Journal of Affective Disorders 229 (2018) 152–158

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research paper

The prevalence and correlates of self-harm ideation trajectories in Australian women from pregnancy to 4-years postpartum

Rebecca Giallo[a,b,*], Pamela Pilkington[a], Rohan Borschmann[c,d,e,h], Monique Seymour[a], Melissa Dunning[a], Stephanie Brown[a,b,f,g]

[a] Healthy Mothers Healthy Families Research Group, Murdoch Childrens Research Institute, Parkville, VIC, Australia
[b] Department of Paediatrics, The University of Melbourne, Parkville, VIC, Australia
[c] Centre for Adolescent Health, Murdoch Childrens Research Institute, Parkville, VIC, Australia
[d] Centre for Mental Health, Melbourne School of Population and Global Health, The University of Melbourne, Parkville, VIC, Australia
[e] Health Service and Population Research Department; Institute of Psychiatry, Psychology and Neuroscience, King's College London, UK
[f] Department of General Practice and Primary Health Care Academic Centre, The University of Melbourne, Parkville, VIC, Australia
[g] South Australian Health and Medical Research Institute, Adelaide, SA, Australia
[h] Department of Psychiatry, The University of Melbourne, Australia

ARTICLE INFO

Keywords:
Prospective cohort study
Pregnancy
Postnatal
Self-harm ideation

ABSTRACT

Objectives: Women in the perinatal period are at increased risk of experiencing self-harm ideation. The current study longitudinally examines the prevalence, trajectories, and correlates of self-harm ideation in a population-based sample of Australian women from pregnancy through to the early years of parenting.

Methods: Drawing on data from 1507 women participating in a prospective pregnancy cohort study, data were collected during pregnancy, at 3-, 6-, 12-, and 18-months postpartum, and 4-years postpartum. Longitudinal Latent Class Analysis was conducted to identify groups of women based on their responses to thoughts of self-harm at each time-point. Logistic regression analysis was used to identify factors associated with group membership.

Results: Approximately 4–5% of women reported experiencing self-harm ideation at each time-point from pregnancy to 4-years postpartum. Cross-sectional analyses revealed that self-harm ideation was most frequently endorsed in the first 12-months postpartum (4.6%), and approximately 15% of women reported self-harm ideation at least once during the study period. Longitudinally, approximately 7% of women had an enduring pattern of self-harm ideation from pregnancy to 4-years postpartum. Women who had experienced a range of preconception and current social health issues and disadvantage were at increased risk of self-harm ideation over time.

Limitations: Limitations included use of brief measures, along with an underrepresentation of participants with particular socio-demographic characteristics.

Conclusions: A proportion of women are at increased risk of experiencing self-harm ideation during the perinatal period and in the early years of parenting, underscoring the need for early identification during pregnancy and early postpartum to facilitate timely early intervention.

1. Introduction

There is increasing evidence that women in the perinatal period (conception to 12 months postpartum) are more likely to endorse self-harm and/or suicidal ideation than women in the general population (Gelaye et al., 2016). Self-harm ideation refers specifically to thoughts about intentionally harming oneself, with or without the intent of dying (Pope et al., 2013), whilst suicidal ideation refers to specific thoughts and images of, as well as preparations for, ending one's life. Both can have serious implications for women and children including the impact of high stress and cortisol levels in utero on fetal development (Evans et al., 2001), increased risk of low birthweight (Taylor et al., 2016), perinatal loss (Kurinczuk et al., 2014), and less positive affect among infants (Paris et al., 2009). Given these potential adverse outcomes, identifying women reporting self-harm and suicidal ideation warrants attention. The current paper focuses specifically on *self-harm ideation* as a significant body of research has shown that it is one of the strongest predictors of death due to suicide in the general population (Cooper

* Correspondence to: Murdoch Childrens Research Institute, Royal Children's Hospital, 50 Flemington Rd, Parkville, VIC 3052, Australia.
E-mail address: rebecca.giallo@mcri.edu.au (R. Giallo).

https://doi.org/10.1016/j.jad.2017.12.064
Received 29 June 2017; Received in revised form 2 October 2017; Accepted 31 December 2017
Available online 02 January 2018
0165-0327/

et al., 2005; Hawton et al., 2003; Owens et al., 2002; Plener et al., 2015). Self-harm ideation is a key target for maternal suicide and self-harm prevention efforts.

In our review of the literature, we draw upon research into the prevalence and correlates of both self-harm and suicidal ideation in the perinatal period. This is in part due to the lack of research into self-harm ideation specifically, as well as how the terms have been used interchangeably in the literature despite being very distinct sets of thoughts. A recent systematic review of 57 studies identified that prevalence estimates for maternal suicidal ideation during pregnancy vary widely between 3% and 33% (Gelaye et al., 2016). The considerable variability is likely due to differences in the definitions and assessment measures of suicidal and self-harm ideation used, the timing of assessments, and variation in sample characteristics and study designs.

Studies conducted with clinical samples have reported the highest estimates of self-harm and suicidal ideation. For instance, in a convenience sample of 147 pregnant women with major depression or bipolar disorder in Canada, 17% and 6% reported self-harm and suicidal ideation, respectively (Pope et al., 2013). In another study of 383 pregnant women attending a US clinic specialising in the treatment of perinatal neuropsychiatric illnesses, 33% endorsed suicidal ideation on the Beck Depression Inventory or the Hamilton Depression Rating Scale (Newport et al., 2007). More recently, in a larger sample of 628 women with depression at 4–6 weeks postpartum recruited from a US obstetrics hospital, 21% endorsed self-harm ideation on item 10 ("The thought of harming myself has occurred to me") of the Edinburgh Postnatal Depression Scale (EPDS; Sit et al., 2015). Although these estimates have clinical utility and indicate considerable psychiatric comorbidity, it is important to examine the prevalence of self-harm ideation among both psychiatric and non-psychiatric populations as thoughts of self-harm can also be experienced in the absence of serious mental health problems (Toprak et al., 2011). Furthermore, not all women experiencing mental health problems disclose symptoms or seek help given significant stigma associated with mental illness.

Estimates from population-based samples are considerably lower than those based on clinical samples, ranging from 2% to 7% (i.e., Bodnar-Deren et al., 2016; Kim et al., 2015; Mauri et al., 2012). In a study of 1073 mothers attending a New York City hospital, 2% reported suicidal ideation on the EPDS and the Patient Health Questionnaire in the first 6 months postpartum (Bodnar-Deren et al., 2016). Similar estimates were reported in a study of 13,724 women attending two US hospitals at 24–28 weeks gestation on the EPDS (3.8%) and 6 weeks postpartum (3.4%) (Kim et al., 2015). Higher estimates have been reported in an Italian study of 1066 women during pregnancy (6.9%) and postpartum (4.3%) (Mauri et al., 2012). Whilst these studies highlight that a small proportion of women report self-harm ideation, no population-based studies have reported on the extent to which women in Australia report self-harm ideation at multiple time points from pregnancy through to the early years of parenting. In contrast, data reported in this paper come from a prospective study that involved frequent follow-up at 3, 6 and 12 months postpartum and at 4 years. Hence, providing more robust evidence regarding period prevalence, especially for the first 12 months postpartum.

In addition to identifying the extent to which women report self-harm ideation, an improved understanding of the risk factors for different patterns of self-harm ideation over time is warranted. This may help facilitate timely intervention and appropriate referral pathways. In their recent review of 57 studies into suicidal ideation among women during pregnancy, Gelaye et al. (2016) identified several key risk factors including comorbid psychiatric and substance use disorders, intimate partner violence, low educational attainment (i.e., high school or less), childhood physical or sexual abuse, low social support, unplanned pregnancy, being from a non-English speaking background, and multiparity. In another review of 129 studies into suicidal ideation during pregnancy and the postpartum period, Orsolini et al. (2016), risk factors identified included younger maternal age, having a past history of suicidal attempt or ideation, experiencing social or racial discrimination, living in a rural area, crowded or inadequate housing, and prior exposure to disaster, conflict or war. Whilst these risk factors reflect social disadvantage and trauma, the evidence generated to date primarily comes from small clinical samples, and is based on retrospective and cross-sectional studies.

1.1. The current study

To address the methodological limitations of previous research, and to improve our understanding of the risk factors for *self-harm ideation* specifically, data were drawn from an Australian prospective pregnancy cohort of over 1500 first-time mothers and their children from pregnancy to 4-years postpartum. *Self-harm ideation* is defined in this study as thoughts about intentionally harming oneself, with or without the intent of dying (Pope et al., 2013). The aims of this study were to: (1) investigate the extent to which women report self-harm ideation from pregnancy to 4-years postpartum; (2) identify distinct groups of women defined by their trajectories of self-harm ideation across six time-points from early pregnancy to 4-years postpartum; and (3) identify preconception and early postnatal factors associated with women's trajectories of self-harm ideation.

2. Methods

2.1. Study design and sample

Data were drawn from the Maternal Health Study, a prospective pregnancy cohort study of 1507 nulliparous women in Australia. Detailed information about the study design, sampling and field methods are published in the study protocol (Brown et al., 2006), and ethics approval was granted from the ethics committees of participating hospitals, La Trobe University, and the Royal Children's Hospital, Melbourne. Briefly, women registered to give birth at six public hospitals in Melbourne, Australia were recruited between 1 April 2003 and 31 December 2005. Eligibility criteria for participation included: (a) pregnant with an estimated gestation of < 24 weeks; (b) nulliparous; (c) sufficient fluency in English to complete written questionnaires and telephone interviews; and (d) aged 18 years or older.

Approximately 6000 invitations to participate were distributed to women during clinic visits, antenatal education classes, and mailed to women at their home address. It is not possible to determine precisely how many: (a) women received more than one invitation; (b) ineligible women received an invitation (e.g. miscarriage after booking, not nulliparous); or (c) invitations were incorrectly addressed. A total of 1507 women met the eligibility criteria and returned a baseline questionnaire. Assuming that 80–90% of invitations reached eligible women, we conservatively estimate that the final response rate was approximately 28–31%.

Women completed questionnaires in early pregnancy (10–24 weeks' gestation), at 3-, 6-, 12-, and 18-months postpartum, and 4-years postpartum. Retention rates at the follow up time points range from 95% (late pregnancy) to 83% of the 1354 women who consented to the extended follow-up at four years postpartum. Selective attrition was observed between 6-months and 4-years, whereby women who did not complete the 4-year follow-up were more likely to be younger, born overseas and more likely to report depressive symptoms in the first year following birth.

3. Measures

3.1. Self-harm ideation

Self-harm ideation was assessed during pregnancy and at 3-, 6-, 12- and 18-months, and 4-years postpartum using a single item from the Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987). The