**Title: Personality Factors and Vulnerability to Posttraumatic Stress Responses after Childbirth**

**Practitioner points**

Positive clinical implications

* Women who expect themselves to be more perfect or who find it more difficult to cope with uncertainty had more negative experiences of childbirth.
* Women with higher levels of perfectionism were more likely to experience more symptoms of posttraumatic stress during the early postnatal period.
* Being more perfectionistic continued to have a more negative effect on women’s wellbeing after birth, regardless of whether they had a positive or negative experience of birth.
* Integrating these findings into antenatal discussion around birth preferences would increase women’s awareness of predisposing and obstetric risk factors that partially explain experiences of unsatisfactory births and postpartum posttraumatic stress.

**Main text:**

**Introduction**

Childbirth is often considered to be a positive life experience for new mothers (Lyerly, 2012). However, up to 45% of women may appraise childbirth as traumatic (Alcorn, O’Donovan, Patrick, Creedy, & Devilly, 2010), with an estimated 3.1% of women meeting the criteria for

posttraumatic stress disorder at 12 weeks’ postpartum (Grekin & O’Hara, 2014). Adverse outcomes associated with postnatal posttraumatic stress symptoms (PTSS) include maternal distress and depression (Shahar, Herishanu-Gilutz, Holcberg, & Kofman, 2015), sexual and marital difficulties (Ayers, Eagle, & Waring, 2006), and problems with mother-infant attachment (Dekel, Thiel, Dishy, & Ashenfarb, 2019). Identifying factors that may predict emotional difficulties following birth is therefore imperative; doing so may enable us to tailor preventative care.

Conceptual frameworks distinguish between vulnerability factors in pregnancy, risk factors during birth, and maintaining factors after birth in the onset and maintenance of PTSS (Ayers, 2004; Slade, 2006). Specifically, the Diathesis-Stress model explains postpartum health outcomes as an interplay between pre-trauma vulnerability factors and birth events (Ayers, Bond, Bertullies, & Wijma, 2016). Perinatal risk factors associated with postnatal PTSS include pre-existing maternal psychological difficulties (Czarnocka & Slade, 2000), a severe fear of childbirth (Söderquist, Wijma, Thorbert, & Wijma, 2009), and a prior experience of traumatic birth (Ayers, 2004). To date, these vulnerability factors have largely been assessed retrospectively when self-reports of predisposing variables may be influenced by postnatal psychological states (McNally, 2003).

 Reviews of PTSS in other populations (i.e. mental health advocates, veterans and undergraduates) have indicated that personality traits may underpin vulnerability or resilience to PTSS following trauma exposure (DiGangi et al., 2013; Jakšić, Brajković, Ivezić, Topić, & Jakovljević, 2012). Personality traits are defined as enduring and stable patterns of thoughts, feelings and actions across contexts and developmental periods (McCrae & Costa, 2003). Factors influencing PTSS following birth may differ from other potentially traumatic events as the event is expected, occurs within the context of formal care, and is anticipated to have a positive outcome (McKenzie-McHarg et al., 2015). This may limit the generalisability of non-perinatal findings to women-only samples within the context of traumatic birth.

 Despite their potential relevance, there is little research examining the role of personality-based risk factors for PTSS related to birth. Firstly, women’s transition into motherhood may be influenced by sociocultural expectations of the ‘perfect’ pregnancy and birth (Henderson, Harmon, & Newman, 2016). The setting of high performance standards and high levels of self-scrutiny (Frost, Marten, Lahart, & Rosenblate, 1990) may be problematic when multiple factors determine the process of birth. However, perfectionism in pregnancy has only previously been studied in relation to postnatal depression, anxiety and maternal bonding (Egan, Kane, Winton, Eliot, & McEvoy, 2017; Oddo-Sommerfeld, Hain, Louwen, & Schermelleh-Engel, 2016).

Secondly, trait organisation is another personality factor that may affect the appraisal of birth and postpartum PTSS. In the context of what can be a chaotic and rapidly unfolding process, expectant mothers who have a tendency to be over orderly, organised and tidy (Antony, Purdon, Huta, & Swinson, 1998) may also be more vulnerable to psychological distress during the perinatal period. Whilst this cluster of personality characteristics has not been associated with postnatal depression (Gelabert et al. 2012), the findings from qualitative reviews indicate that a large proportion of women read educational resources and develop ‘birth plans’ in preparation for birth (Divall, Spiby, Nolan, & Slade, 2017). Difficulties in implementing birth plans have been related to more negative appraisals of birth (Cook & Loomis, 2012), which is a known risk factor for postnatal PTSS.

Finally, the unpredictable nature of birth means that women inevitably experience a lot of uncertainty when they give birth for the first time. Individuals with higher levels of intolerance of uncertainty are more likely to interpret and respond to ambiguous events as threatening (Dugas, Schwartz, & Francis, 2004) and experience higher levels of distress in uncertain situations (Bottesi, Noventa, Freeston, & Ghisi, 2019). This may have a detrimental impact on women’s experience of birth. More recently, higher intolerance of uncertainty has been associated with PTSS in terms of avoidance, numbing and hyperarousal (Fetzner, Horswill, Boelen, & Carleton, 2013), and increased PTSS in women following exposure to unpredictable or traumatic events (Oglesby, Boffa, Short, Raines, & Schmidt, 2016). Therefore, higher intolerance of uncertainty may also play a role in the development and severity of childbirth-related PTSS.

**Objectives**

This longitudinal study aimed to determine whether predisposing personality traits in pregnant women affect the experience of birth, and women’s wellbeing during the early postnatal period. Specifically, we aimed to test three hypotheses:

1. We hypothesised that women with higher levels of perfectionism, organisation or intolerance of uncertainty would be more likely to a) appraise their childbirth as more negative, and b) experience higher levels of PTSS relating to childbirth.

2. In order to understand the specific, individual contribution of personality on birth experience and PTSS, and given the known relationship between demographic and obstetric variables (e.g. mode of birth; see Olde, van der Hart, Kleber, & van Son, 2006, for a review) and PTSS, we planned further analyses to identify any demographic and obstetric variables to be controlled alongside prenatal mood within the regression models. At this stage, we hypothesised that the relationships outlined in hypothesis 1a and 1b would continue to be evident when prenatal mood was statistically controlled for.

3. We also hypothesised that the relationships between levels of the personality traits and postpartum PTSS would be moderated by the appraisal of birth, such that personality traits were expected to be more related to PTSS when the appraisal was negative in comparison to positive appraisals.

**Method**

*Design and Procedure*

Ethical approval was obtained from The Ethics Committee, North-West England, prior to data collection (reference number 2475).A prospective survey design was adopted, with participants assessed at two time points: between 32 to 42 weeks’ gestation (time 1), and approximately 6 to 12 weeks after childbirth (time 2). Data were collected between September 2018 to February 2019.

At time 1, women aged 18 to 50 who were at least 32 weeks pregnant with their first child, were included. Participants who disclosed a history of mental health difficulties (i.e. under the care of a psychiatrist), or those receiving input from the perinatal mental health team, were excluded. Participants were also exempt if they were expecting two or more infants, their pregnancy was considered high risk (i.e. under consultant-led care), or plans were in place to give birth by elective caesarean section. At time 2, women who gave birth at or after 37 weeks of pregnancy were included. Women who experienced a pregnancy loss or stillbirth, were receiving input from the perinatal mental health team, or whose infant required neonatal care for more than 48 hours, were excluded. This criterion reduced the number of potential confounding factors on the mechanisms underlying birth experience and postpartum wellbeing.

Participants were recruited via *Emma’s Diary* ([www.emmasdiary.co.uk](http://www.emmasdiary.co.uk)). This is an online resource which offers information to women about pregnancy, childbirth and motherhood. Information about *Emma’s Diary* is routinely supplied to women during pregnancy by their midwife or general practitioner. Women who register are asked to provide personal demographic information and their expected date of delivery.

Measures were administered via Qualtrics ([www.qualtrics.com)](http://www.qualtrics.com)). The participant recruitment flowchart is outlined in Figure 1. At time 1, an email invitation was sent to 10,000 website registrants who met the inclusion criterion as determined by the information supplied to *Emma’s Diary*. Participants read an information sheet outlining the study aims and procedures, and provided their informed consent. Eligibility to participate was then assessed. Participants who met the inclusion criteria then provided demographic information and completed three measures assessing personality traits and mood. At time 2, participants received a follow-up email from the researchers. Eligibility to participate was then assessed, prior to participants completing five measures assessing PTSS, childbirth experience, birth trauma and mood, and answering questions about their obstetric experience. Participation took approximately 30 minutes in total. Participants who completed all measures had the opportunity to enter into a prize draw for their time. Participants who scored above clinical cut-off for problematic levels of PTSS as per our ethics approval received an email from the researchers outlining various avenues of support available.

*Measures*

*Personality traits*

The Frost Multidimensional Perfectionism Scale (FMPS; Frost et al. 1990) is a 29-item measure of perfectionism consisting of five subscales: *concern over mistakes*, *personal standards*, *parental expectations*, *parental criticism* and *doubt about actions.* Questions include: “I have extremely high goals.” A sixth subscale, organisation, is not routinely included in the total perfectionism score, but was included as a six-item measure of organisation. Items addressing organisation include “organisation is very important to me” and “I am a neat person.” This measure has been validated on women during pregnancy (Oddo-Sommerfeld et al. 2016) and had good to excellent internal consistency for perfectionism (*α* =.92) and organisation (*α* =.83) in the present sample.

The Intolerance of Uncertainty Scale, Short Form (IUS-12; Carleton, Norton, & Asmundson, 2007) is a 12-item measure that assesses responses to uncertainty, ambiguous situations and the future. Questions include: “Unforeseen events upset me greatly.” This measure has been validated on clinical samples (Laposa, Collimore, Hawley, & Rector, 2015), significantly correlates with the full 27-item version (*r* =.96; McEvoy & Mahoney, 2011), and had excellent internal consistency (*α* =.90) in the present sample.

Higher scores indicate higher levels of each personality trait.

*Emotional functioning*

The Center for Epidemiological Studies-Depression Scale (CES-D; Radloff, 1977) is a 20-item self-report questionnaire used to screen for the presence and frequency of affect, social and behavioural symptoms associated with depression. Items include: “I felt sad” and “I could not get going.” Higher scores indicate higher levels of associated symptoms. This measure has been validated for use with women during the perinatal period (Onoye et al., 2013) and showed good internal consistency (*α* =.89).

*Appraisals of birth*

The Childbirth Experience Questionnaire (CEQ; Dencker, Taft, Bergqvist, Lilja, & Berg, 2010) is a 22-item measure involving four subscales to assess women’s experience of birth: own capacity (i.e. sense of control, feelings during birth and labour pain), professional support (i.e. information and midwifery care), perceived safety (i.e. sense of security and memories of birth) and participation (i.e. own ability to influence birth). Question 9 (“Some of my memories from childbirth make me feel depressed”) was removed at the request of *Emma’s Diary* due to the terminology used. This did not impact the process of scoring the perceived safety scale, as all other items were completed by all participants. Questions include “labour and birth went as I had expected.” Higher scores indicate better childbirth experience. The CEQ has demonstrated a strong correlation (*r* =.73) with the ‘gold standard’ interview assessment tool (the Care Quality Commission Maternity Survey). Cronbach’s alpha for the *participation* subscale was 0.43. Internal consistency for the remaining scales and total CEQ ranged between0.79 and 0.90.

 The Experience of Birth Scale (EBS; Slade, MacPherson, Hume, & Maresh, 1993) is a 10-item measure consisting of independent positive and negative subscales of adjectives to describe birth. Positive adjectives include “exciting” and “exhilarating,” whereas negative adjectives include “frightening” and “difficult.” Participants were asked to rate the extent to which they experienced each emotion on a 0 to 10 visual analogue scale. Higher scores indicate higher levels of positive and negative feelings. The measure has good content validity as it was developed with women postnatally (Slade et al. 1993). Cronbach’s alpha ranged from 0.77 and 0.88 in the present sample.

An assessment of birth trauma developed by Slade et al. (2014), based upon *The Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev; American Psychiatric Association, 2000) was administered. Participants were asked if at any time during childbirth or after birth whilst in hospital they (a) experienced horror or helplessness about what was happening, (b) felt really frightened about their own or their baby’s wellbeing. Responses were scored on a binary scale (0 = *no*, 1 = *yes*). Cronbach’s alpha was .60 in the present sample. Birth trauma responses were coded to represent increasing levels of negative birth experience (0 = *no to both statements*, 1 = *yes to one statement*, 2 = *yes to both statements*) prior to the analyses.

*PTSS*

The Impact of Events Scale-Revised (IES-R; Weiss, 2007) is a 22-item measure of *hyperarousal*, *intrusive thoughts* and *avoidance behaviours* following a traumatic event. Participants were asked to answer all questions in relation to their experiences of childbirth. Higher scores indicate higher levels of symptoms. All analyses involving the IES-R reflect the total PTSS score. The clinical cut off is >37. The IES-R has good reliability in perinatal samples (Gökçe İsbir, İnci, Önal, & Yildiz., 2016), and showed excellent internal consistency (*α* =.93) in the present sample.

*Sample size*

A priori power calculation using G\*Power 3 software (Faul, Erdfelder, Lang, & Buchner, 2007) indicated a required sample size of 403 participants at time 2, in order to detect a small effect of 0.3, an alpha error probability of .05 and power of .80.

*Statistical analysis*

The data were analysed using the Statistical Package for Social Science version 25 (IBM Corp, 2017). Parametric and non-parametric tests were used to compare those completing both time points versus those discontinuing after time 1, to assess the relationships between independent and dependent variables, and to examine the effect of the demographic and obstetric variables on the independent and dependent variables. Hierarchical regressions identified whether levels of the personality traits predicted birth experience (CEQ and EBS) and PTSS. Assumptions for regression analyses were first assessed. The variance inflation factor (VIF) ranged from 1.13 to 1.62. VIFs below 10 are widely considered as acceptable (O’Brien, 2007). Finally, a moderation analysis tested whether the relationships between levels of the personality traits and PTSS were moderated by the appraisal of birth (CEQ).

*Incomplete data*

Of the 422 participants who completed at least one full measure at time 2, data from four participants were excluded prior to any analysis due to concerns regarding response bias (n=418).

**Results**

*Participants*

Tables 1 and 2 show demographic and obstetric data. The majority of participants were below 30 years old (56%), were either married (58.1%) or cohabiting (32.8%), had obtained higher educational qualifications (67.7%) and were employed during pregnancy (90.2%).

Independent samples t-tests indicated that participants who were retained at time 2 (n=418; *M*=22.81, *SD*=5.18) scored higher on the personal standards domain of perfectionism compared to participants who were lost to attrition (n=206; *M*=21.87, *SD*=5.52), *t*(622)=-2.07, *p*=.039, *d*=-.18, 95% confidence interval (-0.34, -0.01). Pearson’s Chi-squared tests also indicated that those retained were more likely to be married, *X2* (2)= 6.27, *p*=.043, have higher educational qualifications, *X2* (2) = 24.80, *p*<.001, and be in paid employment during pregnancy, *X2* (1) = 5.09, *p*=.024. No other significant differences were identified based on demographic profile.

*Prevalence of PTSS and trauma appraisals of birth*

Table 3 displays the descriptive statistics for all predictor and outcome measures. Overall, 21 participants (5%) fell above a cut-off reflective of clinical or problematic levels of PTSS.

An assessment of birth trauma developed by Slade et al. (2014) indicated that 42% of the present sample experienced horror or helplessness about what was happening during birth, and 33.2% felt really frightened about their own or their baby’s wellbeing. Just under a quarter of the sample (23.7%) experienced both aspects of birth trauma.

*Hypothesis 1a: Do higher levels of perfectionism, organisation or intolerance of uncertainty lead women to appraise their childbirth as more negative?*

The zero-order correlation coefficients for all study variables are shown in Table 4. Higher levels of perfectionism were negatively related to the appraisal of birth subscales and overall appraisal of birth. Higher perfectionism was related to more negative feelings and less positive feelings about birth experience. Significant positive correlations were also found for levels of perfectionism and the appraisal of birth as traumatic. Higher levels of intolerance of uncertainty were negatively but weakly related to *own capacity*, *perceived safety* and the overall appraisal of birth, in addition to negative feelings about the birth experience. Significant positive correlations were also found for levels of intolerance of uncertainty and the experience of birth trauma. Organisation was not related to any measure of birth experience. Overall, only higher levels of perfectionism and intolerance of uncertainty were related to a more negative experience of birth, but the magnitude of effects for all findings were small.

*Hypothesis 1b: Do higher levels of perfectionism, organisation or intolerance of uncertainty cause women to* experience higher levels of PTSS relating to childbirth?

Higher levels of perfectionism and intolerance of uncertainty were related to higher levels of PTSS after childbirth. Levels of organisation were unrelated to PTSS. The results in Table 4 indicate that higher levels of perfectionism and intolerance of uncertainty increased the probability that participants report more PTSS after birth, but the magnitude of effects were small.

Together, bivariate correlations showed no association between organisation and the dependent variables; organisation was therefore not included in further analyses.

*Hypothesis 2: What obstetric variables if any require control within the regression models?*

A series of one-way ANOVAs and independent samples t-tests were conducted to compare the effect of the demographic and obstetric variables on levels of the two personality traits, CEQ (birth experience), EBS (positive and negative feelings) and PTSS. These tests were conducted to identify additional variables to be controlled within the regression models.

Firstly, an independent-samples t-test showed a significant difference between women aged 18 ≤ 30 years and 31 ≤ 50 years on levels of intolerance of uncertainty, *t*(416)=2.56, *p*=.011, *d*=.25, 95% confidence interval (0.06, 0.45). Levels of intolerance of uncertainty were significantly higher for women between 18 ≤ 30 years (M=29.80, SD=9.34) than women who were aged between 31 ≤ 50 years (*M*=27.58, *SD*=8.06). As the size of the effect was small, age was not controlled for in the regression analyses. There were no other significant differences when looking at age, marital status, education level and employment, and the independent and dependent variables (*p* values ranged from.087 to .958). Thus, no demographic were used as controls.

Secondly, an independent-samples t-test showed a significant difference between experiences of foetal distress during birth on levels of perfectionism, *t*(409)=-2.75, *p*=.006. Women who reported foetal distress had higher levels of perfectionism (*M*=77.05, *SD*=18.83), than those who did not report this (*M*=72.19, *SD*=16.89). The magnitude of the effect was small (*d*=-.27, 95% confidence interval (-0.47, -0.08). As the presence of foetal distress was derived from self-report data rather than an objective source (i.e. health records), significant associations between perfectionism and foetal distress could represent a perceptual confound via selective attention and memory. Foetal distress was therefore not controlled for in the regression analyses.

Thirdly, A series of one-way ANOVAs showed a significant effect of mode of birth on the CEQ, *F*(2,408) = 17.62, *p*<.001, ηp²=.080, negative feelings, *F*(2,408) = 7.11, *p*<.001, ηp²=.034, positive feelings, *F*(2,408) = 4.21, *p*=.015, ηp²=.020, and PTSS, *F*(2,408) = 4.762, *p*=.009, ηp²=.023. Hochberg’s GT2 post hoc test indicated that women who underwent an assisted vaginal delivery (*M*=2.84, *SD*=.43) or a caesarean section (*M*=2.76, *SD*=.53) appraised their birth experience more negatively (CEQ) than women undergoing an unassisted vaginal delivery (*M*=3.09, *SD*=.51). Additionally, women who underwent an assisted vaginal delivery (*M*=31.13, *SD*=7.75) or a caesarean section (*M*=30.43, *SD*=9.03) scored significantly higher on negative feelings about birth than women undergoing an unassisted vaginal delivery (*M*=27.55, *SD*=9.35). Women who underwent an assisted vaginal delivery (*M*=21.52, *SD*=11.78) also scored significantly lower on positive feelings about birth than women undergoing an unassisted vaginal delivery (*M*=25.18, *SD*=.11.82). Finally, women who underwent an assisted vaginal delivery *M*=13.19, *SD*=12.38) experienced significantly higher PTSS than women undergoing an unassisted vaginal delivery (*M*=9.13, *SD*=.11.27). Together, these results indicated that women undergoing a medical intervention during delivery appraised their childbirth more negatively, experienced more negative feelings and PTSS, and less positive feelings about birth. Given the small to moderate effects indicated, mode of birth was controlled for in the regression models. The data for mode of birth was simplified and recoded (0 = *unassisted vaginal delivery*, 1 = *delivery requiring medical intervention*) prior to being entered into the regression analyses to reflect the pattern of significant differences found.

Finally, An independent samples t-test showed a significant difference between the experience of complications since birth on PTSS, *t*(408)=-4.614, *p*<.001. Women who experienced complications (*M*=15.27, *SD*=9.23) reported significantly more PTSS than those who did not experience any complications (*M*=9.23, *SD*=10.77; moderate effect size *d*=-.51, 95% confidence interval (-0.73, -0.29). Complications since birth (coded as 0 = *no complications*; 1 = *complications experienced*) was therefore controlled in the regression analyses predicting PTSS.

*Hypothesis 2a: Do the relationships between perfectionism or intolerance of uncertainty continue to be evident on birth experience when prenatal mood and mode of birth are controlled?*

Three hierarchical multiple regressions were performed to predict birth experience (CEQ and EBS) from perfectionism and intolerance of uncertainty, whilst controlling for prenatal mood and mode of birth. Table 5 reports the individual beta coefficients and standard errors for each of the predictors.

*Relationship between personality and the appraisal of birth (CEQ)*

Prenatal mood and mode of birth were entered in step 1, and together explained 14.4% of the variance of CEQ, *F* (2, 408)=34.32, *p*<.001. With the addition of perfectionism and intolerance of uncertainty at step 2, the standardised betas for prenatal mood (β=-.217, *p*<.001) and mode of birth (β=-.290, *p*<.001) reduced, but remained significant. Adding in perfectionism and intolerance of uncertainty led to a small increase of 1.5% of the variance of CEQ accounted, ∆ *R2* *=.*015, *F* (2, 406)=3.59, *p*=.029. Only perfectionism was significant. Thus, women with higher levels of perfectionism reported more negative experiences of birth, even if they experienced lower mood during the pregnancy and regardless of mode of delivery.

*Relationship between personality and negative feelings about birth (EBS)*

Prenatal mood and mode of birth were entered in step 1, and together explained 14.2% of the variance of negative feelings about birth,  *F* (2, 408)=33.83, *p*<.001. With the addition of perfectionism and intolerance of uncertainty at step 2, the standardised betas for prenatal mood (β=.242, *p*<.001) and mode of birth (β=.198, *p*<.001) reduced, but remained significant. The step including perfectionism and intolerance of uncertainty led to a small increase of 2.9% of the variance of negative feelings accounted, ∆ *R2* *=.*029, *F* (2, 406)=7.11, *p*<.001. Only intolerance of uncertainty was significant. Thus, women with higher levels of intolerance of uncertainty reported more negative feelings about birth, regardless of emotional difficulties during pregnancy and mode of delivery.

*Relationship between personality and positive feelings about birth (EBS)*

Prenatal mood and mode of birth were entered in step 1, and together explained 4% of the variance of positive feelings about birth, *F* (2, 408)=8.54, *p*<.001. No significant change in *R*2 was observed when adding in perfectionism and intolerance of uncertainty at the second step, ∆ *R2* *=.*013, *F* (2, 406)=2.77, *p*=.064. Overall, levels of perfectionism and intolerance of uncertainty did not predict levels of positive feelings about birth.

*Hypothesis 2b: Do perfectionism or intolerance of uncertainty continue to be associated with PTSS when prenatal mood, mode of birth and maternal complications since birth are controlled?*

A hierarchical multiple regression was performed to predict levels of PTSS from perfectionism and intolerance of uncertainty, whilst controlling for prenatal mood, mode of birth and maternal complications since birth. Table 6 reports the individual beta coefficients and standard errors for each of the predictors.

Prenatal mood, mode of birth and maternal complications since birth were entered in step 1, and together explained 10.8% of the variance of PTSS, *F* (3, 406)=16.32, *p*<.001. With the addition of perfectionism and intolerance of uncertainty at step 2, the standardised betas for prenatal mood (β=.139, *p*=.008), mode of birth (β=.117, *p*=.015), and maternal complications since birth (β=.146, *p*=.003) all reduced, but remained significant. Adding in perfectionism and intolerance of uncertainty led to an increase of 3.5% of the variance of PTSS accounted, ∆ *R2* *=.*035, *F* (2, 404)=8.17, *p*<.001. Only perfectionism was significant. Thus, higher levels of perfectionism predicted higher postpartum PTSS, regardless of prenatal mood during pregnancy, mode of delivery and the experience of maternal complications after birth.

*Hypothesis 3: Are the relationships between perfectionism or intolerance of uncertainty and PTSS moderated by the appraisal of birth (CEQ)?*

Moderation analyses were conducted using the Hayes Process tool plug-in for SPSS (version 3.3; Hayes, 2012). Prenatal mood, maternal complications since birth, mode of birth, perfectionism, intolerance of uncertainty and CEQ were entered in step 1, and together explained 19.9% of the variance of PTSS, *F* (6, 403)=16.69, *p*<.001. Only perfectionism, β=.141, *p*=.012, CEQ, β=-.262, *p*<.001, and maternal complications since birth, β=.110, *p*=.020, significantly accounted for this variance. No significant change in *R*2 was observed when adding in the two interaction terms in the second step, ∆ *R2* *=.*011, *F* (2, 401)=2.74, *p*=.066.Thus, the analysis did not produce a significant interaction effect, indicating that levels of perfectionism and intolerance of uncertainty do not interact with appraisals of birth to determine levels of postpartum PTSS.

**Discussion**

This is the first study to explore the roles of perfectionism, organisation and intolerance of uncertainty on the appraisal of birth and postpartum PTSS. There was a relatively high prevalence of birth trauma (Slade et al., 2014) within the sample (23.7%), similar to previous estimates (Alcorn et al., 2010; Smarandache, Kim, Bohr, & Tamim, 2016). This suggests that negative appraisals of birth are common. The 5% prevalence found for PTSS at 6 to 12 weeks’ postpartum was slightly higher than that reported in other studies involving primiparas women (Khoramroudi, 2018).

Turning first to the experience of birth, higher levels of perfectionism and intolerance of uncertainty were associated with more negative appraisals of birth, although effect sizes were small. The results showed differential effects of the two personality traits on birth experience. Intolerance of uncertainty predicted more negative feelings about birth at 6 to 12 weeks’ postpartum. These results provide partial support for hypothesis 1a and 2a. It has previously been identified as a mechanism underpinning fear of childbirth (FOC; Rondung, Ekdahl, & Sundin, 2019), whilst FOC is a recognised predictor of negative and/or trauma appraisals of birth (Henriksen, Grimsrud, Schei, Lukasse, & Bidens Study Group, 2017). Lower perception of control also contributes to more negative appraisals of birth (Goodman, Mackey, & Tavakoli, 2004). Therefore higher tendencies to interpret and respond to uncertain events as threatening shown in intolerance of uncertainty is likely to be related to more negative feelings about birth given the unpredictability inherent in childbirth. In addition, elevated perfectionism predicted more negative appraisals of birth according to the CEQ. Multiple factors determine the process of birth, above and beyond a woman’s own actions so those more prone to critical self-scrutiny may evaluate their birth experiences and the support from maternity providers as more negative.

In line with hypothesis 1b and 2b, the role of personality-based risk factors on women’s postnatal mental health was partially confirmed. Higher levels of perfectionism were associated with and predicted higher levels of PTSS related to birth at 6 to 12 weeks’ postpartum, accounting for 3.5% of the variance in PTSS. Our results extend the findings from previous research exploring the association between perfectionism and PTSS in non-childbearing samples (Egan, Hattaway, & Kane, 2014), and studies also indicating the negative effect of high perfectionism on other areas of women’s wellbeing postpartum (e.g. postnatal anxiety, Oddo-Sommerfeld et al., 2016).

Contrary to our hypotheses, the tendency to be highly organised was unrelated to the appraisal of birth and PTSS. These results are consistent with previous research using the FMPS to examine postnatal depression (Gelabert et al., 2012), but also suggest that trait organisation is neither a risk nor protective factor for negative or traumatic birth experiences or PTSS. This study used subscales from the FMPS to individually examine perfectionism and organisation as recommended by Frost et al. (1990). More recently, studies have categorised the FMPS subscales into functional (*personal standards* and *organisation*) and dysfunctional (*concern over mistakes, doubts about actions, parental expectations and parental criticism*) perfectionism (e.g. Gelabert et al., 2012; Mazzeo et al., 2006). The present findings suggest that perfectionism and organisation do represent distinct constructs in the context of birth and postpartum PTSS. Therefore, future studies should be cautious of combining and implementing the subscales in this way.

The present findings also indicated that neither perfectionism nor intolerance of uncertainty predicted positive feelings about birth. Thus, the mechanisms underlying positive and negative appraisals of birth appear to be different. Identification of personality factors that may be linked to positive appraisal and protective for birth trauma and PTSS require further investigation.

This is the first study to examine whether birth experience moderates the effect of levels of personality traits on PTSS. The non-significant interaction effect indicates that hypothesis 3 was not supported. Given that levels of perfectionism were shown to predict postpartum PTSS, the results indicate that high perfectionistic tendencies may pose a risk for women’s postpartum wellbeing, irrespective of birth experiences.

*Strengths and limitations*

All participates used a website related to pregnancy, birth and motherhood. Online samples commonly attract young, educated, middle-class and technologically-proficient individuals (Hewson, 2015). Whilst this process meant that sufficient numbers were recruited to ensure adequate power, there may be biases in the sample. Within this sample, 10,000 email invitations were sent out. Although some women would not have met eligibility criteria, the final analysed sample was 418. This is likely to be only 5% of the potential. We also identified small differences in the demographic characteristics, and levels of perfectionism (personal standards domain) between participants who completed the survey and those that provided responses at time 1 only.

Measuring the multidimensional nature of birth is complex (Larkin, 2009). Preexisting trauma was not measured or included in analysis. Research indicates that women who have experienced prior trauma are at a higher risk of developing PTSS postpartum (Leeners, Richter-Appelt, Imthurn, & Rath, 2006). Subsequently, it may have been helpful to control for past experiences of trauma and PTSS within the regression models. The CEQ, alongside the EBS, were used as they collaboratively captured important components of the birth experience, some of which have been correlated with birth trauma (Bryanton, Gagnon, Johnston, & Hatem, 2008). Both instruments have robust psychometric properties (e.g. King, McKenzie-McHarg, & Horsch, 2017).

*Implications*

Within a clinical context, the small degree of variance explained by perfectionism and intolerance of uncertainty does not warrant the use of standardised antenatal screening instruments as part of a preventative intervention. Given that women report heterogeneity in the amount and quality of information afforded by their midwives (Divall et al., 2017), these results should instead be disseminated to maternity care providers to increase their awareness and knowledge about dispositional and obstetric risk factors for negative births and PTSS. Where previous patterns of high perfectionism or intolerance of uncertainty are highlighted by women during antenatal planning meetings, individually-tailored discussion and education should be provided in line with the recommendations outlined in *Implementing Better Births* (NHS England 2017).

The findings also emphasise the importance of flexibility in birth planning. Birth plans constitute a key element of antenatal and intrapartum care provision in England (National Institute for Health and Care Excellence, 2014). Birth plans that are overly prescriptive may promote the idea that maintaining high personal standards and obtaining certainty is possible during an event that is unpredictable and highly changeable. Whilst reframing birth plans as ‘birth preferences’ may facilitate psychological adjustment (Welsh & Symon, 2014), future research should explore the relationship between higher levels of perfectionism and intolerance of uncertainty in the context of birth planning.

A shift in societal norms and expectations surrounding the ‘perfect birth’ may empower and better prepare women to cope with childbirth and the transition to motherhood. The present results suggests this may be pivotal for women with high perfectionistic tendencies. Clinical Psychologists must draw upon evidence of women’s experiences in challenging these outdated ideologies. The recent expansion in the provision of specialist perinatal mental health services (see *The Perinatal Mental Health Care Pathways,* National Collaborating Centre for Mental Health 2018) means that greater funding and resources can be allocated to preventative intervention. To date, specific evidence-based prevention or intervention programs for PTSS following birth are still lacking (Vossbeck-Elsebusch, Freisfeld, C, & Ehring, 2014). The present results suggest that clinical psychologists should consider the efficacy of treatments for perfectionism at problematic levels, as an enhancement of established cognitive behavioural interventions for PTSS. This may be important for women with high levels of perfectionism who go on to experience further births.

*Future research*

Future studies may want to explore whether the present results hold true for different ethnic groups and geographic areas with differing levels of social deprivation. In the context of high perfectionism and intolerance of uncertainty, the impact of individually-tailored discussion and education as outlined in *Implementing Better Births* (NHS England, 2017) on birth experience and PTSS could be evaluated. In addition, investigating how high and low levels of perfectionism and intolerance of uncertainty are differentially externalised and expressed within the delivery room may facilitate the identification of protective factors that may moderate the relationship between higher levels of perfectionism or intolerance of uncertainty and birth experience.

Longitudinal studies, beginning antenatally, may be most helpful in identifying additional and more instrumental risk factors for negative birth experiences and PTSS, in light of the small degree of variance explained by perfectionism and intolerance of uncertainty. Preliminary evidence indicates that levels of other personality traits may predict appraisals of labour and childbirth. Specifically, higher levels of neuroticism (i.e. the tendency to be emotionally reactive and experience negative emotions more easily; Costa & McCrae, 1992) may predispose more physically and psychologically challenging experiences of birth (Johnson & Brown, 2013; Wilde‐Larsson, Sandin‐Bojö, Starrin, & Larsson, 2011). Furthermore, neuroticism has been significantly associated with PTSS following exposure to other traumatic events (see Jakšić et al., 2012, for a review). Future research could explore the predictive role of neuroticism in the context of postpartum PTSS.

It must be noted the measure of perfectionism used focuses on attitudes to tasks/work/school/performance. This raises the question of whether such general measures of trait perfectionism (like the FMPS) may require adaption to better consider the core components specifically underlying ‘performance’ relating to childbirth and whether this could explain the low proportion of variance explained.

**Conclusion**

The present findings highlight the unique and maladaptive roles of higher levels of perfectionism and intolerance of uncertainty on the appraisal of birth, and higher levels of perfectionism on PTSS at 6 to 12 weeks’ postpartum. Integrating these findings into antenatal discussion around birth planning could increase women’s awareness of predisposing and obstetric risk factors that partially explain experiences of unsatisfactory births and postpartum PTSS.

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**Tables and Figures**

**Figure 1.** Participant recruitment flowchart

Email invitation sent by Emma’s Diary to 10,000 potential participants

228 participants excluded:

3: didn’t complete all of inclusion criteria

202: did not meet one of criterion:

24: not first pregnancy

6: expecting > one infant

13: < 32 weeks pregnant

23: planned to delivery via caesarean section

18: under the care of perinatal mental health team

19: current/ past use of mental health services

99: under consultant led care

23: did not meet two or more of criteria

1075 participants commenced the survey

219 participants dropped out during completion of questions related to:

118: consent form

39: perfectionism/organisation

43: intolerance of uncertainty

19: prenatal mood

628 participants completed the survey at time 1, and received the follow-up email at time 2

135 participants did not commence the survey at time 2, and were excluded

51 participants excluded:

47: did not meet one of criterion:

 3: not 37<42 weeks’ gestation at birth

 15: under the care of perinatal mental health services

 7: baby not alive/well at birth

 22: neonatal care for >48 hours

4: did not meet two or more of criteria

493 completed questions related to eligibility criteria

20 participants dropped out during completion of questions related to:

8: re-entering contact email address

 6: did not enter

 2: email address did not correspond with time 1

12: PTSS

442 commenced the survey at time 2

422 participants fully completed at least one measure at time 2:

412: all measures and obstetric data

414: all measures except birth trauma scale and some obstetric data

418: PTSS and postnatal mood

422: PTSS only

*Instruments*

At time 1, demographic data were collected.

Table 1.

*Demographic data of the study population*

|  |  |  |
| --- | --- | --- |
|  | **Total n** | **%** |
| *Age (years)* |  |  |
|  18 ≤ 30 | 234 | 56.0 |
|  31 < 50 | 184 | 44.0 |
| *Marital Status* |  |  |
|  Married | 243 | 58.1 |
|  Cohabiting  | 137 | 32.8 |
|  Not married | 175 | 9.1 |
| *Educational Attainment* |  |  |
|  No qualifications/GCSE’s | 50 | 12 |
|  A levels/vocational qualifications | 85 | 20.3 |
|  Graduate/post graduate  | 283 | 67.7 |
| *Pre-pregnancy employment* |  |  |
|  Employed (full time/part time/self-employed) | 377 | 90.2 |
|  Unemployed (out of work/voluntary work/student) | 41 | 9.8 |

|  |
| --- |
| *Note.* n=418 |

Table 2.

*Obstetric data of the study population*

|  |  |  |
| --- | --- | --- |
|  | **Total n** | **%** |
| *Number of weeks’ gestation at birth* |  |  |
|  37 ≤ 38 weeks | 45 | 10.9 |
|  38 ≤ 39 weeks | 45 | 10.9 |
|  39 ≤ 40 weeks | 91 | 21.1 |
|  40 ≤ 41 weeks | 123 | 29.9 |
|  41 ≤ 42 weeks | 108 | 26.2 |
| *Induction provided* |  |  |
|  Yes | 164 | 39.8 |
|  No | 248 | 60.2 |
| *Self-reported length of labour* |  |  |
|  0 ≤ 24 hours | 278 | 67.5 |
|  24 ≤ 48 hours | 98 | 23.8 |
|  48 ≤ 72 hours | 22 | 5.3 |
|  > 72 hours | 14 | 3.4 |
| Pain relief used |  |  |
|  Yes | 336 | 81.6 |
|  No | 76 | 18.4 |
| Method of pain relief (if used, n=336) |  |  |
|  Gas and air | 165 | 49.1 |
|  Epidural | 144 | 42.9 |
|  General anaesthetic  | 7 | 2.1 |
|  Other | 20 | 5.9 |
|  |  |  |
| Table 2. *(Continued)* |  |  |
|  | **Total n** | **%** |
| Mode of birth |  |  |
|  Normal vaginal delivery | 206 | 50.0 |
|  Assisted vaginal delivery | 112 | 27.2 |
|  Emergency caesarean section | 93 | 22.6 |
|  Missing data | 1 | 0.2 |
| Others present at birth (excluding health professionals) |  |  |
|  Yes | 408 | 99.1 |
|  No | 3 | 0.7 |
|  Missing data | 1 | 0.2 |
| Foetal distress |  |  |
|  Yes | 177 | 43.0 |
|  No | 234 | 56.8 |
|  Missing data | 1 | 0.2 |
| Infant required neonatal care |  |  |
|  Yes | 31 | 7.5 |
|  No | 380 | 92.3 |
|  Missing data | 1 | 0.2 |
| Length of neonatal care (if required, n=31) |  |  |
|  0 ≤ 24 hours | 21 | 67.7 |
|  24 ≤ 48 hours | 10 | 32.3 |
| Maternal complications during/immediately after birth |  |  |
|  Vaginal tear requiring stitching | 156 | 37.9 |
|  Episiotomy | 93 | 22.5 |
|  Heavy blood loss requiring a transfusion  | 23 | 5.6 |
|  Other | 36 | 8.7 |
|  None | 102 | 24.8 |
|  Missing | 2 | 0.5 |
| Maternal complications since birth |  |  |
|  Vaginal infection | 33 | 8.0 |
|  Caesarean wound infection | 22 | 5.4 |
|  Major bleeding (haemorrhage) | 7 | 1.7 |
|  Other | 50 | 12.1 |
|  None | 298 | 72.3 |
|  Missing data  | 2 | 0.5 |

|  |
| --- |
| *Note.* n=412 |

Table 3.

*Descriptive statistics (n=418)*

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Mean (SD)** | **Range of scores** | **Possible range of scores** |
| **Prenatal period (32 ≤ 42 weeks’ gestation)** |  |  |  |
| Perfectionism | 74.29 (17.88) | 33-129 | 29-145 |
|  Concern over mistakes | 20.81 (7.24) | 9-41 | 9-45 |
|  Personal standards | 22.81 (5.18) | 8-35 | 7-35 |
|  Parental expectations | 12.87 (4.11) | 5-25 | 5-25 |
|  Parental criticism | 7.68 (3.45) | 4-18 | 4-20 |
|  Doubts about actions  | 10.12 (3.35) | 4-19 | 4-20 |
| Organisation  | 24.78 (3.49) | 14-30 | 6-30 |
| Intolerance of uncertainty  | 28.83 (8.86) | 13-54 | 12-60 |
|  Prospective Anxiety | 18.73 (5.51) | 7-34 | 7-35 |
|  Inhibitory Anxiety  | 10.09 (4.05) | 5-21 | 5-25 |
| Prenatal mood | 12.91 (8.80) | 0-50 | 0-60 |
| **Postnatal period (6 ≤ 12 weeks)** |  |  |  |
| PTSS | 10.85 (12.04) | 0-69 | 0-88 |
|  Intrusion | 4.99 (5.33)  | 0-28 | 0-32 |
|  Avoidance | 3.58 (4.72) | 0-24 | 0-32 |
|  Arousal | 2.28 (3.31) | 0-20 | 0-24 |
| Postnatal mooda | 12.92 (10.47) | 0-56 | 0-60 |
| Childbirth experienceb |  |  |  |
|  Participation | 2.89 (0.75) | 1-4 | 1-4 |
|  Own capacity | 2.45 (0.61) | 1-4 | 1-4 |
|  Professional support | 3.49 (0.64) | 1.6-4 | 1-4 |
|  Perceived safety | 2.95 (0.69) | 1-4 | 1-4 |
|  Total childbirth experience  | 2.95 (0.52) | 1.4-4 | 1-4 |
|  Positive feelings | 23.47 (12.03) | 0-50 | 0-50 |
|  Negative feelings | 29.18 (8.99) | 7-50 | 0-50 |
|  | **Total n** | **%** |  |
| Birth traumac Horror or helplessness experienced  | 172 | 42.0 |  |
|  Frightened about own or infant’s wellbeing | 136 | 33.2 |  |
|  Met both criteria  | 97 | 23.7 |  |

*Note.* a n=415,b n=412, c n=410

Table 4.

*Intercorrelations of study variables*

|  | **1** | **2** | **3**  | **4**  | **5**  | **6**  | **7**  | **8**  | **9**  | **10** | **11**  | **12**  | **13** | **14**  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Perfectionism (FMPS) |  | —  |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 2. Organisation (FMPS) |  | 0.22 | \*\*\*  | —  |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 3. Intolerance of uncertainty (IUS-12) |  | 0.57  | \*\*\*  | 0.20  | \*\*\*  | —  |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 4. Prenatal mood (CES-D) |  | 0.38  | \*\*\*  | -0.00  |  | 0.44  | \*\*\*  | —  |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 5. PTSS (IES-R) |  | 0.28  | \*\*\*  | 0.08  |  | 0.21  | \*\*\*  | 0.24  | \*\*\*  | —  |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 6. Postnatal mood (CES-D) |  | 0.32  | \*\*\*  | 0.02  |  | 0.29  | \*\*\*  | 0.47  | \*\*\*  | 0.60  | \*\*\*  | —  |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 7. Own capacity (CEQ) |  | -0.20  | \*\*\*  | -0.01  |  | -0.15  | \*\*  | -0.21  | \*\*\*  | -0.31  | \*\*\*  | -0.21  | \*\*\*  | —  |  |    |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 8. Professional support (CEQ) |  | -0.12  | \*  | 0.02  |  | -0.07  |  | -0.18  | \*\*\*  | -0.22  | \*\*\*  | -0.20  | \*\*\*  | 0.32  | \*\*\*  | —  |  |    |  |    |  |    |  |    |  |    |  |    |  |
| 9. Perceived safety (CEQ) |  | -0.23  | \*\*\*  | -0.02  |  | -0.15  | \*\*  | -0.21  | \*\*\*  | -0.43  | \*\*\*  | -0.29  | \*\*\*  | 0.76  | \*\*\*  | 0.49  | \*\*\*  | —  |  |    |  |    |  |    |  |    |  |    |  |
| 10. Participation (CEQ) |  | -0.10  | \*  | -0.00  |  | -0.09  |  | -0.15  | \*\*  | -0.17  | \*\*\*  | -0.15  | \*\*  | 0.40  | \*\*\*  | 0.38  | \*\*\*  | 0.40  | \*\*\*  | —  |  |    |  |    |  |    |  |    |  |
| 11. CEQ (Total)  |  | -0.21  | \*\*\*  | -0.00  |  | -0.15  | \*\*  | -0.24  | \*\*\*  | -0.36  | \*\*\*  | -0.27  | \*\*\*  | 0.79  | \*\*\*  | 0.70  | \*\*\*  | 0.85  | \*\*\*  | 0.73  | \*\*\*  | —  |  |    |  |    |  |    |  |
| 12. Negative feelings (EBS) |  | 0.25  | \*\*\*  | 0.06  |  | 0.28  | \*\*\*  | 0.32  | \*\*\*  | 0.38  | \*\*\*  | 0.36  | \*\*\*  | -0.57  | \*\*\*  | -0.19  | \*\*\*  | -0.58  | \*\*\*  | -0.17  | \*\*\*  | -0.48  | \*\*\*  | —  |  |    |  |    |  |
| 13. Positive feelings (EBS) |  | -0.16  | \*\*  | -0.01  |  | -0.09  |  | -0.13  | \*\*  | -0.19  | \*\*\*  | -0.21  | \*\*\*  | 0.65  | \*\*\*  | 0.29  | \*\*\*  | 0.59  | \*\*\*  | 0.30  | \*\*\*  | 0.59  | \*\*\*  | -0.34  | \*\*\*  | —  |  |    |  |
| 14. Birth trauma  |  | 0.18  | \*\*\*  | 0.06  |  | 0.18  | \*\*\*  | 0.20  | \*\*\*  | 0.39  | \*\*\*  | 0.28  | \*\*\*  | -0.50  | \*\*\*  | -0.28  | \*\*\*  | -0.56  | \*\*\*  | -0.31  | \*\*\*  | -0.55  | \*\*\*  | 0.40  | \*\*\*  | -0.31  | \*\*\*  | —  |  |

*Note*. All correlations represent Pearson’s r coefficients, with the exception of birth trauma (Slade et al. 2014) where Spearman’s Rank-Order Correlations were used. Strength of correlation coefficient 0.1-0.39=weak,

0.4-0.69=moderate, > 0.7=strong

FMPS = The Frost Multidimensional Perfectionism Scale; IUS-12 = The Intolerance of Uncertainty Scale; CES-D = The Center for Epidemiological Studies – Depression Scale; IES-R = The Impact of Event Scale; CEQ = Childbirth Experience Questionnaire; EBS = Experience of Birth Scale; PTSS = Posttraumatic Stress Symptoms

\* p < .05, \*\* p < .01, \*\*\* p < .001

Table 5.

*Hierarchical regressions of childbirth experience regressed onto prenatal mood, mode of birth, perfectionism and intolerance of uncertainty*

|  |  |  |  |
| --- | --- | --- | --- |
|  | **CEQ** | **Negative feelings (EBS)** | **Positive feelings (EBS)** |
|  | ***b*** | **SE** | **Std. β** | ***b*** | **SE** | **Std. β** | ***b*** | **SE** | **Std. β** |
| *Step 1* |  |  |  |  |  |  |  |  |  |
| Prenatal mood | -.015 | .003 | -.260\*\*\* | .340 | .047 | .331\*\*\* | -.196 | .067 | -.143\*\* |
| Mode of birth | -.305 | .047 | -.296\*\*\* | 3.69 | .826 | .205\*\*\* | -3.64 | 1.17 | -.151\*\* |
| *Step 2* |  |  |  |  |  |  |  |  |  |
| Perfectionism | -.004 | .002 | -.142\* | .039 | .028 | .078 | -.090 | .040 | -.134 |
| Intolerance of uncertainty | .002 | .003 | .026 | .140 | .058 | .137\* | .037 | .083 | .027 |

*Note.* CEQ = The Childbirth Experience Questionnaire; EBS = The Experience of Birth Scale

\* p < .05, \*\* p < .01, \*\*\* p < .001

CEQ model: *R2 =*.144*, F* (2, 408)=34.32, *p*<.001; Step 2: ∆ *R2* *=.*015, *F* (2, 406)=3.59, *p*=.029.

Negative feelings model: *R2 =*.142*, F* (2, 408)=33.83, *p*<.001; Step 2: ∆ *R2* *=.*029, *F* (2, 406)=7.11, *p*<.001.

Positive feelings model: *R2 =*.040*, F* (2, 408)=8.54, *p*<.001; Step 2: ∆ *R2* *=.*013, *F* (2, 406)=2.77, *p*=.064.

Table 6.

*Hierarchical regression of PTSS regressed onto prenatal mood, mode of birth, maternal complications since birth, perfectionism and intolerance of uncertainty*

|  |  |  |  |
| --- | --- | --- | --- |
|  | ***b*** | **SE** | **Std. β** |
| *Step 1* |  |  |  |
| Prenatal mood | .310 | .065 | .225\*\*\* |
| Mode of birth | 2.93 | 1.18 | .121\* |
| Maternal complications since birth | 4.47 | 1.33 | .165\*\*\* |
| *Step 2* |  |  |  |
| Perfectionism | .116 | .039 | .172\*\* |
| Intolerance of uncertainty | .072 | .080 | .053 |

*Note.* \* p < .05, \*\* p < .01, \*\*\* p < .001

PTSS model: *R2 =*.108*, F* (3, 406)=16.32, *p*<.001; Step 2: ∆ *R2* *=.*035, *F* (2, 404)=8.17, *p*<.001.