



## Research paper

# Preconception personality disorder and antenatal maternal mental health: A population-based cohort study



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## ARTICLE INFO

## Keywords:

Maternal health

Mental disorders

Personality disorders

Epidemiology

## ABSTRACT

**Background:** Prior anxiety and depression have been identified as risk factors for maternal perinatal mental health problems, but other preconception mental disorders have not been prospectively examined. This study investigated prospectively whether women with preconception personality disorder have increased rates of antenatal anxiety and/or depressive symptoms.

**Methods:** 244 women in a population cohort were assessed for personality disorder at age 24 using the Standardised Assessment of Personality. Five to twelve years later, women were screened with the Clinical Interview Schedule, Revised Anxiety Subscale and the Edinburgh Postnatal Depression Scale during the third trimester of 328 pregnancies.

**Results:** Preconception personality disorder was associated with a three-fold increase in the odds of antenatal anxiety symptoms, which remained with adjustment for preconception background factors and preconception common mental disorder (adjusted OR 2.84, 95% CI 1.31–6.15). Preconception personality disorder was associated with doubled odds of antenatal depressive symptoms, however this was attenuated with adjustment for preconception background factors and preconception common mental disorder (adjusted OR 1.98, 95% CI 0.81–4.81).

**Limitations:** Our findings are restricted to pregnant women aged 29–35 years. Anxiety and depression may have been under-identified because they were assessed at a single antenatal time point. Residual confounding of the associations by preconception common mental disorder at other time points may have occurred.

**Conclusions:** Women with personality disorder are at heightened risk of anxiety symptoms in pregnancy, over and above risks associated with prior common mental disorder. This raises a possibility that pregnancy brings particular emotional challenges for women with personality disorders.

## 1. Introduction

Perinatal mental disorders are the commonest complication of childbearing and associated with a wide range of adverse offspring outcomes (Howard et al., 2014). The most frequent mental health problems seen antenatally are anxiety and depression – approximately one in six pregnant women have anxiety symptoms (Fairbrother et al.,

2016; Grant et al., 2008) and one in ten have depressive symptoms (Milgrom et al., 2008). These symptoms affect maternal quality of life (Bauer et al., 2016; Highet et al., 2014), and have the potential to compromise maternal caregiving and maternal-infant bonding (Stewart, 2011), with developmental consequences for offspring (Goodman et al., 2011; Kingston et al., 2012). These may include cognitive delays by middle childhood (Buss et al., 2010; Laplante et al.,

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2008), and behavioural and emotional difficulties through to adolescence (Betts et al., 2014; O'Donnell et al., 2014; Van den Bergh et al., 2008). Yet despite widespread acknowledgement of the significance of antenatal maternal depression and anxiety, many episodes are under-identified and under-treated (Andersson et al., 2003; Woolhouse et al., 2009). There is strong case for early recognition and prevention. Ideally this would occur *before* pregnancy. However, knowledge about pre-conception risk factors for maternal anxiety and depression is scant and largely based on retrospective data (Hardt and Rutter, 2004; Moffitt et al., 2010).

Of the psychiatric preconception risk factors explored to date (Biaggi et al., 2016; Martini et al., 2015; Micali et al., 2011), prior history of anxiety and depression are the only factors that have been rigorously investigated prospectively (Dietz et al., 2007; Patton et al., 2015). One potential vulnerability factor for future anxiety and depressive symptoms is a preconception personality disorder. Personality disorders are pervasive and problematic patterns of relating to the self and others that cause marked distress and impairment (American Psychiatric Association, 2000). They are associated with functional impairments that can persist even when diagnostic thresholds are no longer met (Skodol et al., 2005) and are linked to premature mortality (Fok et al., 2012). Rates of comorbid anxiety (Friborg et al., 2013) and depression (Friborg et al., 2014) are high in personality disorder, and comorbid personality disorder predicts poorer outcomes for these disorders (Ansell et al., 2011; Newton-Howes et al., 2014). Furthermore, our group has recently shown that the presence of personality disorder in young adulthood independently predicts future anxiety and depression over a decade later (Moran et al., 2016). Rates of personality disorder are highest among younger adults (Balsis et al., 2007; Samuels et al., 2002) rendering personality disorder a particularly important preconception risk factor to explore for future mental health problems in mothers.

### 1.1. Aims of the study

Using prospective data from an Australian intergenerational cohort study of community-dwelling women, we investigated whether (1) preconception personality disorder assessed in young adulthood was associated with increased rates of anxiety and depressive symptoms during subsequent pregnancies, and (2) whether associations observed between preconception personality disorder and antenatal anxiety/depressive symptoms might be explained by the presence of preconception anxiety and depression.

## 2. Materials and method

### 2.1. Sample

We recruited eligible female participants from the Victorian Adolescent Health Cohort Study (VAHCS), a prospective cohort study of 1943 male and female participants assessed 10 times from adolescence to adulthood, which commenced in 1992. Data collection protocols were approved by the Royal Children's Hospital Human Research Ethics Committee. A representative sample of adolescents

was selected with a two-stage cluster sampling procedure. In the first stage, 45 secondary schools were randomly selected from a stratified frame of government, private, and Catholic schools, with the probability of each school being selected proportional to the number of year nine students in each school type. In the second stage, two intact classes were randomly selected from each school, the first in the latter half of the ninth school year (wave 1) and the second six months later in the tenth school year (wave 2). School retention rates to year nine in the year of initial sampling were 98%. One school did not continue past the first wave, leaving 44 schools in the sample. Participants were followed up four more times during adolescence at six-monthly intervals (wave 3–6), three times in young adulthood at age 20–21 (wave 7), 24–25 years (wave 8), and 28–29 years (wave 9). From the original sample of 2032 participants, 1943 (95.6%) participated in at least one of the adolescent waves. Of these, 1000 (51.5%) were female and are the focus for this particular study. Fig. 1 shows the flow of female participants through the study. At each wave participants completed a range of assessments of health and wellbeing (Moran et al., 2015).

During the ninth wave of VAHCS, when women were aged 28–29 years, we commenced identification, recruitment, and assessment of participants and their offspring for the Victorian Intergenerational Health Cohort Study (VIHCS). Between November 2006 and July 2013 (i.e. when the women were between the ages of approximately 29–36 years) we contacted active VAHCS participants every six months to identify new pregnancies. Women who were pregnant or had an infant under one-year of age were invited to participate in computer assisted telephone interviews in the third trimester of pregnancy, eight weeks post-birth, and one-year post-birth. Women were invited to participate for every eligible pregnancy during the study period, thus some women completed assessments relating to more than one of their offspring. Assessments included a range of measures of maternal and child health, wellbeing, and development.

From the range of assessments in both studies, the present study utilised the following VAHCS preconception and VIHCS antenatal measures.

### 2.2. Preconception measures (VAHCS)

#### 2.2.1. Personality disorder

When women were aged 24–25 years (VAHCS wave 8) the Standardised Assessment of Personality Disorder (SAP) was used to assess for the presence of personality disorder (Mann et al., 1997). The SAP is a semi-structured informant interview that can be conducted in-person or via telephone to assess for the presence of ten DSM-IV-TR (American Psychiatric Association, 2000) defined categories of personality disorder. It has high inter-rater (kappa 0.76) and good temporal (kappa 0.65) reliability (Pilgrim et al., 1993). Women nominated a friend, partner, or family member to complete the SAP via computer assisted telephone interview with a trained research assistant. If the nominated contact was unavailable or declined involvement, women were asked to nominate a second contact. We selected informant-reports of personality rather than self-report as, in principle, this enhances the validity of a diagnostic assessment for personality

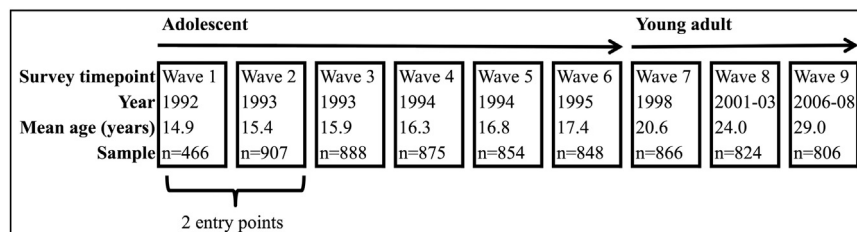


Fig. 1. Sampling and retention of female participants in the Victorian Adolescent Health Cohort Study (VAHCS), 1992–2003. Participant entry into the study was staggered across wave 1 and 2. A total of 1000 females participated at least once during adolescence.

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