



Validation of the Dutch version of the Pregnancy Experience Scale

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ABSTRACT

The Pregnancy Experience Scale – Brief version (PES-Brief) assesses the frequency and intensity of the hassles and uplifts of pregnancy. This study aimed to assess the psychometric properties of the Dutch PES-Brief—*Beleving van Zwangerschap Schaal – verkorte versie (BZS-K)*—in a sample of healthy Dutch pregnant women. Participants ($n=115$) completed questionnaires twice during pregnancy, within a three-week interval. Factor analyses resulted in the expected two factors, one positive and one negative. The *BZS-K* showed sufficient internal consistency ($\alpha=.76$ for Hassles, $.83$ for Uplifts) and reproducibility of subscales (Intraclass correlation coefficients (ICC)=.72–.84). Concurrent validity with measures of pregnancy anxiety, general depression, anxiety and stress, and emotional well-being was established. We conclude that the *BZS-K* is a reliable, valid measure for assessment of women's perceptions of hassles and uplifts of pregnancy.

Introduction

Prenatal stress and anxiety can negatively affect birth outcomes and the developing child (van den Bergh et al., 2005; Dunkel Schetter and Tanner, 2012; Graignic-Philippe et al., 2014). Moreover, pregnancy itself can generate stressful experiences and specific anxieties that differ from general anxiety (Huizink et al., 2004). Yet, pregnancy also knows many uplifting experiences (DiPietro et al., 2004). In contrast to the wealth of knowledge about the effects of prenatal stress and anxiety on birth and child development, little is known about potentially protective influences of positive experiences or mood during pregnancy. Nonetheless, experiencing uplifts (e.g., laughing) seems to have a buffering effect on physiological stress responses to a psychosocial stressor in pregnant women, as evidenced by alpha-amylase and cortisol levels during a Trier Social Stress Test (Nierop et al., 2008). Additionally, studies found negative associations between optimism and distress (Lobel et al., 2002) or depression (Grote and Bledsoe, 2007), and positive associations between a positive attitude towards the pregnancy and the length of gestation (Voellmin et al., 2013). These studies thus suggest that a positive psychological state could act as a protective factor against stress and stress-related symptoms, and against negative pregnancy outcomes. In sum, both negative and positive pregnancy experiences may have a significant impact on pregnant women and their babies, hence, it is important to tap into both types of experiences for

research and practice purposes. In order to do this, however, valid and reliable instruments that measure these aspects need to be available.

Various questionnaires concerning pregnancy have been designed to measure negative aspects, for example the Pregnancy Related Anxiety Questionnaire – Revised 2 (Huizink et al., 2016). However, only a few questionnaires measure positive experiences, which are mostly not specific to pregnancy (e.g., the Life Orientation Test – Revised (Scheier et al., 1994), Positive And Negative Attitudes Scale (Watson et al., 1988)). To the authors' knowledge, the only questionnaires measuring both hassles and uplifts that are specific to pregnancy, are the Pregnancy Experience Scale (PES; DiPietro et al., 2004) and the Pregnancy Experience Scale – Brief version (PES-Brief; DiPietro et al., 2008). Of the two, the PES-Brief is easier to apply, because items are rated on either the negative or positive dimension instead of on both dimensions, and it is shorter (20 instead of 41 items). This makes the PES-Brief more preferable for research and practice purposes. To date, no validated Dutch version of the PES-Brief was available; therefore, the aim of the current study was to assess the psychometric properties of a Dutch version of the PES-Brief—*Beleving van Zwangerschap Schaal – verkorte versie (BZS-K; Veringa et al., 2013)*—in a sample of healthy Dutch pregnant women.

For the original PES-Brief, DiPietro et al. (2008) created the two subscales Uplifts and Hassles by selecting those items from the 41-item Pregnancy Experience Scale (DiPietro et al., 2004) that were endorsed most

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often as uplifts and hassles, respectively. No factor analysis was carried out in the study of DiPietro et al. (2008). In the current study, we examined whether the proposed subscales corresponded to the main factors of the *BZS-K*. With respect to validity, the *BZS-K* Hassle subscale was expected to correlate positively with pregnancy anxiety, general anxiety, stress and depressive symptoms, and negatively with positive emotional well-being. Correlations with the questionnaire on pregnancy anxiety were expected to be strongest, because its questions are related to pregnancy hassles. For the *BZS-K* Uplift subscale, correlations with the same questionnaires were expected in the opposite direction.

Methods

Translation of the Pregnancy Experience Scale – Brief version

Authorization allowing for translation of the Pregnancy Experience Scale – Brief version (DiPietro et al., 2008) from English to Dutch was obtained from the original authors. The recommendations made by Beaton et al. (2000) were applied for the translation. One midwife and one academic independently translated the questionnaires from English to Dutch. They then conducted a synthesis of these translations (T-12 version). Two academics independently conducted back-translations of T-12. An expert committee consisting of a midwife, two academics and all translators then compared the T-12 and original version on semantic, idiomatic, experiential, and conceptual equivalence. All committee members were fluent in both English and Dutch. A consensus was reached by the expert committee on all items of the Dutch questionnaire, called the ‘*Beleving van Zwangerschap Schaal – verkorte versie*’ (*BZS-K*; Veringa et al., 2013).

Field testing the BZS-K

Participants and recruitment

Currently, there is little theoretical basis for sample size calculation of exploratory factor analyses and no formula is yet available. We therefore aimed for a sample size of at least 100 participants, in accordance with two often used rules-of-thumb: 1) include at least 100 participants (Gorsuch, 1983) and 2) the subjects-to-variables ratio should not be lower than 5:1 (e.g., Bryant and Yarnold, 1995), which is 5 times 20 items for the *BZS-K*.

Participants were recruited via flyers and posters spread throughout various municipalities in the Netherlands in both rural and urban areas. Flyers and posters targeting pregnant women were placed in midwife practices, stores selling baby products, kindergartens/nurseries, and pregnancy course facilities. In response to the flyers and posters, 136 pregnant women requested additional information, which was sent to them via e-mail. A total of 115 pregnant women agreed to participate in the study. No descriptive information was available on the 21 women who did not want to participate.

No remuneration was provided for participation. Recruitment lasted from November 2013 till November 2014. Inclusion criteria were: age > 18 years, being pregnant, and having adequate command of the Dutch language. No exclusion criteria were used.

Procedure

Participants filled out a series of questionnaires online to assess demographics, pregnancy experience (*BZS-K*), pregnancy specific anxiety (PRAQ-R), general depression, anxiety and stress (DASS-21), and positive emotional well-being (WHO-5) (T1). A second series of questionnaires was sent three weeks later (T2) to assess reproducibility of the *BZS-K*, in accordance with the recommendations of Terwee et al. (2007). All participants gave online informed consent for participation and for data use. Ethical approval was obtained from the Scientific and Ethical Review Board of the Faculty of Behavior & Movement Sciences of Vrije Universiteit Amsterdam.

Materials

Pregnancy experience was measured using the *BZS-K* which measures maternal appraisal of exposures to daily, ongoing uplifts (10 items) and hassles (10 items) that are specific to pregnancy (for item content, see Table 3). Respondents indicated the extent to which specific experiences make them feel happy or unhappy at this moment, on a four-point Likert scale ranging from 0 (not at all) to 3 (a great deal). The original PES-Brief (DiPietro et al., 2008) yields six scores: (a) Frequency of Uplifts, (b) Frequency of Hassles, (c) Intensity of Uplifts, (d) Intensity of Hassles, (e) Frequency Ratio, and (f) Intensity Ratio. In this study, only the main scales (i.e., frequency and intensity of both uplifts and hassles) were used for validation.

Pregnancy anxiety was measured with the 10-item version of the Pregnancy Related Anxieties Questionnaire-Revised (PRAQ-R; Huizink et al., 2004). The PRAQ-R includes three subscales: (a) Fear of childbirth, (b) Fear of a handicapped child, and (c) Concern about own appearance. Participants indicated to what extent each statement applied to them on a five-point Likert scale, ranging from 1 (absolutely not applicable) to 5 (very applicable). Internal consistencies in the present sample were sufficient to good (Cronbach's α at T1 for Fear of childbirth = .72; Fear of handicapped child = .82; Concern about own appearance = .78; Total scale = .76).

Depression, anxiety and stress were measured with the well-validated Dutch Depression Anxiety Stress Scales (DASS-21; De Beurs et al., 2001). The DASS-21 consists of 21 statements divided into three subscales: (a) Depression, (b) Anxiety, and (c) Stress. Participants rated the extent to which statements applied to them over the previous week on a four-point Likert scale. Response options ranged from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time). Internal consistencies in this study were sufficient to good (Cronbach's α at T1 for Depression = .73; Anxiety = .66; and Stress = .81).

Emotional well-being was measured with the well-validated World Health Organization Five Well-being Index (WHO-5; Bech et al., 2003; Hajos et al., 2013), which consists of five positively phrased items. Participants indicate to what extent stated feelings were present in the last two weeks on a six-point Likert scale ranging from 0 (never) to 5 (all of the time). Internal consistency Cronbach's α at T1 was .84.

Statistical analyses

Preliminary analyses

Differences between participants with and without retest data were analyzed using a Pearson's chi-square test (categorical data), a Student's *t*-test or a Mann-Whitney *U* test. To be sure that the different timing of assessments in our sample did not influence our findings, differences between trimesters were tested using a one-way ANOVA.

Internal structure

Internal structure of the *BZS-K* was determined by principal factor analysis with oblique rotation in two steps. To determine the number of factors, the first analysis showed all factors with an Eigenvalue over 1. For the second analysis, the number of retained factors was fixed to two, based on the results of the first step and in accordance with the proposed scales of the PES-Brief (DiPietro et al., 2008). Cronbach's alpha was calculated for the resulting scales.

Concurrent validity

Concurrent validity was assessed using Pearson product moment correlations. Correlations corrected for attenuation due to measurement error are also given.

Reproducibility

Reproducibility was determined by Intraclass Correlation Coefficients between two repeated measures using a two-way model for average scores with absolute agreement.

For the internal structure and concurrent validity, T1 data were

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