SHORT COMMUNICATION

Suicidal ideation during pregnancy: prevalence and associated factors among low-income women in São Paulo, Brazil

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Abstract The aim of this study was to estimate the prevalence and correlates of suicidal ideation among low-income pregnant women living in Brazil. We performed a cross-sectional analysis of 831 women surveyed during 20 to 30 weeks of pregnancy using the Self-Report Questionnaire-20. The prevalence of suicidal ideation was 6.3%. The factors associated with suicidal ideation were common mental disorders, single partner status, past psychiatric history, and smoking tobacco. All cases of suicidal ideation were associated with common mental disorders.

Keywords Suicidality · Pregnancy · Common mental disorders · Prevalence

Introduction

Self-inflicted injury is a leading cause of disability for women worldwide (WHO 2008). One precursor to these types of injuries is suicidal ideation (SI) which has a lifetime prevalence of 9.2% in the general population (Nock et al. 2008). Risk factors associated with SI include female sex, single partner status, low socioeconomic status, and the presence of a mental disorder (Nock et al. 2008).

For women, SI presents additional risks for those who are pregnant as the potential for harm extends to the unborn infant. Among pregnant women, the presence of a common mental disorder (CMD) has been shown to be one of the most predictive risk factors for suicidal thinking (Gavin et al. 2011). To date, there have been few studies examining the prevalence of SI among pregnant women in Latin America. One study investigating suicidality in pregnant Brazilian adolescents revealed the prevalence of SI to be 16% during pregnancy (Freitas and Botega 2002). However, this figure may not reflect the prevalence of SI in the general patient population seeking care in a public sector antenatal clinic.

The purpose of this study was to examine the prevalence of SI and describe factors associated with SI in a population of low-income pregnant women in Brazil. Our hypothesis was that CMDs are associated with an increased risk of suicidality in a sample of pregnant women.

Methods

Study design and setting

This is a cross-sectional study of pregnant women receiving antenatal care in primary health care units of the public sector in São Paulo. Public primary care clinics offer free antenatal care for women living in their catchment areas. There are approximately 400 public primary care clinics in São Paulo, each one offering care to up to 30,000 persons. Prenatal appointments are offered once a month for pregnant woman seeking antenatal care for the first time.

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Sample and procedures

A detailed description of the study sample has been described elsewhere (Faisal-Cury et al. 2009). In brief, eligible participants were low-income pregnant women, aged 16 years or more, between the 20th and 30th weeks of a singleton pregnancy, who attended antenatal care appointments in the ten public primary care clinics of the chosen administrative districts, between May and September 2005.

Eligible women were invited to participate in the study. Once they agreed to participate and signed a consent form, a face-to-face interview was conducted in a private room. Pregnant women with a history of psychosis were excluded from the study. A total of 868 eligible pregnant women were identified in the primary care clinics during the period studied. Thirty-three women refused to participate, and four were excluded because they were expected to deliver in hospitals in other geographical areas. A total of 831 (95.7% of those eligible) pregnant women were included in the analysis. All procedures have been approved by the ethics committees of the University Hospital and of the Health Secretariat of the city of São Paulo.

Measurements

A detailed structured questionnaire was used to elicit information on sociodemographic characteristics of participants, including age, place of birth, marital status, ethnicity, years of education, religiosity, family income, and social support ("Do you have friends in the community?"). Questions were also asked about planning of current pregnancy, complications during the current pregnancy, history of previous psychiatric treatment, and use of tobacco.

The presence of antenatal CMD was measured with the Self-Report Questionnaire-20 (SRQ-20). The questions used to identify CMDs took into account the overlapping symptomology of different mood disorders by clustering depressive, anxiety, and somatic symptoms and detect the presence of a clinically relevant psychiatric disorder. The cutoff point of the SRQ-20 for the present study was set at 7/8. The SRQ-20 has been validated in primary care in Brazil, with 85% sensitivity and 80% specificity for the detection of CMDs (Mari and Williams 1986). Suicidal ideation was also assessed using the SRQ-20 based on the following item: "Have you had thoughts about ending your life in the past 30 days?" Response options included "no" and "yes."

Statistical analysis

The prevalence of suicidal ideation in the antenatal period was estimated with its 95% confidence interval (95% CI).

Logistic regression was used to estimate the degree of association between variables of interest and the risk for SI. The statistical analysis was performed using STATA version 11.

Results

Table 1 shows the sociodemographic and clinical information for the sample, the prevalence for SI with odds ratios (OR), and fully adjusted OR for SI. The mean age of the participants was 25 years (±6.0). Most participants were born outside São Paulo (54%), married or living with a partner (75%), and had completed 8 years of formal education (51%). Participants reported their skin color/race as white (45%), mixed/other (40%), and black (15%).

The prevalence of antenatal SI for the entire sample was 6.3%. Approximately one third (32.6%) scored at or above the cutoff point on the SRQ-20 indicating a high likelihood of having a CMD. Among those who reported having suicidal ideation, 100% reported comorbid CMD. In the fully adjusted model, statistically significant associations were found for the following: living alone/being single (OR=4.57, 95% CI 2.40–8.72), a history of psychiatric treatment (OR=2.70, 95% CI 1.31–5.55), and smoking (OR=2.82, 1.45–5.52).

Discussion

Our study showed that the prevalence of SI was 6.3% in a sample of low-income pregnant women receiving prenatal care in public sector clinics. Although the prevalence of SI in our study was higher than the 2.7% found in a recent study of a comparable clinic sample of antenatal women in the USA (Gavin et al. 2011), this may be explained by the variation in length of symptoms in the psychometric instruments used in each study (30-day prevalence vs 14-day prevalence, respectively). Another recent study has found the period prevalence of suicidal ideation in antenatal women to be 6.9% and 12% as measured by the MOODS-SR and EPDS (respectively); however, it is difficult to compare prevalence rates between our study and this study as the samples are quite different (this other study examines SI among high-income women) (Mauri et al. 2011).

The prevalence rate for SI in our study was much lower than the 16.7% found in a sample of pregnant Brazilian adolescents (Freitas and Botega 2002). The large difference between the prevalence rates of SI in our study and the adolescent study may be partially explained by patient characteristic differences. Previous studies have shown that adolescent pregnancies are associated with higher rates of suicidality than other age groups (Appleby

Table 1 Characteristics of the sample and estimated prevalence of and risk (odds ratio) for SI

Characteristics	Total (n=831)		Prevalence of SI (n=52)		Unadjusted		Adjusted	
	n	%	n	%	OR	95% CI	OR	95%
Age categories								
16–19	168	20	15	8.9	1		1	
20–29	464	56	28	6.0	0.66	0.33–1.36	0.62	0.31–1.27
30–44	199	24	9	4.5	0.48	0.18–1.22	0.39	0.15–1.07
Place of birth								
São Paulo	383	46	25	6.5	1		1	
Other	448	54	27	6.0	0.92	0.50–1.68	0.70	0.35–1.37
Marital status								
Married/lives with partner	625	75	23	3.7	1		1	
Single/not living with partner	206	25	29	14.1	4.29	2.33–7.96	4.57	2.40–8.72
Skin color/race								
White	377	45	23	6.1	1		1	
Black	124	15	12	9.7	1.64	0.72–3.58	1.58	0.70–3.56
Mixed/other	330	40	17	5.1	0.84	0.41–1.67	0.81	0.40–1.64
Education (years)								
0-8	412	50	29	7.0	1		1	
9 or more	419	50	23	5.5	0.77	0.42–1.40	0.85	0.45–1.63
Monthly family income (US$)[a]								
0–350	338	41	28	8.3	1		1	
351–705	306	37	15	4.9	0.57	0.28–1.13	0.72	0.36–1.42
706 or more	187	22	9	4.8	0.56	0.23–1.26	0.51	0.22–1.17
Religious								
No	270	32	16	5.9	1		1	
Yes	561	68	36	6.4	1.09	0.58–2.14	1.52	0.78–2.95
Has friends in the community								
No	139	17	11	7.9	1		1	
Yes	692	83	41	5.9	0.73	0.36–1.63	0.83	0.39–1.78
Planned pregnancy (current)								
No	565	68	41	7.3	1		1	
Yes	266	32	11	4.1	0.55	0.25–1.12	0.96	0.45–2.02
History of previous psychiatric treatment								
No	718	86	38	5.3	1		1	
Yes	113	14	14	12.4	2.53	1.22–4.98	2.70	1.31–5.55
Previous miscarriage								
No	676	81	39	5.8	1		1	
Yes	155	19	13	8.4	1.50	0.71–2.95	1.64	0.77–3.49
Complications during current pregnancy								
No	724	87	44	6.1	1		1	
Yes	107	13	8	7.5	1.25	0.49–2.78	1.49	0.65–3.45
Smoking								
No	695	84	33	4.7	1		1	
Yes	136	16	19	1.4	3.26	1.69–6.12	2.82	1.45–5.52
Common mental disorder[b]								
No	561	68	0	0	1	–	1	–
Yes	270	32	52	19.2	–	–	–	–

OR odds ratio, CI confidence interval

[a]Based on 2005 conversion rates between Brazilian real and US dollar

[b]Self-Report Questionnaire-20

1991). Pregnancy during adolescence in general is more likely to be associated with multiple added hardships and psychosocial stressors. Moreover, this particular adolescent sample reported high rates of violence, which may contribute to higher rates of psychiatric disorders and suicidal thinking (Asad et al. 2010).

Previous studies have shown that after controlling for other factors such as psychiatric illness, being single during pregnancy or an unplanned pregnancy have both been found to be independently associated with SI during pregnancy (Newport et al. 2007; Ishida et al. 2010). Being unmarried while pregnant may be an indicator of low social support during a particularly stressful life period.

Smoking status and a history of psychiatric treatment were found to be associated with SI. These two clinical characteristics are likely associated with the severity of psychiatric illness. As in previous studies examining comorbidities associated with suicidality, CMD was shown to be highly comorbid with SI (Newport et al. 2007). The finding that the presence of a CMD was the strongest predictor of SI is consistent with what is found in the literature (Nock et al. 2008).

Considering the high prevalence of SI in this population of low-income pregnant women, it may be worthwhile to address this issue in the presence of CMD. One approach to treating SI in this population would be to enhance screening and quality of mental health treatment for the underlying CMD. Many studies have already demonstrated the effectiveness of integrated mental care; however, most of these studies have been carried out in high-income countries (Gilbody et al. 2006). Recent studies have shown the effectiveness of integrated mental health care (compared with usual care) for the treatment of CMD in primary care settings in low-and middle-income countries (Patel et al. 2011). Such studies take into consideration the limited resources of low-income settings by utilizing lay workers. However, further studies are still needed to examine the effectiveness of psychological treatments of CMDs in this population.

Strength and limitations

The strengths include the large sample size, the large retention rate (95.7%), and the use of a validated questionnaire. This study has several limitations. First, the results of this study may not be generalizable to Brazilian women of higher socioeconomic status who receive care in private settings. Second, in a cross-sectional study, inferences cannot be drawn about causation. Third, since our measure of CMD also includes the suicide item, there may be an overestimation of the relationship between suicidal ideation and CMD. Lastly, the suicide item of the SRQ-20 does not ask questions on the frequency, intensity, or duration of SI, thus limiting our ability to assess the severity of suicidality.

Conclusion

In this sample of low-income pregnant women living in Brazil, the prevalence of suicidal ideation was not uncommon. The presence of a common mental disorder was found to be the strongest predictor of suicidal ideation in this population.

Conflict of interest Drs. Huang, Chan, Faisal-Cury, and Menezes and Ms. Tabb have no potential conflicts of interest to disclose. Dr. Katon has received honorariums for lectures from Eli Lilly, Forest, and Pfizer.

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