How Gestational Depression Impacts on Quality of Life

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Abstract

The association between depressive symptoms and quality of life (QoL) is well established, however, little is known about the association of gestational depression and QoL. The purpose of this study is to address how GD impacts on QoL. Therefore, one hundred and eighty women in the second trimester of pregnancy were interviewed with an abbreviated version of the World Health Organization Quality of Life questionnaire and the MINI International Neuropsychiatric Interview. From this sample, 21.6% were diagnosed with depression. Sociodemographic, psychopathological data and QoL domains of the two groups were compared using Chi-square tests, Fisher's exact tests and Analyses of Variance. Correlations between sociodemographic and the QoL domains were calculated. Regression analysis was adopted to find relevant predictors of GD. The results showed that all domains of QoL were correlated with prior and current depression. Most domains correlated with previous postpartum depression. The only predictor of GD was years of education of the mother. In conclusion, prior and current depression are related to QoL and when in contact with a patient, clinicians should address not only depressive symptoms but also QoL dimensions, which include basic human needs such as life satisfaction and living conditions.

Keywords: Depression; Pregnancy; Perinatal; WHOQOL; Quality of life

Introduction

The prevalence of gestational depression (GD) is high, and it is estimated that, in developed countries, it affects between 7% and 15% of pregnant women, while in low-economic income countries, the rate reaches 15% to 25% [1,2]. Maybe even more important than the prevalence of GD are the evidences showing how GD impacts on mother, her baby and the whole family.

Gestational depression can generate cognitive distortions that affect the decision-making capacity of the mother [3]. Depressed pregnant women are also more prone to use alcohol, tobacco and other licit and illicit drugs. Furthermore, they attend fewer to prenatal care follow up and will show more frequently unhealthy eating habits, sleep disturbances and less physical activities [4]. These behaviors associated to the biological mechanisms of the depression can expose the offspring to deleterious consequences as pre-eclampsia, pre-term birth, restricted fetal growth and/or low birth weight [5]. Additionally, the physiology of the offspring of depressed mothers can be influenced by maternal hypothalamic-pituitary-adrenal (HPA) axis dysfunction, that is, increased levels of cortisol and catecholamines. These can stress the developing brain of the fetus and expose them to behavioral disturbances and psychiatric disorders later in life [6].

Besides these impacts, we know that GD can also strongly affect the quality of life of women. Health-related quality of life (HRQL) is a useful concept to measure experienced health state and the alterations, which are consequences of illnesses. It has been recognized and established as an outcome variable and health status indicator in medical and public health research [7,8]. Although some studies have shown that symptoms of depression during pregnancy significantly affect the quality of life of pregnant women [9-11] and particularly their social relations and living conditions [12,13], it remains a neglected matter of study.

This study aimed to assess the impact of gestational depression on quality of life in a sample of pregnant women in Brazil.

Material and Methods

Sample

We enrolled 180 women attending at the Obstetrics and Gynecology Ambulatory of the Federal University Hospital in Belo Horizonte, Minas Gerais, between January 2012 and December 2014. All patients were in the second trimester of pregnancy and the only exclusion criterium was illiteracy. All participants were properly oriented regarding the research protocol and signed a document consenting participation on the study. The study was conducted according to the Declaration of Helsinki [14].

Instruments

The characteristics of the sample were assessed using a basic information document especially outlined for the project.

To assess quality of life, we used the World Health Organization Quality of Life, in an abbreviated version, the WHOQOL-BREF [15]. It is a self-report questionnaire, consisting of 26 questions, which assess four different domains of quality of life: physical, psychological, social relationships and environment. It has also two questions about the judgment of the subject concerning their quality of life.

For the assessment of prior psychiatric history and current diagnosis of major depression we used the MINI-Plus, a structured interview, following DSM-IV criteria [16].

Statistical Analysis

Descriptive statistics were calculated for sociodemographic and psychopathological data. Chi-square tests and Fisher's exact tests were used to compare nominal data of the two groups. To determine differences between the groups concerning interval data, a series of

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one-way analysis of variance (ANOVA) were performed. Previously, because the groups were unbalanced, Anderson Darling *K* tests [17] were implemented for testing homogeneity. Relationships between sociodemographic variables and the domains of the WHOQOL-BREF were examined with Spearman's rank correlation coefficient. To identify relevant predictors of depression, a stepwise logistic regression was adopted. The following statistical software performed the data: SPSS, Release 18 [18]; Minitab, Release 16 [19] and Project-R, Release 3.1 [20]. In all significance tests, alpha = 0.05.

Results

Sociodemographic data and features of the sample can be seen in Table 1. The two groups showed statistically significant differences and women with GD were significantly older, showed higher rates of previous depression and postpartum depression, and less satisfaction with the marital relationship.

In relationship to the domains of QOL, non-depressed women scored significantly higher on all domains, when compared to the group of depressed women (Table 2).

In the correlation analysis, prior and actual depression correlated significantly and negatively with all domains of QOL. Postpartum depression correlated significantly and negatively with all domains, with exception of the social domain. Regression analysis yielded years of education of the mother as a predictor of GD (Table 3).

	Women with depression		Non-depressed Women		p-value
	N = 37	21,7%	*N* = 141	78,3%	
Mean age. years (SD)	30.7	(6.7)	27.7	(7.3)	0.03
Years of education	10.1	(3.1)	9.8	(2.7)	0.62
Gestational age (months)	5.2	(1.0)	5.3	(1.2)	0.80
Number of children	1.1	(1.0)	0.7	(1.0)	0.07
Socioeconomic status(%)					0.85
Class A and B	11	30.7	49	34.7	
Class C and D	23	61.5	79	56.1	
Ethnicity (%)					0.12
White	4	15.4	35	27.0	
Afrodescendant	22	71.8	75	58.8	
Asian/other	3	5.1	12	7.8	
Marital status (%)					0.11
Married/Living with partner	21	71.8	120	85.1	
Single/Divorced/Widowed	8	23.1	15	10.6	
Marital satisfaction	13	35.9	104	73.8	0.000
Religion (%)					0.29
Catholic/Spiritism/Protestant/Other	33	89.7	111	78.7	
No religion	2	5.1	11	7.8	
Prenatal care follow up	29	79.5	129	91.5	0.08
Prior depression (%)	26	71.8	53	37.6	0.001
Prior postpartum depression (%)	8	23.1	6	4.3	0.001
High-risk pregnancy (%)	26	71.8	88	62.4	0.47
Planned pregnancy (%)	11	30.8	70	49.6	0.54
Abortion ideas (%)	11	30.8	22	15.6	0.09
Abortion history (%)	13	35.9	28	19.9	0.09
Smoking during pregnancy (%)	5	12.8	9	6.4	0.31
Alcohol during pregnancy (%)	6	15.4	19	13.5	0.88

Note: *n* = number of individuals; *M* = mean; *SD* = standard deviation

Table 1: Characteristics of the sample.

	Women with Depression		Non-depressed women		F	p-value
	N =37		*N* = 141			
	(21.7%)		(78.3%)			
	M	SD	M	SD		
Physical domain	11.9	2.3	14.2ᵃ	2.8	16.8	0.000*
Psychological domain	12.2	2.8	15.0ᵃ	2.6	29.0	0.000*
Social domain	13.1	2.9	15.4ᵃ	3.0	15.0	0.000*
Environmental domain	11.8	2.3	13.3ᵃ	2.5	8.5	0.000*
Health perception	13.3	2.9	15.1ᵃ	2.7	11.3	0.000*
Overall quality of life	12.2	1.8	14.3ᵃ	2.2	23.8	0.000*

Note: *n* = number of individuals; *M* = mean; *SD* = standard deviation; a = non-depressed women > depressed women

Table 2: Comparisons between the investigated groups concerning quality of life.

Discussion

This study provides a comprehensive analysis of the association of maternal depressive symptoms and the four dimensions of WHOQOL-BREF [15]: the psychological, the social, the environmental, the physical domain as well as health perception and the overall quality of life.

In this sample, 21.7% of the women were diagnosed with depression at the second trimester of pregnancy. These results confirm previous studies [2]. Melo Jr. et al. [21] reported a prevalence of 24.3% of gestational depression in a study conducted in Brazil. In a longitudinal study conducted in Norway [22], the symptoms of depression were assessed in the first, second trimester of pregnancy and postpartum period. In the second trimester, the researchers found a prevalence of 11% of gestational depression. Despite being a much lower prevalence than the one found in the present study, it was the most prevalent in the longitudinal analysis. Many authors consider the second trimester the most vulnerable for developing major depression [22]. The prevalence difference can also be explained by the fact that, in general, studies use different instruments to assess the symptoms of depression. Furthermore, the studied population was predominantly white and had a high socioeconomic status, while our sample was mainly constituted by a fro descendants and belonged to low-income families.

When comparing socio-demographic variables, depressed women were significantly older; less satisfied with their marital relationship and had a higher number of prior postpartum depression and depression episodes. These findings are in accordance with previous studies [23,24], which also demonstrated that GD is associated with other risk factors such as anxiety, life stress, past history of depression, lack of social support, experiencing stressful life events in the previous year, lower education, smoking, single marital status, poor relationship quality [23], low age, few years of education, being single or divorced, a history of prior depression and the absence of familial support [23,24].

In the correlation analyses, all domains of quality of life correlated negatively with actual and prior depression and most domains, with exception of the social domain, correlated negatively with history of postpartum depression. These results confirm the inverse correlation between depression and quality of life [24,25]. Quality of life can be defined not only by one's subjective sense of wellbeing, but also the competence to manage many life domains and access resources and opportunities [26]. Depression is known to be a devastating disorder, which can negatively influence family relationships, friendship, and the capacity to work or study.

The term quality of life has many different meanings and it seems that all non-medical aspects of disease are subsumed under the umbrella

	Psychological domain	Social domain	Environmental domain	Health perception	Physical domain	Overall quality of life
Age	-.07	-.08	-.19*	-.16*	-.13	-.16*
Years of education	.04	-.04	.08	-.01	-.01	.02
Gestational age	.04	-.05	-.03	-.01	-.13	-.36
Socioeconomic status	-.05	-.03	.06	-.01	-.05	.84
Ethnicity	-.01	-.02	-.03	.01	-.04	-.03
Marital status	-.05	.00	-.03	-.02	-.07	-.05
Number of children	-.04	.00	-.02*	-.01	-.06	-.04*
No religiosity	-.15	-.13	-.18*	-.15	-.15*	-.01*
Actual depression	-.39***	-.31***	-.22**	-.26**	-.31***	-.36***
Prior depression	-.23**	-.18*	-.21**	-.21**	-.26**	-.26**
Prior PPD	-.20*	-.11	-.17*	-.18*	-.26	-.23**
High-risk pregnancy	-.04	-.00	-.02	-.02	-.07	-.04
Planned pregnancy	-.03	.00	-.02	-.01	-.06	-.03
Relationship satisfaction	-.19*	-.24**	-.12	-.12	-.14	-.19*
Abortion ideas	-.05	-.00	-.03	-.02	-.07	-.05
Prior abortion	-.04	-.00	-.02	-.01	-.06	-.04
Familial psychiatric history	-.15	-.15	-.16*	-.14	-.17*	-.19*
Smoking during pregnancy	-.02	-.08	.09	-.04	-.10	-.02
Alcohol during pregnancy	-.05	-.09	.07	-.09	-.12	-.05

Note: *p<0.05; **p<0.01; ***p<0.001; PPD = postpartum depression

Table 3: Spearman correlations between the characteristics of the sample and the WHOQOL domains.

term of quality of life [25]. However, Albrecht and Fitzpatrick [27] identified four uses of the quality of life concept in relation to medicine: a) as an outcome measure in clinical trials and health services research; b) for assessing the health needs of populations; c) for the planning of clinical care of individual patients, and d) for resource allocation. From this perspective, we focused to assess the health care needs of the investigated women. More specifically, we could differentiate the needs of women with gestational depression and without gestational depression.

Aigner [28] proposed the interpretation of the WHOQOL-BREF [15] from the pool of physical and psychological constructs, social and environmental, since the physical and psychological constructs reflect physical and subjective perceptions of health, and social and environmental constructs are influenced by external factors. Mautner et al. [13] conducted a study using the WHOQOL-BREF [15] during pregnancy and after delivery, and there was also a decline in overall quality of life and physical appearance, especially during pregnancy, since many patients suffered from bodily changes during this period. These findings reinforce the idea that the changes in women's quality of life during pregnancy can alter negatively their perception of pregnancy, no longer experienced as a time of joy and anticipation, but of difficulty.

Depressed patients may experience poor quality of life due to cognitive distortions in depression [3]. However, the psychological construct of the WHOQOL-BREF [15] is highly correlated (r = 0.735) with the BDI, which is sensitive to depressive symptoms [28]. Data presented in this study showed an inverse correlation between depression and the psychological domain of quality instrument WHOQOL-BREF life. This finding corroborates the literature that suggest that the cognitive distortions present in depression are sensitive to WHOQOL-BREF [15], and this additional information can be used to evaluate the clinical symptoms of depression [29].

The absence of religion was associated with lower scores of quality of life related to the physical domain, environmental domain and the overall quality of life score. Religious believes of pregnant depressed patients were not assessed in most studies investigating QoL. However,

there are studies that consider the development of religiosity a protective factor for major depression and suicide [30].

A significant number of studies consider the quality of marital relationship to be a risk factor to GD. In many cases, researchers investigate the presence of domestic violence as a risk factor for this mood disorder [22]. Jesse et al. [31] estimated that the history of abuse occurred in the last year increased the chances of women to experience depression during pregnancy. In our study, the satisfaction of pregnant women with their marital relationship was significantly related to their quality of life, specifically the psychological and social domains.

In our study, the only predictor of GD was years of education. The association between education and major depression is still controversial [24]. Some studies related GD development to lower education [32]. In this study, we found that women with higher education were more prone to have depression during the second trimester. This result could not be corroborated by any study, but it can be argued that a higher education provides a greater understanding of issues related to pregnancy, especially when pregnancy is a high-risk pregnancy. A second hypothesis is that women with higher education engage more intensely in the professional career and during pregnancy there might be a decrease in work performance, generally caused by the usual symptoms of pregnancy, especially in cases of GD.

In conclusion, changes in women's routines and especially the deterioration in aspects of quality of life elucidate the relevance of attention required in the prenatal period. Any change in behavior or mood of pregnant women needs to be taken into account, since this group of patients is more vulnerable to psychiatric disorders. The early detection of psychiatric disorders, especially depression in pregnant women can facilitate early treatment and avoid health problems not only for the mother but also for the baby and the family.

Buist et al. [33] were pioneers discussing the importance of tracking psychiatric disorders, especially depression during pregnancy. They affirmed that tracking psychiatric disorders favors an early diagnosis and therefore an adequate treatment. In Brazil, prenatal care programs are usually directed to assess the physical health of the patient and

the fetus development, and little attention is paid to the screening of psychiatric disorders.

This study has limitations. These were the first results of a longitudinal study, which is still in progress. A greater sample could increase the power of statistical analysis. Further research should be carried out to confirm these results and associate the construct quality of life with treatment results and with health care needs of populations. This would contribute to the planning of individualized health care of patients and resource allocation.

Acknowledgement

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