Anxiety and Worry in Pregnant Mothers Prior to Childbirth Attending Primary Health Care Clinic: Significance of Screening

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ABSTRACT

Objectives: To detect the prevalence of anxiety and fears of a group of pregnant women before childbirth and relate it with the way to end the delivery, the Apgar, the weight of children at birth and the perception of pain, among others variables, to finally assess the use of the STAI and VAS as detection instruments and/or screening of anxiety in pregnant women.

Patients and method: The design of this research was descriptive, longitudinal, analytical and prospective study carried at our primary health care centers and hospital in which the participants included in the study were women who were, in her third trimester of gestation, between October 2022 and March 2023. The collection of the data is performed at two times: during the last trimester of gestation and from 24 hours after the postpartum, during his admission to the hospital.

Results: mean age of 31.4±4.3 years, 72.4% of deliveries ended via vaginal and 27.6% by caesarean section, and 82.69% of neonates had weights in the normal range (2500- 4000gr). A statistical relationship could not be established significant finding among the Apgar values of the newly born (Apgar between 3 and 7 and Apgar greater than 7 and the anxiety levels of their mothers (Mann-Whitney test p value=0.86). It was also not possible to establish a statistically significant relationship between the weights of the neonates and the level of anxiety

Conclusion: 30.8% of the women in the study presented a high anxiety level before childbirth. However the level of anxiety prior to childbirth could not be associated with the type of delivery, the Apgar or the weight of the children significantly.

Keywords: Anxiety, Worry, Childbirth, Screening

1. INTRODUCTION

The World Health Organization (WHO) in its Declaration of Strength, dictated, the main recommendations of what maternity care should have been all over the world. Attention focused on the premise that the social, emotional and psychological factors they were fundamental and complemented an attention quality perinatal (1). From a psychological point of view, pregnancy in the woman, is considered a critical moment, since the adjustments that it requires can alter its balance. emotional and generate states of tension in her, anxiety and/or fear, emotion, the latter, present in approximately 20% of pregnancies (2). In the last years, research has appeared in relation to the effect, that the presence of these negative emotional states, they may have about the evolution of pregnancy and the development of the fetus, such as the sensation of uncontrolled and/or excessive pain of the woman during childbirth (3), the increase of the difficulties with dilation, with longer deliveries and an increased number of cesarean sections and the increase of newly born pre-term and with low birth weight among others (4,5). Several authors, have raised the possibility of using specific questionnaires for the detection of anxiety or fears before childbirth. In this sense, they have developed "the Cambridge Worry Scale (CWS)", scale which measures the concerns of women in the face of childbirth from a global perspective, and that it has been recently adapted to our environment (6,7). On the other hand, scales are used in our environment that value anxiety, not specific to the obstetric field: such as the Visual Analog Scale (VAS) and/or the State-Trait Anxiety Questionnaire from Spielberg, State-Trait Anxiety Inventory (STAI). The STAI, comprises 2 separate scales of self-assessment, that measure two independent concepts as are anxiety as a state and anxiety as a trait (8). This questionnaire was recently used in an investigation in which anxiety levels during pregnancy and/or childbirth were related to maternal and/or fetal morbidity and the way to end childbirth, among others (9). VAS allows a woman to register her opinion on the level of anxiety or nervousness that presents before childbirth. It is intuitive and easy to use by the general population (11). The objectives set out in this research were: first of all know the level of anxiety and fears of a group of pregnant women before childbirth and relate it with the way to end the delivery, the Apgar, the weight of children at birth and the

perception of pain, among others variables, to finally assess the use of the STAI and VAS as detection instruments and/or screening of anxiety in pregnant women.

2. METHODOLOGY

The design of this research was descriptive, longitudinal, analytical and prospective study carried our primary health care centers and hospital in which the participants included in the study were women who were, in her third trimester of gestation, between October 2022 and March 2023. The collection of the data is performed at two times: during the last trimester of gestation and from 24 hours after the postpartum, during his admission to the hospital.

The women filled in socio-demographic and clinical data related to their pregnancy during pregnancy and the anxiety level was measured with two instruments: the STAI state questionnaire (STAI) and an VAS and after childbirth, clinical data related to childbirth and postpartum and clinical data of the newborn (sex, Apgar and weight) were collected by a self-fulfilling ad hoc questionnaire.

With an VAS, the women valued the pain perceived during childbirth and the relief of it after the administration of treatment. Finally, they were invited to make an assessment on a list of eleven possible fears that perhaps they had or felt during their labor, inviting them a that they will be quantified according to a scale from 0 to 3 elaborated, ad hoc, from the fears that resulted more representative and which were verbalized by the women participating in a pilot study prior to this research.

Statistical analysis

The categorical variables were described by absolute frequencies (N) and percentage (%), and the quantitative non-normal using the median and percentiles 25 and 75, (P25 and P75, respectively). To determine the dependence between two categorical variables was applied the statistical chi-square test.

To determine differences between groups, a Mann-Whitney test was applied. The Bonferroni test correction was applied to the p-values when we had more than 2 groups. To determine the relationship between two non-normal quantitative variables or values the Spearman correlation coefficient was calculated and its p-value.

The significant variables in the univariate analysis were considered in the multivariate. To determine the relationship between pain, anxiety and the rest of the variables, a linear regression was applied multiple, with the forward method.

The significance level was set to a p-value (.05 and the analysis of the data was performed with the SPSSV25 software.

3. RESULTS

A total of 156 pregnant women were included, with a mean age of 31.4±4.3 years. The medical history presented by the women were poor and/or remarkable, other aspects of the social and clinical profile of the sample are summarized in (**Table 1**). In relation to the level of anxiety of pregnant women, for interpreting the results of the STAI, were obtained first the Direct Test Scores (STAI-DS), after which they were grouped, using the percentiles 33 and 66 as cut-off points, distributing the results in three levels of anxiety: low (by below the 33rd percentile), middle (between the percentiles 33 and 66) and high (above the 66th percentile). To highlight that (N:48) 30.8% of our sample had a high anxiety level before childbirth. The calculation of the Spearman coefficient (Rho) showed the existence of correlation between the 2 scales used in the measurement of anxiety before childbirth: the STAI and the VAS for anxiety (Rho:0.50; p value <.005). Aspect corroborated when performing the multiple linear regression with the FORWARD method, between the two measuring instruments; those women who scored higher in the VAS anxiety prior to childbirth had in turn higher values of STAI (B =0 .12; 95% CI =.07-.16). In relation to the clinical data obtained after childbirth, it is found that 72.4% of deliveries ended via vaginal (55.3% eutocic, 15.8% forceps and a 1.3% spatulas) and 27.6% by caesarean section. After the univariate analysis it was observed that the anxiety level of the women participating in the study (VAS anxiety scale prior to delivery), did not condition the type of delivery (Mann-Whitney test p value= 0.98). The clinical data collected from the neonate showed that 95.5% had an Apgar at 5 minutes >7, in 4.5% of the cases the Apgar was between 3 and 7 and in no case was the Apgar at 5 minutes lower than 3. A statistical relationship could not be established significant finding among the Apgar values of the newly born (Apgar between 3 and 7 and Apgar greater than 7 and the anxiety levels of their mothers (Mann-Whitney test p value=0.86). It was also not possible to establish a statistically significant relationship between the weights of the neonates and the level of anxiety 82.69%

of neonates had weights in the normal range (2500- 4000gr), although it was observed that the women cataloged at the high level were those who had a higher percentage of neonates with weights outside the range of the normality. In relation to the management of pain and its treatment, there were no differences statistically significant among the three groups of anxiety levels from the STAI (low, medium, high) and the maximum intensity perceived pain in childbirth. Analgesia was administered to 84.6% of the women in the study and in 95% of the cases the chosen one was epidural analgesia. 85.53% of women reported not having received information before childbirth about existing analgesic techniques, pain relief being a prominent aspect as very important for 93.42% of pregnant women. In relation to the assessment of the analgesic treatment the results, reflected that the women who had attended the Maternal Education courses in Primary Care (Mdn = 9; P25 = 5; P75 = 10), they rated better "how their pain had been treated" (Mann-Whitney test p-value=0.03), which in relation to those who had not attended (Mdn = 5; P25 = 0; P75 = 10); the results obtained also show us that the women who were placed in the STAI group high level of anxiety, they rated pain relief worse. In relation to the retrospective assessment of fears perceived during childbirth, a correlation was observed statistically significant between the levels of anxiety which the women presented before childbirth and the fear of pain (the women who presented older anxiety levels before childbirth reported feeling an increased fear of pain in childbirth (Rho: 0.2 p= .04) and fear that his son would come to some harm (Rho: 0.3; p= 0.007)). In turn, the women who verbalized feeling afraid of pain, scored higher on the VAS of pain in childbirth (Rho: 0.5; p< .005) and they rated worse the analgesia/treatment received for relieve it (Rho: -0.3; p=.003). In this sense it can also be appreciated that the fear to the anesthesia, the anesthesiologist and to have pain during the childbirth was somewhat more frequent in the group of women with the highest anxiety levels, even if these are not statistically significant differences. Finally, although the level of satisfaction of women after childbirth was high, when making the comparison between the three groups (low, medium and high anxiety level), it is noted that the group of women located in the STAI high level, they presented worse results as soon as to levels of satisfaction, even if these results are not statistically significant (women little or no satisfied: 3.70% low anxiety level; 4% anxiety level medium and 8.3% high anxiety level; X2 p-value: 0.39). All these findings are summarized in (**Table 2 and Table 3**).

Table 1. Socio-demographic and clinical variables collected in gestation

Variable	Categories	No.	%
Level of education	Illiterate	24	15.4
	Primary	40	25.6
	Secondary	58	37.2
	University	34	21.8
Pregnancy risk level	Low	72	46.1
	Average	36	23.1
	High	34	21.8
	Very high	14	9.0
Number of children	None	46	29.5
	One	54	34.6
	Two or more	56	35.9
Previous preterm births	None	134	85.9
	One	18	11.5
	Two or more	4	2.6
Total		156	100.0

Table 2. Relationship between anxiety level and relief of pain after administering analgesia

Variable	No.	%	Median (IQR)	P value*	P value** B-M	P value** B-A	P value** M-A
VSA maximum pain during childbirth							
STAI low	58	37.1	8 (7-10)	0.168	0.19	0.50	1.00
STAI medium	50	32.1	9 (8-10)				
STAI high	48	30.8	9 (7-10)				
VAS pain relief after analgesia							
STAI low	52	33.3	9 (5-10)	0.29	1.00	0.38	0.69
STAI medium	48	30.8	9 (3-10)				
STAI high	56	35.9	5 (2-10)				
* Kruskal-Wallis test. ** Mann-Whitney test adjusted by Bonferroni. IQR: Interquartile range							

Table 3. Fears in relation to anxiety, perception pain and relief after analgesia

Variable		Anxiety VAS	Anxiety STAI-DS	VAS pain	VAS pain relief	VAS Conforming with analgesia
Fear of pain in childbirth	Rho	0.7	0.2	0.5	-0.02	-0.3
	P value	0.4	0.04	0.001	0.8	0.003
Fear of the mother	Rho	-0.09	-0.2	0.2	0.1	-0.2
	P value	0.4	0.6	0.02	0.3	0.02
Fear of professional mistakes	Rho	-0.001	-0.2	0.09	-0.1	-0.2
	P value	0.9	0.7	0.4	0.2	0.02
Fear that her child will suffer some damage	Rho	-0.3	0.056	0.5	0.1	0.09
	P value	0.007	0.6	0.6	0.19	0.4
Fear of not controlling the situation	Rho	0.3	-0.06	0.2	-0.1	-0.2
	P value	0.7	0.5	0.7	0.3	0.04

4. DISCUSSION

The current study revealed that the prevalence of anxiety before childbirth in the studied women was 30.8% and in this sense our results coincide with those of Murillo FH et al.,(11) that in their research they found that although in the most of the women studied anxiety levels were normal, in 32.6% of the cases marked levels appeared and in 6.5% of the cases these levels were elevated; data that in turn, coincide with the review conducted by Alder J et al., which refers to a prevalence of 6.6% of important anxiety disorders during pregnancy, disorders that on the other hand are related as important predictors of postpartum depression (12). In another sense, although the literature describes that anxiety would have a negative influence on the obstetric, fetal and perinatal outcomes (13), the results obtained in our research show that women's levels of pre-pregnancy anxiety were not significantly associated with the type of childbirth, the Apgar or the weight of the children, as was published in other studies (13,14). It should be noted that these contradictory results between the different studies, there might be due to small sample size and/or weaknesses methodology. In this sense, we will comment that in the study by Hernandez-Martinez et al.(2011) it was possible to establish a statistically significant relationship between the anxiety levels, the mode of delivery and the birth weight of the children, being the anxiety-status levels of their sample,

lower than those found in our it should be noted in this sense that in that study unlike ours, the STAI questionnaire, which evaluates the anxiety levels prior to childbirth, regarding the perinatal results, was administered retrospectively, in the postpartum, aspect that could explain the lower anxiety levels of their population, with respect to ours. In our study the STAI is shown as a suitable questionnaire to measure the level of anxiety before childbirth, coinciding with the above in other works. It has also been found that the two scales used in the STAI study and the VAS anxiety scale they correlated strongly (15). On the other hand, and although no relationship could be established statistically significant in our study between the variables anxiety and pain, we can verify that indirectly the results obtained demonstrated a relationship between the level of anxiety and the of managing pain, since women with a higher anxiety level, they had a greater fear of pain, the which in turn led to a worse tolerance of the same and a worse assessment of the treatment administered for relieve it. The response to pain in childbirth is motor, vegetative and verbal expressing a behavior complex, individual and unique; the response to pain varies in every woman and depends on the systems of discrimination of the pain that she handles. When a woman faces with the pain of childbirth, she may feel anxiety and fear of the unknown, although if the woman is able to relax physically and emotionally in the pauses, between one contraction and another, if she holds a long expiring breath during contractions, if she receives a massage to relax muscle tension, if she can to move freely and if she feels protected as to face the fear, she will be calm and the messages when they arrive, they will not be alert, but calm and the physiologic reactions will be normalized and will allow the production of endorphins (16). But if the woman faces the pain of childbirth, with fear and high levels of anxiety, will hinder these mechanisms promoting muscle tension that makes it difficult to dilation, with subsequent increase in pain in the labor contractions, establishing the fear circle- tension-pain (11). The way in which fear is overcome can vary in function of its origin, but what seems to be demonstrated is, that as the environment of childbirth has become strange (full of unwritten procedures and rules) and the process of childbirth has become unknown to the woman, the anxiety has been increasing; more so in the case of the primiparous (17). In in this sense, several authors emphasize the need for psychological care in pregnancy, especially in first-time pregnancies and/or in gestation twins, as being situations, among others, in which the women have a higher risk of

experiencing worry and/or fears related to pregnancy and the birth. Also, it seems necessary to develop research aimed at putting into practice treatments to reduce anxiety, such as cognitive behavioral therapy, music therapy, the continued support of the midwife and/or mind-body interventions, according to it is recommended in a recent review, techniques, all them, based on the induction of mental relaxation of the pregnant woman, tools that seem effective for to control or prevent women's anxiety (18,19). Anxiety is not unique to the obstetric setting, it is present and constitutes, one of the most relevant problems in the surgical context, but it is important to highlight that, unlike the obstetric environment, in which there are positions for and against treatment of pain (20), in the surgical context, the presence of pain is not accepted, considering it as unnecessary and useless suffering, since it is considered that it can be controlled with the drugs and techniques currently available, considering the effectiveness of their treatment a relevant indicator of good clinical practice and quality of care. Finally comment that it seems necessary to review the prenatal education programs, as it is it is important that the professionals who accompany women, during pregnancy, work with them emotional aspects surrounding the birth, its needs, expectations and fears before childbirth, before the pain, etc... as recommended by a recent review on the subject, crossing the line of the biological and entering into the emotional sphere of the pregnant woman (21,22). Finally comment that it seems necessary to review the prenatal education programs, as it is it is important that the professionals who accompany women, during pregnancy, work with them emotional aspects surrounding the birth, its needs, expectations and fears before childbirth, before the pain, etc...

5. CONCLUSIONS

Around 30.8% of the women in the study presented a high anxiety level before childbirth. However, the level of anxiety prior to childbirth could not be associated with the type of delivery, the Apgar or the weight of the children significantly. On the other hand, if it was appreciated, from a significantly, that women with a higher level of anxiety, they presented greater fear of pain, which in turn, it led to a worse tolerance of the same and a worse assessment of the treatment administered for alleviate it, highlighting in this regard the importance of a good maternal preparation prior to childbirth, already that minimized, in general, these effects. The two scales used in the measurement of anxiety prior to delivery,

they were found to be adequate, and correlated to each other, strongly, indicating that a measure simple and specific, as it is an anxiety VAS, it would allow, in a simple way, to identify women with high levels in order to be able to offer them care aimed at reducing their anxiety. Large-scale multicenter studies are needed that allow us to demonstrate the importance of detection of fears and anxiety in pregnant women with instruments validated and appropriate to our population. Only in this way, the nurses and midwives responsible for these women, we will be able to identify them and offer them care oriented so that they know and implement different strategies for dealing with these emotions.

Implications for Clinical Practice

An adequate and systematic screening of anxiety during pregnancy, with a VAS scale, would allow, of simple way, to identify women with high risk in order to provide them with targeted care to decrease their anxiety. It would be interesting besides to develop research aimed at putting into practice treatments to reduce such anxiety, such as cognitive-behavioral therapy, music therapy, sessions educational coaching, the continued support of the midwifery and/or body-mind interventions.

Ethical Approval:

All ethical issues were approved by the author. Data collection and patients' enrollment were in accordance with Declaration of Helsinki of World Medical Association, 2013 for the ethical principles of researches involving human. Signed informed consent was obtained from each participant and data were kept confidentially.

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