



Research report

Food insecurity and its association with co-occurring postnatal depression, hazardous drinking, and suicidality among women in peri-urban South Africa



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ABSTRACT

Background: Although the public health impacts of food insecurity and depression on both maternal and child health are extensive, no studies have investigated the associations between food insecurity and postnatal depression or suicidality.

Methods: We interviewed 249 women three months after they had given birth and assessed food insecurity, postnatal depression symptom severity, suicide risk, and hazardous drinking. Multivariable Poisson regression models with robust standard errors were used to estimate the impact of food insecurity on psychosocial outcomes.

Results: Food insecurity, probable depression, and hazardous drinking were highly prevalent and co-occurring. More than half of the women (149 [59.8%]) were severely food insecure, 79 (31.7%) women met screening criteria for probable depression, and 39 (15.7%) women met screening criteria for hazardous drinking. Nineteen (7.6%) women had significant suicidality, of whom 7 (2.8%) were classified as high risk. Each additional point on the food insecurity scale was associated with increased risks of probable depression (adjusted risk ratio [ARR], 1.05; 95% CI, 1.02–1.07), hazardous drinking (ARR, 1.04; 95% CI, 1.00–1.09), and suicidality (ARR, 1.12; 95% CI, 1.02–1.23). Evaluated at the means of the covariates, these estimated associations were large in magnitude.

Limitations: The study is limited by lack of data on formal DSM-IV diagnoses of major depressive disorder, potential sample selection bias, and inability to assess the causal impact of food insecurity.

Conclusion: Food insecurity is strongly associated with postnatal depression, hazardous drinking, and suicidality. Programmes promoting food security for new may enhance overall psychological well-being in addition to improving nutritional status.

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1. Introduction

Depressive and alcohol use disorders are major contributors to global disease burden, and depression is the leading cause of disease burden worldwide among women of reproductive age (Mathers et al., 2008; Tomlinson et al., 2007). Both are significant

risk factors for suicide (Nock et al., 2009, 2010). All of these contribute heavily to the disease burden in South Africa (Bradshaw et al., 2003).

Women are particularly vulnerable to depression during the postnatal period (Gavin et al., 2005), which in turn can have adverse impacts on their children's health and development (Tsai and Tomlinson, 2012). The prevalence of postnatal depression is greater in low- and middle-income countries compared to high-income countries (Gavin et al., 2005; Halbreich and Karkun, 2006; Sawyer et al., 2010), and the prevalence in socioeconomically deprived settings within sub-Saharan Africa may be even greater. Several studies of antenatal and postnatal depression among

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women in Khayelitsha, a peri-urban settlement near Cape Town, have shown prevalence rates ranging from 16–47% (Ramchandani et al., 2009; Rochat et al., 2011; Tsai and Tomlinson, 2012).

Food insecurity, defined as having uncertain or limited availability of nutritionally adequate food or as being unable to procure food in socially acceptable ways (Anderson, 1990), is an emerging risk factor for poor emotional wellbeing (Lund et al., 2010; Sorsdahl et al., 2011; Tsai et al., 2012a; Weaver and Hadley, 2009) that demonstrates gendered patterning in both low- and high-income settings (Carter et al., 2011; Tsai et al., 2012a). Food insecurity has a substantial but potentially modifiable public mental health impact given its high prevalence in low- and middle-income countries. In South Africa, for example, between one-quarter and one-third of households have been estimated to be food insecure (Sorsdahl et al., 2011).

Although the public health impacts of food insecurity and depression on both maternal and child health are extensive, no studies have investigated the association between food insecurity and postnatal depression or suicidality. Several studies have examined the association between socioeconomic disadvantage and poor emotional wellbeing (Carter et al., 2011; Lund et al., 2010; Tsai et al., 2012a), including postnatal depression (Fisher et al., 2012; Ramchandani et al., 2009). However, food insecurity is a more specific and policy-relevant marker of uncertainty and unpredictability and is, in many low- and middle-income countries, the predominant form of uncertainty experienced in daily living (Pike and Patil, 2006). To address these gaps in the literature, we conducted this study to estimate the associations between food insecurity, postnatal depression, hazardous drinking, and suicidality among postnatal women living in a peri-urban settlement near Cape Town, South Africa.

2. Methods

2.1. Study population, design and data collection

South Africa is a middle-income country in which a growing majority of the population is urbanized. Khayelitsha, a socio-economically deprived urban area on the outskirts of Cape Town, is home to a primarily Xhosa-speaking, black African population. Approximately one-half of residents are unemployed. Most live in informal housing, and nearly three-quarters of households have a monthly household income below subsistence level. Among all Cape Town sub-districts, Khayelitsha had the highest age-standardized mortality rates in 2006, with the leading causes being HIV/AIDS, homicide, and tuberculosis (Groenewald et al., 2010).

Study participants were recruited from among those newly invited to participate in an ongoing child health and nutrition programme delivered by Philani, a community-based non-governmental organisation in the area (le Roux et al., 2010). Outreach workers identify women at various stages of pregnancy and invite them to take part in the programme which is aimed at improving maternal and child health and nutrition outcomes through home-based intervention. Women were invited to participate in the perinatal depression screening study by Philani outreach workers at the same time that they were invited to take part in the maternal and child health and nutrition programme. All participants provided written informed consent. Three months after birth, trained fieldworkers (hired independently of Philani) visited participants at their homes to administer the study survey using mobile phones (Tomlinson et al., 2009). Ethical approval for all study procedures was granted by the Health Research Ethics Committee, Faculty of Health Sciences, Stellenbosch University; the Committee on Human Research, University of California at San

Francisco; and the Office of Human Research Administration, Harvard School of Public Health.

2.2. Measures

We used the Xhosa version of the 10-item Edinburgh Postnatal Depression Scale (EPDS) to screen for postnatal depression (Cox et al., 1987). The EPDS scale items enquire about depressive symptoms such as tearfulness, anhedonia, and motivation with a seven-day recall period. Responses range from 0 to 3 based on symptom severity, and the maximum possible score is 30. Among Xhosa-speaking women, the EPDS has been demonstrated to have a coherent internal structure (De Bruin et al., 2004), and it has been shown to have a high sensitivity for detecting postnatal depression in numerous settings worldwide (Eberhard-Gran et al., 2001; Gibson et al., 2009), including South Africa (Rochat et al., in press). Following previous studies in this population, we employed a cutoff score of ≥ 13 to indicate probable depression (Honikman et al., 2012; Rochat et al., 2006).

Suicide risk was assessed using the suicidality module of the Mini International Neuropsychiatric Interview (MINI), version 5.0.0 (Sheehan et al., 1998), a structured interview that has been deployed in numerous studies of psychiatric morbidity in South Africa (Myer et al., 2008; Olley et al., 2005). The suicidality module consists of 10 questions about suicidal ideation, planning, and attempts over the past month, and one question about lifetime suicide attempts. The recommended algorithm was applied to the MINI scores to identify women at high risk for suicide. Participants indicating any level of risk for suicide were immediately referred to a social worker.

To screen for hazardous drinking, we used the TWEAK screening instrument, which derives its name from the five items of inquiry ([t]olerance, [w]orry expressed by others, consumption of an “[e] ye-opener,” [a]mnestic episodes due to alcohol-induced blackouts, and need to [k]ut down on drinking) (Russell, 1994; Russell et al., 1994). In contrast to other screening instruments that were originally developed on samples of men and that rely primarily on direct questioning to assess risk, the TWEAK was developed specifically to assess hazardous drinking during pregnancy and relies on indirect questioning. A TWEAK score of two or greater was used as the cutoff for hazardous drinking.

Food insecurity was measured using the Household Food Insecurity Access Scale (HFIAS), a nine-item experience-based measure of food insecurity that captures three domains of food insecurity experience: anxiety and uncertainty about supply, insufficient quality and insufficient intake and its physical consequences (Swindale and Bilinsky, 2006). The HFIAS has been shown to represent apparently universal domains of the food insecurity access experience and to distinguish between food secure and food insecure households across different cultural contexts. Consistent with best practices, the scale was adapted to include culturally specific probes and interviewer clarifications (Swindale and Bilinsky, 2006).

2.3. Statistical analysis

All analyses were conducted with the use of the Stata statistical software package (version 12.0, StataCorp LP, College Station, Tex.). We estimated the Pearson's correlation coefficients between the HFIAS, EPDS, MINI, and TWEAK scores on the continuous scale (Cox, 2008). To estimate the association between food insecurity and probable depression, high-risk suicidality, and hazardous drinking, we fit three separate Poisson regression models to the data with the continuous food insecurity score as the primary exposure of interest. Robust estimates of variance were employed, thereby enabling the interpretation of the exponentiated

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