Reliability and validity of the Cambridge Worry Scale in pregnant Turkish women

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ABSTRACT

Objective: this study examined the psychometric properties of the Cambridge Worry Scale (CWS) and assessed worries in pregnant Turkish women.
Design: a descriptive, cross sectional study.
Setting: the 35 Family Health Centres located in the Yıldırım sub-province of Bursa.
Instruments: the data were collected using the 'Pregnant Information Form', which determines the individual characteristics of the women and the 'CWS', which determines worries. The CWS is a Likert-type scale that consists of 16 items and has four sub-dimensions including the women's own health, relationships, socio-medical and socio-economic conditions. In the CWS, the total score is not calculated, and each article is evaluated in itself.
Findings: 200 pregnant women were recruited from December 2010 to November 2011. The mean age of the pregnant women was 25.92 ± 5.33, 43.0% had completed primary school, and 69.0% were not in paid employment. It has been determined that the content validity index for the Turkish form is 0.98 and that the internal consistency of Cronbach's alpha value of the scale is 0.795. As a result of exploratory factor analysis, it has been concluded that the factor loadings of the scale from 0.435 to 0.902, and it can be used in a particular dimension that is not divided into the components of the scale. On the basis of the confirmatory factor analysis, it has been determined that the Goodness of Fit Index of the one-factor structure is better than four-factor structure, but the values of the goodness fit index in each model are under 0.85 and the inaccuracy of the fit index is high.
Conclusions: the Turkish form of the CWS is an appropriate measurement tool in terms of language and content validity, and its single-factor structure can be applied to Turkish culture and can correctly identify the worries of pregnant women.

Introduction

Pregnancy is a period in one's life when various emotional fluctuations are experienced alongside happiness, a period in which all emotional, spiritual, and behavioural expectations, conflicts, hopes and desires regarding the role of a mother take front stage (Dülgerler et al., 2005; Erdem et al., 2010; Ertem and Sevil, 2010). While pregnancy and birth are physiological processes, they also put a profound burden and stress on the woman's body (Green et al., 2003; Karaçam and Ançel, 2009). The first trimester is a period of adapting to the fact of pregnancy (Akbaş, 2006).

In the second trimester, the baby is considered an independent individual (Körükcü et al., 2010). The third trimester is a period of psychological separation when the woman develops a curiosity about the baby (Georgsson Öhman et al., 2003).

During pregnancy, the woman undergoes biological and psychosocial changes, and along with these come the risk of encountering many sources of anxiety and stress (Vırıt et al., 2008; Karaçam and Ançel, 2009). Increased anxiety during pregnancy is caused by thoughts of having an anomalous baby, needing intervention during birth, being alone in a foreign environment, doing something wrong, and loss of life during pregnancy or birth. In addition, child care, changes in marital or family life, body image and effect on the relationship with one's spouse, financial difficulties, and added responsibilities may affect anxiety (Homer et al., 2002; Okanlı et al., 2003; Dülgerler et al., 2005; Kitapçıoğlu et al., 2008; Şahin and Kılıçarslan, 2010).

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Because anxiety during pregnancy affects the ongoing biological changes and their results, it is important to determine the anxiety levels of pregnant women (Chung et al., 2001; O'Connor et al., 2002; Green et al., 2003).The Spielberger State-Trait Anxiety Inventory (STAI) has been used in many studies of pregnant women (Grant and Davis, 1997; Green et al., 2003; Petersen et al., 2009). For example, Grant and Davis (1997) have used, STAI to examine maternal anxiety during the process of passage to parenthood. STAI is a relatively short measurement tool that is easy to apply. However, it should be noted that STAI measures anxiety at a given time, and it does not provide information on the specific subject of the anxieties (Green et al., 2003). Thus, Green et al. (2003) developed the Cambridge Worry Scale in 1990 in order to determine and evaluate the worries experienced during pregnancy. In this scale, the general sources of anxiety related to pregnancy were determined, and the scale was applied to 1072 women in the context of the 'Cambridge Parental Scanning Test'. The study proved that the scale was valid and reliable for use in pregnant populations (Green et al., 2003). The scale was later tested for validity and reliability in 2003 in Sweden, Germany, Spain and Greece (Georgsson Öhman et al., 2003; Petersen et al., 2009; Carmona Monge et al., 2012; Gourounti et al., 2012). The importance of using the CWS in studies has increased in recent years (Petersen et al., 2009). This scale has recently been used in many studies (Georgsson Öhman et al., 2004; Waldenström et al., 2004; Hildingsson and Radestad, 2005; Georgsson Öhman et al., 2007; Jomeen and Martin, 2008; Petersen et al., 2009).

This study was carried out to examine the psychometric of the CWS, which could be used in the pregnant Turkish women and determine the factors causing worry in women.

Methods

Sample and data collection

Before starting the study, written permission was obtained from Josephine Green, who developed CWS, the institution where the study would be performed. This study was approved by the local Ethical Board. The study, which was planned to be cross sectional, descriptive, and prospective, consisted of pregnant women registered to the 35 Family Health Centres located in the Yıldırım sub-province of Bursa. Data were collected using the 'Information Form for Pregnant Women', which is used to determine the personal characteristics of pregnant women, and the 'Cambridge Worry Scale'. The questionnaire was administered to a sample of 200 pregnant women in December 2010–November 2011. The inclusion criteria were that women were able to read and write in Turkish, did not have a history of mental disorders and agreed to participate in the study.

Instruments

The pregnant information form
The obstetric and demographic characteristics of women are determined. It contains six closed ended and seven open-ended questions for a total of 13 that are used to determine the age, level of education, employment status, occupation, status regarding health insurance, type of family, week of pregnancy in pregnant women, number of pregnancies, live births, miscarriages, abortions, and living children.

The Cambridge Worry Scale
Women's worries during pregnancy were measured with the CWS developed by Green et al. The scale was translated into Turkish by three people with proficiency in the language in order to perform a language validity test in accordance with translation

methodology. The obtained Turkish manuscript was then translated back into the original language (Gözüm and Aksayan, 2003). Minor changes based on the suggestions of the original developers of the scale were made, and the language equivalency and cultural adaptation of the scale were determined. It is a Likert-type scale scored by a six-point system from 'not a worry' (0) to 'major worry' (5). A higher score reflects higher worries. At the end of the scale is an open-ended question. The question enquires about worries not listed on the scale. The scale has a four-factor structure, which is socio-medical, socio-economical, health, and relationships. *The socio-medical* aspects include giving birth, going to hospital, internal examinations, coping with the new baby, and whether your partner will be with you for the birth. *The socio-economic* aspects include money problems, housing, problems with the law, employment problems, and giving up work. *The health* aspects include the possibility of miscarriage, the possibility of something being wrong with the baby, your own health and the health of someone else close to you. *Relationships* aspects include your relationships with your family/friends and relationships with your husband/partner. The scale was applied at the 16th, 22nd, and 35th weeks of pregnancy and the 6th week after birth. Although the scale consists of 16 items depending on the week of pregnancy, additional specific items can be added or removed as appropriate. In the 35th week an additional form consisting of 11 items was also applied (Green et al., 2003). Because the scale consists of 16 items for the 16th week and 17 items for the other weeks and a sample size of 5–10 times the number of items was the goal (Erefe, 2004), 170 pregnant women were included in the sample. Considering the potential for dropouts, 200 pregnant women formed the study group.

Test–retest of the Cambridge Worry Scale

To evaluate the scale's constancy through time, the scale was applied to 30 pregnant women four weeks later. The internal consistency reliability Cronbach's alpha value of the scale was 0.795.

Data analysis

The data were evaluated by coding in the Statistical Package for the Social Sciences (SPSS version 15 program). Descriptive statistics such as the means, standard deviations, and frequencies were used to present the demographic characteristics of participants. In the analysis, which was conducted according to expert opinions, the content validity ratio (CVR=15.67) and the content validity index (CVI=0.98) were determined. A test of sampling adequacy was computed by Kaiser–Meyer–Olkin (KMO) criterion, and the Barlett test of sphericity was applied to the data (Gözüm and Aksayan, 2003; Bayram, 2004; Erefe, 2004).

The structural validity of the CWS was evaluated. The test–retest fit analysis of the scale and its sub-dimensions were performed with the Pearson correlation test and with the *t* test in independent groups. The internal consistency of the scale and its sub-groups was determined using Cronbach's alpha coefficient. The item-factor relationship and the items and sub-groups explaining the original structure of the scale were tested using confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) (Erkorkmaz et al., 2013).

Findings

Descriptive characteristics of the pregnant women

The mean age of the pregnant women in our sample was 25.92 ± 5.33 (min=18–max=42). Table 1 shows the descriptive characteristics of the women.