimum 18 and maximum 43 years). The average gestational age in weeks of the participants was 26.85 ± 9.09 weeks. The average number of children per participant was 1.61, with a minimum of 1 and a maximum of 8 children. Seventy-five percent had at least one child in addition to the child in gestation.

Regarding marital status, single or cohabiting women predominated with 79% (Fig. 1).

Considering the level of education, the most frequent were primary and secondary level, 45% each (Fig. 2).

Additionally, 64% of the participants reported being housewives (Fig. 3).

Six percent of the respondents reported having a personal history, and 10% had a family history of mental health problems.

Regarding the frequency of psychopathologies, 51% (34) had an episode of Major Depressive Disorder (MDD), and of these, 29% (10) had a recurrent Major Depressive Disorder episode (rMDD). Also,19% (13) of the surveyed participants had Generalized Anxiety Disorder (GAD).

Considering stressful life events, 16% did not experience any of the studied events, while 15% experienced only one, 30% experienced two, 18% experienced three, and 19% experienced between four and six of them. Only one pregnant woman (1%) experienced

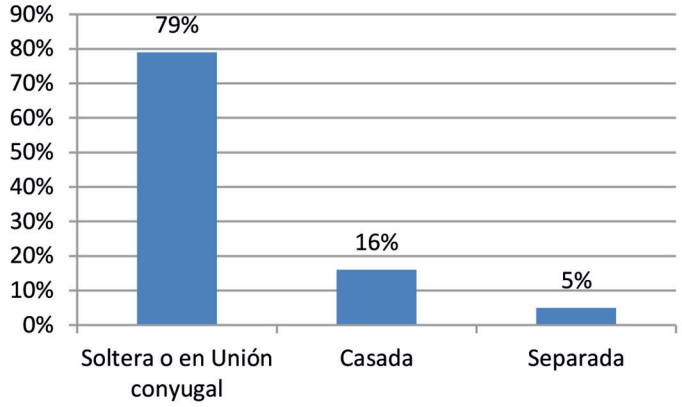

Figure 1: Distribution of pregnant women by marital status (n=67)

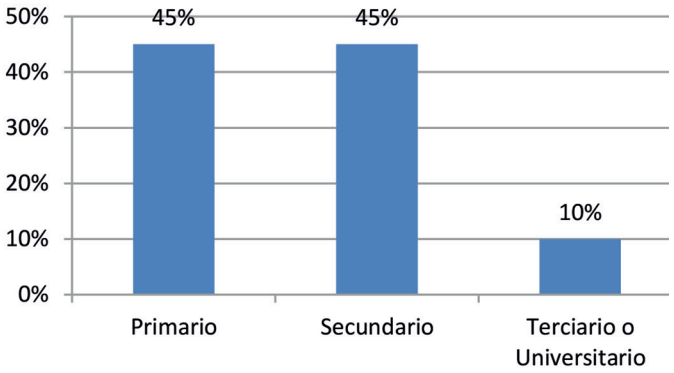

Figure 2: Distribution of pregnant women by level of education (n=67)

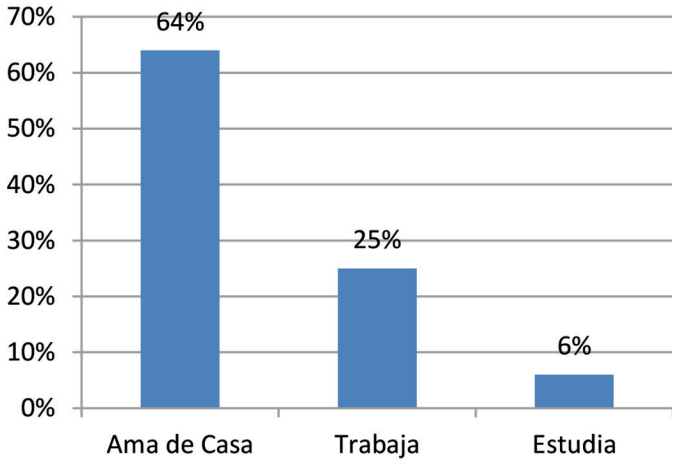

Figure 3. Distribution of pregnant women by occupation (n=67)

seven of the studied stressful life events, and none experienced all ten studied events.

The results observed in this study indicate that the number of stressful life events (SLE) reported is not significantly associated with the presence of MDD in pregnant women (Mann-Whitney test; p = 0.091).

On the other hand, the results indicate the existence of a significant association between current generalized anxiety disorder (GAD) and the number of stressful life events (SLE) during pregnancy (Mann-Whitney test; p = 0.018). Pregnant women who presented GAD experienced a higher number of SLE, on average between 5 and 6 of them (Fig. 4).

Regarding the association with sociodemographic characteristics of pregnant women, the results show that there is no significant association between the presence of psychopathologies and factors such as age, occupation, or level of education. However, there was a significant association between the presence of current generalized anxiety disorder and the number of children the patients had (Mann-Whitney test; p = 0.013).

DISCUSSION

The results of this study show that both current generalized anxiety disorder and current major depressive episodes were frequently present in the pregnant women studied, which is consistent with the literature stating that pregnancy is a stage of high vulnerability for women's mental health[10-11].

Regarding current generalized anxiety disorder, there were no studies that established its frequency in pregnant women; however, a recent study that analyzed prenatal anxiety in a primary care service in Lima, Peru, found a frequency of 70%[22].

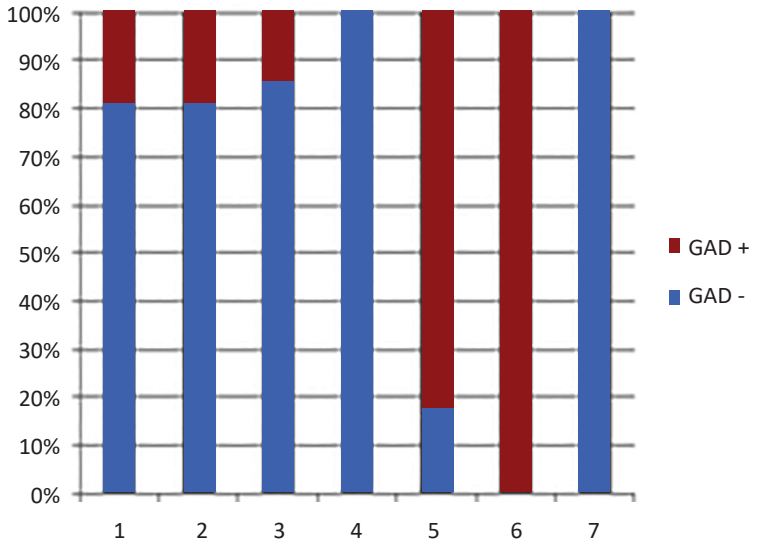

Figure 4: Association between presence of GAD and number of SLEs

In the case of depression during pregnancy, the observed frequency (51%) is alarming as it could be related to the future development of postpartum depression (PPD), as indicated by previous studies from this group and a longitudinal study conducted in the province of Córdoba, which observed that 57% of 91 pregnant women were at high risk of PPD, and 15 of them developed depression during the puerperium[23]. That opens the debate on the importance of developing mental health prevention policies during pregnancy and highlights the relevance of implementing comprehensive prenatal care.

The significant association observed between the presence of current generalized anxiety disorder (GAD) and the number of stressful life events (SLE) highlights the importance of considering stress and stressors in the context of pregnant women's mental health. As the literature indicates, there is undoubtedly a dose-response relationship between the intensity of exposure to stressors and adverse perinatal outcomes, which is valuable for proposing interventions. Health professionals should be aware of the possible influence of these factors and offer mothers adequate and personalized support through early interventions to mitigate adverse health effects during pregnancy.

On the other hand, although the association between the presence of depression and stressful life events is well-known in the literature, the lack of a relationship between the presence of current major depressive episodes (MDD) and the number of SLE observed in this study motivates the proposal of new research. The high frequencies observed could be significantly associated with larger samples. Future studies could also consider other factors, such as a history of previous depression or the social support network, which may play a significant role in the development of depression during pregnancy.

When considering sociodemographic characteristics, the lack of observed association does not coincide with the literature that links the presence of psychopathologies in pregnant women with young age (age < 25 years), lower level of education (illiteracy and primary education), and unemployment[24]. The lack of association observed in this research could be due to the small sample size.

A significant association was found only between the number of children the pregnant woman had and anxiety, which could indicate that women with more children might experience greater vulnerability to developing anxiety during pregnancy. The additional responsibility of caring for multiple children could generate a higher level of stress in these pregnant women.

The data analysis reveals a disparity between the proportion of respondents who mentioned having a personal history of mental health problems (6%) and those who reported recurrent depressive episodes with a higher frequency (29%). This contrast suggests several interpretations regarding the perception and access to information about mental health. The discrepancy could indicate an underestimation of mental disorders by the pregnant women studied, reflecting a tendency to minimize or deny the severity of their previous experiences. It could also mean that they may feel ashamed or afraid of being labeled as "mentally ill." On the other hand, the difference might also point to a lack of knowledge or access to information about the symptoms and detection of mental disorders, especially regarding depression.

The high frequencies of psychopathologies found during pregnancy highlight the need to provide care with a comprehensive and personalized approach for pregnant women, considering the detection of stressful life events as well as other stressors related to the woman's psychosocial environment.

CONCLUSION

The prevalence of psychopathologies, such as current major depressive episodes (MDD) and current generalized anxiety disorder (GAD), in pregnant women in San Miguel de Tucumán is high. Although no significant association was found between MDD and the number of stressful life events (SLE), a correlation was highlighted between GAD and the number of SLE, underscoring the influence of stress on the mental health of pregnant women. Despite the lack of a relationship between psychopathologies and certain sociodemographic factors such as age, occupation, or level of education, an association was established between GAD and the number of children, suggesting a possible specific vulnerability when the number of children is higher.

Pregnancy requires an adaptation that comes with doubts and uncertainties resulting from the changes associated with motherhood. Medical literature acknowledges a specific stress associated with the prenatal stage related to a woman's concerns about physical symptoms, fetal health, childbirth, interpersonal relationships, and post-pregnancy parenting. The need for comprehensive and personalized interventions becomes emphasized, aiming at the early detection of stressors in the pregnant woman's psychosocial environment. Thus, it stresses the importance of a preventive approach, addressing psychosocial aspects to improve her well-being and promote healthy development for the child's future.

PROPOSALS

We propose to design, in primary care, intervention strategies to promote a healthy pregnancy. These could include health literacy regarding indicators or symptoms of mental health issues and the use of brief validated tools, such as those used in this study, for screening psychopathologies. The implementation of appropriate strategies will comprehensively support the mother-child dyad, impacting the child's future development in the medium and long term.

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