

# Anxiety and depression in women and men from early pregnancy to 3-months postpartum

Bárbara Figueiredo · Ana Conde

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**Abstract** To investigate high-anxiety and depression in women and men from early pregnancy to 3-months postpartum, 260 Portuguese couples ( $N=520$ ) filled in the State-Anxiety Inventory (STAI-S) and the Edinburgh Post-Natal Depression Scale (EPDS) at the first, second, and third pregnancy trimesters, childbirth, and 3-months postpartum. Rates for high-anxiety ( $STAI-S \geq 45$ ) in women (13.1%; 12.2%; 18.2%; 18.6%; 4.7%) and men (10.1%; 8.0%; 7.8%; 8.5%; 4.4%) and for depression ( $EPDS \geq 10$ ) in women (20.0%, 19.6%, 17.4%, 17.6%; 11.1%) and men (11.3%; 6.6%; 5.5%; 7.5%; 7.2%) were high. Rates for depression were higher than rates for high-anxiety only in women during early pregnancy and the postpartum, but not at the third pregnancy trimester and childbirth. Rates for high-anxiety and depression were higher in women than in men during pregnancy/childbirth, but not at 3-months postpartum. Rates for high-anxiety but not rates for depression were higher during pregnancy/childbirth compared to 3-months postpartum and only in women. Considering that 15.9% of the parents-to-be were highly anxious and/or depressed during pregnancy—comparing to 9.3% at 3-months postpartum—particular attention should be drawn to both women's and men's mental health early in pregnancy.

**Keywords** Anxiety · Childbirth · Depression · Postpartum · Pregnancy

## Introduction

High psychiatric morbidity, generally postpartum depression in women, has been traditionally reported in the literature. However, some studies conducted during the past few years pointed out that high-anxiety is more prevalent than depression either before and after childbirth in women (Lee et al. 2007; Wenzel et al. 2003, 2005). And that high-anxiety and depression are more prevalent in pregnancy than during the postpartum period, both in women (Andersson et al. 2006; Bretkopf et al. 2006; Heron et al. 2004; Limlomwongse and Liabsuetrakul 2006) and men (Buist et al. 2003; Condon et al. 2004). Women usually show more high-anxiety (Skari et al. 2002) and depression (Edhborg et al. 2005; Matthey et al. 2000; Perren et al. 2005) than their partners, but only recently, men were included in the studies and some controversial results have appeared in the literature (Field et al. 2006).

Empirical studies reported that more than 25% of women (Lee et al. 2007; Ross and McLean 2006) and 20% of their partners (Boyce et al. 2007; Buist et al. 2003; Condon et al. 2004) showed high-anxiety during pregnancy. Both in women as in men, anxiety levels seem to be higher in the first and third trimesters, compared to the second pregnancy trimester (Huizink et al. 2004; Lee et al. 2007; Teixeira et al. 2009). These levels are also higher during pregnancy compared with the postpartum, in women (Andersson et al. 2006; Bretkopf et al. 2006; Heron et al. 2004; Lee et al. 2007) as well as men (Buist et al. 2003; Condon et al. 2004). More women than their partners have been reporting high-anxiety, either before (Dulude et al. 2002) or after childbirth (Skari et al. 2002).

Over 15% of the pregnant women (Dietz et al. 2007; Figueiredo et al. 2007; Kammerer et al. 2009; Limlomwongse and Liabsuetrakul 2006), but less than 10% of their partners

B. Figueiredo (✉) · A. Conde  
School of Psychology, University of Minho,  
Campus de Gualtar,  
4710-057 Braga, Portugal  
e-mail: bbfi@psi.uminho.pt