



RESEARCH ARTICLE

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CORRELATION BETWEEN LEVELS OF ANXIETY AND SELF-ESTEEM IN HIGH-RISK PREGNANT WOMEN

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ABSTRACT

Objective: To correlate the levels of anxiety and self-esteem in high-risk pregnant women and their respective obstetric data. **Methods and Methods:** This was a cross-sectional study, with an instrument of data descriptive-type quantitative approach. The study population consisted of 126 pregnant women referred to the high-risk unit of Agamenon Magalhães Hospital (HAM), in the period from April to June 2016. The sample included pregnant women aged over 18 years, met by high-risk care services, and excluded puerperas, pregnant women with some previous mental disorder and/or with hearing disabilities who could not read. Data collection occurred through the application of the Rosenberg Self-Esteem Scale (RSS) and Beck Anxiety Scale (BAS), as well as a questionnaire with obstetric data. Data were analyzed through inferential analysis using Pearson Chi-square test and Fisher's exact test, in case the Chi-square test could not be used, presenting the results in tables. **Results:** We observed that anxiety was present in 60.7% of the participants; and poor self-esteem occurred in 72.3% of pregnant women, being more frequent in the third trimester. **Conclusions:** Anxiety and low self-esteem were frequent in high-risk pregnancy. The knowledge of factors associated with its occurrence favors the development of preventive measures in prenatal care.

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INTRODUCTION

Pregnancy is a singular period in women's life, even when healthy and desired. It comprises a period when women carry a fetus during 40 weeks, which result from conception after the meeting of male and female gametes during copulation, but this phenomenon is far from being only a biological change as it seems to be, as described in the literature. Pregnancy implies a series of changes, beyond biological aspects, which include physiological, psychological and social changes (Silva *et al.*, 2015). Common sense has it that pregnancy always bring joy, though, when analyzing women's stories individually, many did not plan/desire pregnancy, which will bring even more doubts and sufferings, or even for those who planned it, the event itself is already quite dramatic, when the woman feels insecure, fears for the health of the fetus, by her insecurity in to take care of him/her and changes in her life (Tomaschewski-Barlem *et al.*, 2016; Varela, 2017). The World Health Organization states that depression and anxiety in pregnancy are a public health problem, due to their high worldwide prevalence (WHO, 2009). These insecurities and doubts may be even more relevant depending on the vital cycle in which they are, such as pregnant adolescents, deriving from large twists, especially in the changes of their social role, changing from daughters to mothers, in a moment when they already pass through biological, hormonal and social changes, which mix with pregnancy (Meireles, 2017). And they are many, according to a National Survey of Demographics and Health (PNDS) (2009), held in Brazil, pregnancies in women aged 15-19 years are around 23% in the country (Brazil, 2009).

High-risk pregnancy occurs when the woman has some problems that may endanger her own health and the baby's, such as: age over 35 years; low schooling; unfavorable environmental conditions; use and abuse of drugs; gestational diabetes; arterial hypertension; heart diseases; among others (Brazil, 2012). If added to typical hormonal changes of pregnancy, stressful events and poor performance of social roles can result in increased risk of pregnant women develop Common Mental Disorders (CMD), a term defined by Goldberg and Huxley (1992), related to symptoms such as anxiety, mental suffering, sadness, somatic concern, depression and low self-esteem (Goldbug, 1992). Such disorders may cause damage and functional disability in pregnant women, in addition to serious problems that may harm the fetus, such as prematurity, low birth weight, impaired development, poor mental health for the baby and even decreased levels of neural growth factor in placental tissue of women with depressive and anxiety symptoms (Silva *et al.*, 2017; Kaihola *et al.*, 2015). This emotional element, if investigated in high-risk pregnant women, can increase greatly, since, in addition to components of pregnancy, there is a greater difficulty of emotional adjustment, for being considered an "abnormal" pregnancy, "different from others", emerging feelings of guilt, fear, denial and high levels of anxiety (Brazil, 2012). This theme is relevant and important for public health, since the early identification and intervention in women with CMD symptoms are necessary, as well as to better understand how these symptoms develop. The objective of this study was to correlate the levels of anxiety and self-esteem in high-risk pregnant women and their respective obstetric data.

MATERIALS AND METHODS

This was a cross-sectional study, with an instrument of data descriptive-type quantitative approach. The study was carried out at the Agamenon Magalhães Maternity Hospital (HAM), situated in the III Sanitary District of the city of Recife-PE, being a reference in high-risk cases regarding Maternity. Data collection was carried out through visits in the period from April to June 2016. The study population consisted of 126 pregnant women sent to the high-risk sector of this institution. The sample was composed of 112 pregnant women, excluding: eight because they refused to participate in the study, three for leaving the institution, one for having a previous diagnosis of mental disorder and two for being under age. The sample included pregnant women aged over 18 years, met by high-risk care services of the HAM Maternity, and excluded puerperas, pregnant women with some previous mental disorder and/or with hearing disabilities who could not read. The women were approached after admission in the high-risk sector at the maternity unit of HAM, who were offered explanations about participating in the study, its risks and benefits, secrecy, as well as the possibility of quitting during the process if desired. Then, the Rosenberg Self-esteem Scale (EAR) (1965) (Rosemberg, 2015) was applied, which is a Likert-type scale widely used in the world, having been adapted in Brazil by Hutz (2000) (Hutz, 2011). A high score indicates a high self-esteem. The score can vary from 10 to 40, based on the sum of the score given to 10 sentences. A score greater than or equal to 30 corresponds to a satisfactory self-esteem, and a score lower than 30, unsatisfactory.

Then, the Beck Anxiety Inventory (BAI), or Beck Anxiety Scale (BAS), was applied, one of the most frequently used instruments to measure depressive symptoms, created by Aaron Beck, responsible for an effective cognitive therapy that treats a wide variety of mental disorders. Cunha (2001) validated the instrument in Brazil (Noble *et al.*, 2015). Although the ideal is to apply the instrument to psychiatric patients, it has been widely used in clinical practice and in researches with psychiatric patients and general population. It consists of a self-report scale proposed by Beck to discern the common symptoms of anxiety. The total score of this scale is the sum of the scores (0 to 63) with 21 items, using the following questions: "Not at all (it didn't bother me)"; "Mildly (it didn't bother me much)"; "Moderate (it wasn't pleasant at times)"; and "Severely (it bothered me a lot)". The results can be: 0 to 9 - minimum anxiety; 10 to 16 - mild anxiety; 17 to 29 - moderate anxiety; and 30 to 63 - severe anxiety. Subsequently, a questionnaire with obstetric data produced by the study authors was applied. The descriptive data analysis was performed by means of inferential analysis using Pearson's Chi-square or Fisher's Exact test, in case the Chi-square test could not be used. The margin of error used in the decision of the statistical tests was 5.0%. The program used for typing data and preparing statistical calculations was the software Statistical Package for Social Sciences (SPSS®) version 23.0, with the results presented as tables.

The development of the research complied with Resolution n. 466/12, OF THE National Health Council/Ministry of Health (NHC/MoH), which guides researches involving human beings. For this, it was submitted to and approved by Research Ethics Committee (REC) of the HAM, under CAAE n.: 53579916.2.0000.5197. The present study was preceded by the signing of the Informed Consent Form (ICF) by the interviewees. The research is a cutout of the Residency Completion Work (RCW), of the Uniprofessional Residency

Program in Obstetric Nursing from the Nursing School Nossa Senhora das Graças (FENSG)/University of Pernambuco (UPE), entitled: ANALYSIS OF THE SELF-ESTEEM AND ANXIETY LEVELS IN HIGH-RISK PREGNANT WOMEN, whose author is: Liniker Scolfild Rodrigues da Silva.

RESULTS

The sample was composed of 17 women (15.2%) aged 18-20 years, 43 (38.4%) aged between 21 and 25 years, 21 (18.8%) aged between 26 and 30 years, 11 (9.8%) aged between 31 and 35 years, followed by 20 (17.9%) women aged 36 years or more. In relation to marital status, the majority was married (35.8%), followed by those in a stable union or living with the partner (34%). Concerning schooling, 53 (47.3%) reported having incomplete or complete primary education and 59 (52.7%), secondary or higher education.

(69.4%), with complete elementary education (71.4%) and family income lower than one minimum wage (72.2%), were the ones that showed the highest levels of anxiety. Table 1 shows that most pregnant women in this study showed unsatisfactory self-esteem (72.3%) and the other 27.7%, satisfactory self-esteem. In relation to gestational age, 85.5% of those in early-term gestational age had no unsatisfactory self-esteem; among those who presented satisfactory self-esteem, 31.4% were in late preterm gestational age. Regarding the number of pregnancies, 87% of multigravidas had unsatisfactory self-esteem and were up to 2.67 more likely to having unsatisfactory self-esteem in relation to other groups. Regarding the number of deliveries, 84.0% of those who have had at least two deliveries have low self-esteem, followed by those who have had three or more deliveries (81.3%). When analyzing women who suffered an abortion, 78.1% of women who had suffered one or more abortions showed unsatisfactory

Table 1. Distribution of self-esteem evaluation according to obstetric data. Recife, Pernambuco (PE), Brazil, 2016. (n=112)

| Variable | Self-esteem | | | | Total group N % | p-value | OR (95% CI) |
|--|-----------------------|---------------------|-----|-------|--------------------------|---------------------|-------------|
| | Unsatisfactory N % | Satisfactory N % | | | | | |
| TOTAL | 81 72.3 | 31 27.7 | 112 | 100.0 | | | |
| Gestational age | | | | | p ⁽¹⁾ = 0.513 | | |
| Preterm (Early) | 42 70.0 | 18 30.0 | 60 | 100.0 | | ** | |
| Preterm (Late) | 24 68.6 | 11 31.4 | 35 | 100.0 | | ** | |
| Early term | 14 85.5 | 2 12.5 | 16 | 100.0 | | ** | |
| Term | - - | 1 100.0 | 1 | 100.0 | | | |
| Number of pregnancies | | | | | p ⁽²⁾ = 0.117 | | |
| Primigravida | 20 71.4 | 8 28.6 | 28 | 100.0 | | 1.00 | |
| Secundigravida | 16 57.1 | 12 42.9 | 28 | 100.0 | | 0.53 (0.18 a 1.62) | |
| Tertigravida | 25 75.8 | 8 24.2 | 33 | 100.0 | | 1.25 (0.40 a 3.92) | |
| Multigravida | 20 87.0 | 3 13.0 | 23 | 100.0 | | 2.67 (0.62 a 11.53) | |
| Number of deliveries | | | | | p ⁽²⁾ = 0.231 | | |
| 0 | 20 71.4 | 8 28.6 | 28 | 100.0 | | 1.00 | |
| 1 | 27 62.8 | 16 37.2 | 43 | 100.0 | | 0.68 (0.24 a 1.88) | |
| 2 | 21 84.0 | 4 16.0 | 25 | 100.0 | | 2.10 (0.55 a 8.08) | |
| 3 or more | 13 81.3 | 3 18.8 | 16 | 100.0 | | 1.73 (0.39 a 7.76) | |
| Number of abortions | | | | | p ⁽²⁾ = 0.385 | | |
| None | 56 70.0 | 24 30.0 | 80 | 100.0 | | 1.00 | |
| One or more | 25 78.1 | 7 21.9 | 32 | 100.0 | | 1.53 (0.58 a 4.02) | |
| Vaginal delivery in previous pregnancies | | | | | p ⁽²⁾ = 0.689 | | |
| Yes | 40 74.1 | 14 25.9 | 54 | 100.0 | | 1.19 (0.52 a 2.72) | |
| No | 41 70.7 | 17 29.3 | 58 | 100.0 | | 1.00 | |
| Number of vaginal deliveries | | | | | p ⁽²⁾ = 0.615 | | |
| 0 | 41 70.7 | 17 29.3 | 58 | 100.0 | | 1.00 | |
| 1 | 23 69.7 | 10 30.3 | 33 | 100.0 | | 0.95 (0.38 a 2.42) | |
| 2 or more | 17 81.0 | 4 19.0 | 21 | 100.0 | | 1.76 (0.52 a 6.01) | |
| Cesarean section | | | | | p ⁽²⁾ = 0.844 | | |
| Yes | 33 73.3 | 12 26.7 | 45 | 100.0 | | 1.09 (0.47 a 2.54) | |
| No | 48 71.6 | 19 28.4 | 67 | 100.0 | | 1.00 | |
| Number of cesarean sections | | | | | p ⁽²⁾ = 0.190 | | |
| 0 | 48 71.6 | 19 28.4 | 67 | 100.0 | | ** | |
| 1 | 21 65.6 | 11 34.4 | 32 | 100.0 | | ** | |
| 2 - 3 | 12 92.3 | 1 7.7 | 13 | 100.0 | | ** | |
| Pregnancy | | | | | p ⁽²⁾ = 0.725 | | |
| Desired / planned | 29 74.4 | 10 25.6 | 39 | 100.0 | | 1.17 (0.49 a 2.82) | |
| Undesired / unplanned | 52 71.2 | 21 28.8 | 73 | 100.0 | | 1.00 | |

Source: Created by the authors.

(**) Not calculated due to null or very low frequencies

(1) Fisher's Exact Test

(2) Pearson Chi-Square Test

In relation to family income, 18 (16%) reported having family income lower than one minimum wage, 53 (47.5%) one minimum wage, 33 (29.4%) between one and two minimum wages and 8 (7.1%), more than two minimum wages. In relation to unsatisfactory self-esteem, women aged between 26 and 30 years (81%), in a stable union (78.9%), with incomplete primary education (96%) and family income of one minimum wage (79.2%), were the ones that showed the highest indices. In relation to the presence of anxiety, women aged between 31 and 35 years (81.8%), in a stable union

self-esteem. A datum that draws attention shows that 92.3% of women who underwent 2-3 cesarean deliveries presented unsatisfactory self-esteem. Regarding women who underwent cesarean section, 73.3% had unsatisfactory self-esteem, and for those who have never undergone cesarean section, the number was also high, with 71.6% showing the same result. For those who have already undergone 2-3 cesarean sections, the number of women with self-esteem problems is 92.3%. Table 2 shows that 60.7% of the total sample shows anxiety. Regarding the number of pregnancies, 69.6% of women have anxiety and are

up to 1.98 times more likely to having unsatisfactory self-esteem in relation to other groups. In relation to the number of deliveries, 76.0% of those who had had at least two deliveries revealed anxiety, followed by those who had had three or more deliveries (68.8%). Women who had never suffered an abortion presented higher levels of anxiety (61.3%), when

esteem relates to better performance of maternal skills and better maternal-fetal interaction (Santos *et al.*, 2015; Cardillo *et al.*, 2016). In studies carried out in Brazil, in the state of Minas Gerais, 26.8% of pregnant women showed symptoms of anxiety and another conducted in the city of Bebedouro, São Paulo, found 46.7% of anxiety in pregnant women (Wechsler;

Table 2. Distribution of anxiety evaluation according to obstetric data. Recife, Pernambuco (PE), Brazil, 2016. (n=112)

| Variable | Anxiety | | | | Total group N % | p-value | OR (95% CI) |
|--|---------|-------|---------|------|--------------------|---------|--------------------------|
| | With | | Without | | | | |
| | N | % | n | % | | | |
| TOTAL | 68 | 60.7 | 44 | 39.3 | 112 | 100.0 | |
| Gestational age | | | | | | | p ⁽¹⁾ = 0.916 |
| Preterm (Early) | 37 | 61.7 | 23 | 38.3 | 60 | 100.0 | ** |
| Preterm (Late) | 20 | 57.1 | 15 | 42.9 | 35 | 100.0 | ** |
| Early term | 10 | 62.5 | 6 | 37.5 | 16 | 100.0 | ** |
| Term | 1 | 100.0 | - | - | 1 | 100.0 | |
| Number of pregnancies | | | | | | | p ⁽²⁾ = 0.654 |
| Primigravida | 15 | 53.6 | 13 | 46.4 | 28 | 100.0 | 1.00 |
| Secundigravida | 16 | 57.1 | 12 | 42.9 | 28 | 100.0 | 1.16 (0.40 a 3.32) |
| Tertigravida | 21 | 63.6 | 12 | 36.4 | 33 | 100.0 | 1.52 (0.54 a 4.24) |
| Multigravida | 16 | 69.6 | 7 | 30.4 | 23 | 100.0 | 1.98 (0.62 a 6.31) |
| Number of deliveries | | | | | | | p ⁽²⁾ = 0.219 |
| 0 | 15 | 53.6 | 13 | 46.4 | 28 | 100.0 | 1.00 |
| 1 | 23 | 53.5 | 20 | 46.5 | 43 | 100.0 | 1.00 (0.38 a 2.59) |
| 2 | 19 | 76.0 | 6 | 24.0 | 25 | 100.0 | 2.74 (0.84 a 8.94) |
| 3 or more | 11 | 68.8 | 5 | 31.3 | 16 | 100.0 | 1.91 (0.52 a 6.94) |
| Number of abortions | | | | | | | p ⁽²⁾ = 0.854 |
| None | 49 | 61.3 | 31 | 38.8 | 80 | 100.0 | 1.08 (0.47 a 2.50) |
| One or more | 19 | 59.4 | 13 | 40.6 | 32 | 100.0 | 1.00 |
| Vaginal delivery in previous pregnancies | | | | | | | p ⁽²⁾ = 0.103 |
| Yes | 37 | 68.5 | 17 | 31.5 | 54 | 100.0 | 1.90 (0.88 a 4.10) |
| No | 31 | 53.4 | 27 | 46.6 | 58 | 100.0 | 1.00 |
| Number of vaginal deliveries | | | | | | | p ⁽²⁾ = 0.258 |
| 0 | 31 | 53.4 | 27 | 46.6 | 58 | 100.0 | 1.00 |
| 1 | 23 | 69.7 | 10 | 30.3 | 33 | 100.0 | 2.00 (0.81 a 4.95) |
| 2 or more | 14 | 66.7 | 7 | 33.3 | 21 | 100.0 | 1.74 (0.61 a 4.95) |
| Cesarean section | | | | | | | p ⁽²⁾ = 0.508 |
| Yes | 29 | 64.4 | 16 | 35.6 | 45 | 100.0 | 1.30 (0.60 a 2.84) |
| No | 39 | 58.2 | 28 | 41.8 | 67 | 100.0 | 1.00 |
| Number of cesarean sections | | | | | | | p ⁽²⁾ = 0.442 |
| 0 | 39 | 58.2 | 28 | 41.8 | 67 | 100.0 | 1.00 |
| 1 | 19 | 59.4 | 13 | 40.6 | 32 | 100.0 | 1.05 (0.45 a 2.47) |
| 2 - 3 | 10 | 76.9 | 3 | 23.1 | 13 | 100.0 | 2.39 (0.60 a 9.50) |
| Pregnancy | | | | | | | p ⁽²⁾ = 0.135 |
| Desired / planned | 20 | 51.3 | 19 | 48.7 | 39 | 100.0 | 1.00 |
| Undesired / unplanned | 48 | 65.8 | 25 | 34.2 | 73 | 100.0 | 1.82 (0.83 a 4.03) |

Source: Created by the authors.

(**) Not calculated due to null frequencies

(1) Fisher's Exact Test

(2) Pearson Chi-Square Test

compared to those who had already suffered (59.4%). Women who had undergone two or more cesarean sections presented the highest rates of anxiety (76.9%) and up to 2.39 times more chances of having anxiety, when compared to those who had undergone one (59.4%) or no cesarean section (58.2%).

DISCUSSION

The sociodemographic findings among women with symptoms and/or mental disorders vary, however, this study is similar, in relation to the sample characterization, to other studies performed in Minas Gerais, Brazil, regarding age, marital status, family income and level of schooling (Silva *et al.*, 2017; Wechsler; Reis and Ribeiro, 2016). Even taking into account the presence of anxious and depressive symptoms during pregnancy, the data have great variability and there is still no consensus. In this study, 68 (60.7%) patients presented symptoms of anxiety and 81 (72.3%) had unsatisfactory self-esteem during the pregnancy, one of the highest levels among the studies found. Few studies address the issue of self-esteem in pregnant women, although studies suggest that a high self-

Reis and Ribeiro, 2016). The probable reason for the high indices of anxiety and unsatisfactory self-esteem in pregnant women in this study may be related to the fact of being high-risk pregnancies, which entails a number of uncertainties and frustrations for women, since they fear their own death, their child's death and developing greater health complications (Castro; Sampayo, 2017; Saviani-Zeoti; Petean, 2015; Kliemann; Böing; Crepaldi, 2017). Comparative study on anxiety and depression in pregnant women with normal and risk pregnancy showed higher rates of anxiety and depression in women with high-risk pregnancy, in addition to lower self-esteem (Saviani-Zeoti; Petean, 2015). In the same way, the indices of anxiety and unsatisfactory self-esteem were higher in women in early-term (37-38 weeks of gestation) and term pregnancy (39 weeks), once the delivery is closest, which increases the woman's expectations and fears, corroborated by findings in another study (Silva *et al.*, 2017). Multigravidas were the majority of those with the highest levels of anxiety and unsatisfactory self-esteem, especially those who had had two or more deliveries, regardless of being normal or cesarean section, being this finding also evidenced in national and

international studies (Dias *et al.*, 2018; Wechsler; Reis and Ribeiro, 2016). Women who wanted the pregnancy showed higher levels of lower self-esteem, but showed lower levels of anxiety. Studies show higher levels of anxiety and low self-esteem in unwanted pregnancies (Arrais; Araújo; Schiavo, 2019).

A Brazilian study showed that maternal desire in relation to pregnancy was associated with the occurrence of anxiety in pregnancy (Silva *et al.*, 2017). Studies reveal an intimate connection between low schooling and low income, and higher levels of anxiety, insecurity and stress, since the costs of the family will increase, which puts at risk the welfare of pregnant women (Silva *et al.*, 2017). In the present study, mothers with fewer years of schooling and restricted family income presented higher levels of anxiety and low self-esteem when compared to those with higher income and schooling.

Conclusion

The presence of high levels of anxiety and low self-esteem demonstrated to be a frequent mental disorder among the surveyed pregnant women, being more frequent in the third trimester of pregnancy, and its occurrence is associated with higher numbers of deliveries and pregnancies, history of abortion, desired pregnancy, low schooling and low income, highlighting that they were all were experiencing a high-risk pregnancy. Although the results obtained here are consistent, they cannot be generalized. Further studies are necessary to investigate the relationship of self-esteem especially in the period of pregnancy, as well as the factors that influence its development and maintenance among all types of pregnant women, but mainly among high-risk pregnancies. Finally, there stands out the importance of Health Services with respect to health care during prenatal care with all pregnant women, integrally, especially with those who pass through adverse situations during the gestational period, in order to take care of their mental health, since body and mind are inseparable, and pregnant women with greater presence of common mental disorders can present somatization of psychological problems as physical illnesses. Health professionals and students can develop new studies about that theme, and, based on this and other studies, assist more effectively risk pregnant women, so that they experience a pregnancy as balanced as possible, potentiating a healthier relationship between mother and son.

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