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The validation of the Brief COPE in a Belgian perinatal population

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Abstract:	The Bried Coping Orientation to Problems Experienced (Brief-COPE) measures individuals' coping strategies. There is limited evidence on the psychometric properties of this measure in a perinatal population. The aim of this study is to explore the psychometric properties of the Brief COPE in pregnant and postpartum women. Method: The Dutch/Flemish version of the Brief-COPE was administrated in a sample of 754 antenatal (n = 432) and postpartum (n = 322) women living in Belgium. Exploratory factor analyses assessed the factor structure of the Brief-COPE and its convergent validity in an antenatal and postpartum sample. Cronbach's alpha was calculated for internal consistency reliability of the Brief-COPE items. Results: Exploratory factor analysis showed a five-factor antenatal model, presented by the subscales: 1. Active coping (α=.86), 2. Self-blame and Disengagement (α=.70), 3. Alcohol use (α=.96), 4. Humour (α=.79), and 5. Spirituality (α=.81). For the postpartum sample, a three-factor model emerged, presented by the subscales: 1. Active coping (α=.85), 2. Self-blame (α=.85) and 3. Spirituality (α=.74).

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Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper

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Authors' contributions

Yvonne Kuipers and Yannic van Gils contributed to the study conception and design. Material preparation, data collection and analysis were performed by Yannic van Gils, Charlotte Brosens, Laura Van den Branden, Roxanne Bleijenbergh, Sophie Rimaux and Yvonne Kuipers. The first draft of the manuscript was written by Yannic van Gils, and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript. Yvonne Kuipers supervised the study.

Consent to Participate (Ethics) & Consent to Publish (Ethics)

This study received ethical clearance from the Ethics Committee Medical, Social and Human Sciences Antwerp (Protocol Ref No. SHW_19_34/19/42/470). Participation was voluntary and informed consent for participation and dissemination of the study results was obtained (via box ticking) before the questionnaire could be completed. The answers were only accessible to the researchers. Privacy and confidentiality of the women were protected.

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ABSTRACT

Introduction: The Brief Coping Orientation to Problems Experienced (Brief-COPE) measures individuals' coping strategies. There is limited evidence on the psychometric properties of this measure in a perinatal population. The aim of this study is to explore the psychometric properties of the Brief COPE in pregnant and postpartum women.

Method: The Dutch/Flemish version of the Brief-COPE was administrated in a sample of 754 antenatal (n = 432) and postpartum (n = 322) women living in Belgium. Exploratory factor analyses assessed the factor structure of the Brief-COPE and its convergent validity in an antenatal and postpartum sample. Cronbach's alpha was calculated for internal consistency reliability of the Brief-COPE items.

Results: Exploratory factor analysis showed a five-factor antenatal model, presented by the subscales: 1. Active coping (α=.86), 2. Self-blame and Disengagement (α=.70), 3. Alcohol use (α=.96), 4. Humour (α=.79), and 5. Spirituality (α=.81). For the postpartum sample, a three-factor model emerged, presented by the subscales: 1. Active coping (α=.85), 2. Self-blame (α=.85) and 3. Spirituality (α=.74).

Conclusion: We observed differences and similarities in coping strategies between antenatal and postpartum women – information to be of merit for clinical practice and research. The Brief-COPE is a promising tool for the use of identifying women's coping strategies during pregnancy and the postpartum period, specifically for women in a similar cultural context as the women in this study, mainly in terms of antenatal alcohol use.

Key words: Antenatal, Coping, Factor analysis, Perinatal, Postpartum

INTRODUCTION

Pregnancy, childbirth, and the transition to parenthood involve major psychological and social demands and changes for parents (to be), to cope with their role and identity as a parent, partner, and their social identity (Rubin, 1967; Mercer, 2004; Razurel et al., 2011). These demands and changes are known to affect women's emotional wellbeing throughout the perinatal period, with varying prevalence rates of depression and anxiety between 17-20% and 17-32% respectively (Razurel et al., 2011; Fontein-Kuipers et al., 2015; Fontein-Kuipers et al., 2016; Dennis et al., 2017; Nakić Radoš et al., 2018; Shorey et al., 2018; Kuipers et al., 2019). Perinatal maternal emotional wellbeing is associated with various ways of coping (Furber et al., 2009; Van Bussel et al., 2009; Lau et al., 2015; Faisal-Cury et al., 2012; Guardino and Dunkel Schetter, 2014; Fontein-Kuipers et al., 2015). Coping is the process of executing a response after perceiving a stressful condition or threat, that is pregnancy or the first year after giving birth (Carver, Scheier, and Weintraub, 1989; Faramarzi et al., 2016) – with a distinction between maladaptive and adaptive coping behaviour**.** Significant associations between maladaptive coping mechanisms such as distancing, confronting and avoidant coping and antenatal depression have been reported (Van Bussel et al., 2009; Fontein-Kuipers et al., 2015; Lau et al., 2015). Additionally, the use of maladaptive coping in general, and avoidant coping behaviour specifically, have been associated with postpartum depression and anxiety, preterm birth, and impaired infant development (Guardino and Dunkel Schetter, 2014). Nevertheless, adaptive copings mechanisms during and after pregnancy, such as self-disclosure, seeking social support, and acceptance have also been reported (Furber et al., 2009; Faisal-Cury et al., 2012; Guardino and Dunkel Schetter, 2014; Fontein-Kuipers et al., 2015; Kuipers et al., 2019). Acknowledging the various (mal)adaptive coping mechanisms, a better understanding of coping with the unique challenges that women face during pregnancy and the postpartum period is needed (Guardino and Dunkel Schetter, 2014). Maladaptive coping may warrant specific clinical attention because of its association with affected maternal and infant wellbeing. These perinatal concerns lead to the necessity of a robust and consistent instrument to assess coping strategies in both an antenatal and postpartum population.

The Brief Coping Orientation to Problems Experienced (Brief-COPE) (Carver, 1997) is a widely used multidimensional measurement in healthcare research, intending to capture multiple types of coping styles and strategies (Doron et al., 2014; García et al., 2018). The Brief-COPE has also been used in studies involving pregnant women (Fontein-Kuipers et al., 2015; Ruiz et al., 2015; Peters et al., 2020). The scale has been derived from Lazarus and Folkman's model of coping (1984) and behavioural self-regulation (Carver, 1997). The Brief-Cope has 14 subscales, each consisting of two items: (1) Self-distraction which is a strategy concentrating on work or other activities to prevent to think about what is happening. (2) Active coping is actively trying to improve the situation. (3) Denial is refusing to believe what is happening. (4) Substance use is using alcohol, smoking or other substances (drugs) to feel better to get through the situation. (5) Emotional support is obtaining emotional support, comfort, and understanding of others and (6) Informational support is seeking help and advice from others about what to do. (7) Behavioural disengagement is giving up trying to deal with the situation. (8) Venting is a strategy to express negative feelings. (9) Positive reframing is trying to see the situation differently to make it seem more positive. (10) Planning is trying to come up with a strategy about what to do. (11) Humour is making fun or jokes about the situation. (12) Acceptance is putting up with the reality and learning to live with it. (13) Religion is finding comfort in religious or spiritual beliefs, including praying or meditating, and (14) Self-blame is criticizing oneself for what happened. Within these subscales, two overarching coping styles are presented: (1) Avoidant coping, which is known to be a less effective way to manage stress, and (2) Approach coping, which is associated with more helpful responses to adversity (Carver, 1997).

Despite the use of the Brief-COPE among perinatal women, there is limited evidence of the psychometric properties of this measure, as validation studies have been performed in small samples of pregnant women (Ruiz et al., 2015; Peters et al., 2020). Because of the need to better understand coping behaviour of women in the perinatal period and the scarcity of studies validating the Brief-COPE in both antenatal and postpartum samples, we considered it is necessary to explore the Brief-COPE's factor structure in a large sample of pregnant and postpartum women, to add to the existing evidence

and to provide a robust version of the scale for its use in an antenatal and a postpartum population. To our knowledge, no validation study has been performed in a Belgian perinatal population. The aim of the present study is to explore psychometric properties of the Brief-COPE in pregnant and postpartum women. This knowledge will help healthcare professionals who are involved in antenatal and postpartum care, to recognise women's perinatal coping styles and strategies, and to adjust health promotion activities in supporting women in using adequate coping mechanisms during the perinatal period.

MATERIAL AND METHODS

Study design

A cross-sectional study was performed, using an online survey. This study was part of the "PATH" (PerinAtal menTal Health) and the "What's AP Mama" research projects. These projects focus on perinatal interventions to adequately support women (how to cope) during the transition to motherhood, including maternal distress.

Sample and setting

We included pregnant and postpartum women living in Flanders, the Dutch-speaking part of Belgium. We included women with a good comprehension of the Dutch language, 18 years of age or older. There were no restrictions for parity, gestational age, ethnicity, or socio-economic status. We excluded women who had given birth less than six weeks and greater than one year. To determine the sample size for factor analysis, we considered a subjects-to-variable ratio of at least 5:1 (Bryant and Yarnold, as cited in Grimm and Yarnold, 2001; Costello and Osborne, 2005), implying five multiplied by 28 items for the Brief-COPE or including 10–15 participants per variable (Field, 2017). A priori, we aimed to include between a minimum of 140 and a maximum of 280/420 participants.

We used purposive and convenience sampling, utilizing varying strategies. Maternity hospitals, community midwives, psychologists, health visitors and nursery nurses, were informed about the study by e-mail and telephone and were provided with posters and flyers (including the link and QR-code to study) to inform potential participants about the study. In addition, the announcement and invitation to the study (including link and QR-code), were distributed via social media platforms such as Facebook, Twitter, and Instagram, allowing snowballing.

Dates of data collection

The data were collected between 9 December 2019 and 14 April 2020, using the Lime-survey online survey tool.

Outcome Measurements

We used self-completed questionnaires including sociodemographic and personal details such as: age, marital status, educational level, country of birth, employment status and obstetric variables such as weeks of gestation, number of pregnancies and number of births. Regarding religion, we asked participants if they identified themselves with a religion, spiritual tradition or belief system that influenced their view on, and way of life. Coping was assessed with the Brief-COPE: 28 items presenting the 14 different coping strategies (2 items paired per strategy) (Carver 1997). Participants were asked to rate the extent to which they typically use each of the coping strategies described to manage stressful situations on a four-point Likert scale ranging from 1 (not at all) to 4 (usually). Higher scores reflect a higher tendency to use the corresponding coping strategies: Active coping, Planning, Use of instrumental support, Positive reframing, Acceptance, Use of emotional support, Denial, Venting, Self-blame, Humour, Religion, Self-distraction, Substance use and Disengagement (Carver, 1997). According to Kato's meta-analysis (2015), the median of the Cronbach's alpha for the Brief-COPE

subscales was .68, ranging between .55 and .91.

Statistical analyses

We calculated descriptive statistics for the sociodemographic and personal details. Mean sum scores were calculated for items belonging to the different coping strategies. We calculated Cronbach's alpha (α) to measure internal consistency of the Brief-COPE items and the respective coping styles. The results were considered as acceptable at α ≥.7 (Bland and Altman, 1997). In accordance with the exploratory factor analysis conducted in the Brief-COPE development study (Carver, 1997), we performed a Principal Component Analysis (PCA) and an Exploratory Factor Analysis (EFA) in a sample of pregnant women and of postpartum women. The purpose of the PCA was to generate a pool of items that shows a relationship between the constructs of coping. For the next step we performed an EFA to determine the underlying structure and correlations among the items, to identify the items that load on particular factors, and to establish explained variance. In the analysis we used the oblique rotation Promax method because we assumed that the factors will be, in some extent, related (Matsunaga 2010). Before conducting factor analysis, the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's test were conducted to evaluate whether the sample was large enough to perform a reliable factor analysis. A KMO of .8 was considered as adequate and Bartlett's test was used with a significance level p = .05 (Field, 2017). Factor loading for each item was taken as the minimum of .40 (Costello and Osborne, 2005; Matsunaga, 2010; Field, 2017). Statistical Package for Social Sciences (SPSS) version 25 was used to analyse the data.

Statement of ethics

This study received ethical clearance from the Ethics Committee Medical, Social and Human Sciences Antwerp (Protocol Ref No. SHW_19_34/19/42/470). All participants gave their informed consent prior

to their inclusion in the study.

RESULTS

Participants

The total sample included 754 women, 432 pregnant women and 322 postpartum women (Table 1). The participants were between 18 and 47 years of age and most of the participants had more than one child (52.8%). Most of the participants were in a relationship (95.4%) and born in Belgium (92.8%). We observed no differences between the pregnant and the postpartum sample, except for age. The pregnant sample was younger in comparison to the postpartum sample ($t(752) = -2.973$, $p = .003$).

[Table 1]

Principal Component Analysis (PCA) & Exploratory Factor Analysis (EFA)

We conducted two sets of Principal Component Analysis (PCA) and Exploratory Factor Analysis (EFA), one on the antenatal sample and one on the postpartum sample. KMO .759 and KMO .734 showed a significance level of $p < .001$ for both the antenatal and postpartum sample. The PCA analysis retained eight components in the pregnant sample and nine components in the postpartum sample. One item (items 16) in the pregnant sample and four items in the postpartum sample (items 6, 12, 16 & 17) did not meet the cut-off of .40 (Matsunaga 2010) and were excluded for the EFA. The EFA was run for both samples (Table 2 and Table 3). In the pregnant sample, eight factors explained 66.33% of the variance. In the postpartum sample, nine factors were retained and explained 72.5% of the variance.

[Table 2]

[Table 3]

The overview of all factors for both samples is presented in Table 4. For the antenatal sample, Factor 1 (11 items) included items related to Use of support, Venting, Active coping, Planning and Positive reframing. Factor 2 (3 items) was related to Self-blame and Disengagement. The other four factors each have two items and included Alcohol use (Factor 3), humour (Factor 4), Spirituality (Factor 5) and Denial (Factor 6). Two factors consisted of one item and were therefore excluded. Internal consistency of the remaining six factors was: Factor 1 α = .857, Factor 2 α = .700, Factor 3 α = .963, Factor 4 α = .793, Factor 5 α = .808 and Factor 6 α = .580, showing acceptable internal consistency, except for Factor 6. The low internal consistency of Factor 6 resulted in a five-factor model for the antenatal sample.

In the postpartum sample, Factor 1 (11 items) included items related to Use of support, Venting, Active coping, Planning and Acceptance. Factor 2 (4 items) included Alcohol use and Humour. The other four factors each have two items and included Self-blame (Factor 3), Self-distraction (Factor 4), Spirituality (Factor 5) and Denial (Factor 6). Three factors consisted of none or one item and were therefore excluded. Internal consistency of the six factors was: Factor 1 α = .851, Factor 2 α = .612, Factor 3 α = .851, Factor 4 α = .425, Factor 5 α = .739 and Factor 6 α = .491. Acceptable internal consistency for Factor 1, Factor 3, and Factor 5, resulted in a three-factor model.

[Table 4]

DISCUSSION

In this study, we aimed to establish the construct validity of the Brief-COPE in an antenatal and postpartum sample. For the pregnant sample, a five-factor model emerged consisting of: 1. Active coping, 2. Self-blame and Disengagement, 3. Alcohol use, 4. Spirituality and 5. Humour. For the postpartum sample, a three-factor model emerged including: 1. Active coping, 2. Self-blame and 3. Spirituality. In both models, factors explained large amounts of variance. Our antenatal model showed to be more extensive than the two-factor model (active coping and disengagement) of Ruiz et al. (2015) and the three second-order factor model (disengagement, active coping, social support) of Peters et al. (2020). Our postpartum model consisted of factors that were also included in the antenatal model,

suggesting that women continue to use coping mechanisms during the postpartum period they used antenatally, suggesting that active coping, self-blame, and spirituality are core coping mechanisms during the perinatal period. However, when considering the strategies of the active coping style of pregnant and postpartum women, we observed a difference in strategies between both groups. While pregnant women focus on positive reframing, postpartum women focus on accepting the situation. Albeit that an active coping style is used by pregnant and postpartum women, our results suggest a nuance in active coping strategies during pregnancy and during the postpartum period up to one-year postpartum. The theory of maternal role attainment described by Rubin (1967) may explain the shift in focus from reframing to accepting one's role during the transition to motherhood. Maternal role attainment is described as a process leading to a woman's achievement of maternal role identity (Rubin, 1967). During this process, the woman's selective perception on self-system (ideal image, self-image, and body image) seems to play a role. Pregnant women may be more likely to focus on positive reframing of their self-system as a new role in life is imminent, while postpartum women may be more likely to focus on the acceptance of their self-system when the new role has emerged. Seemingly, the shift in focus represents the transition from imagining being a mother to the reality of being a mother with congruent coping. This might be of importance in the support of perinatal women (Van den Branden et al., 2022).

Self-blame is a coping strategy being used by both the pregnant and postpartum women in the sample. There might be several triggers for self-blame. Self-blame can be a result of stigma as women often feel pressured to look forward to motherhood or trying to balance postpartum work-family life balance according to contemporary socially desirable norms (Fernández et al., 2004; Thompson, 2006; Razurel et al., 2011; Hidaka, 2012; Pearson et al., 2018), but we do not know if or how these thought processes occurred among our participants. More research is needed to better understand the phenomenon of self-blame among pregnant and postpartum women.

Spirituality showed good validity in both samples. Spirituality is related to adaptive coping in pregnant

women, with overall positive effect towards pregnancy-specific stress and postpartum depression (Dolatian et al., 2017; Cheadle et al., 2018; Akbari et al., 2020). We did not ask our participants about a specific religion or whether they actively attended services, prayed, or meditated but we articulated religion more broadly in terms of belief system influencing their view on, and way of life. It could very well be that (future) parenthood triggered more essentialism perceptions and attitudes among the women in our study (Gaunt, as cited in Urlich and Cosell, 2009) or reflection on the meaning and quality of being pregnant and mothering (van Beeck, Pridham and Kuipers, 2022). Therefore, spirituality might be seen as a useful and adaptive coping strategy during pregnancy and the postpartum period.

Self-blame has been reported as a valid coping strategy in both of our samples. But, in the pregnant sample, self-blame loaded with disengagement. The latter is congruent with Peters et al. (2020) who reported that disengagement contained second-order factor loadings from self-blame. According to Garnefski et al. (2004) women are more inclined than men to use maladaptive coping strategies such as self-blame. Additionally, in a female general sample higher extent of self-blame are strongly related to higher depression scores. George et al. (2013) conducted a study examining anxiety prior and after birth and reported a significant association between ineffective coping strategies like self-blame and high levels of anxiety.

Alcohol use should be recognized as a coping mechanism for pregnant samples. In the studies of Ruiz et al. (2015) and in Peters et al. (2020), alcohol use was removed from their antenatal models because the researchers regarded alcohol to be irrelevant as pregnant women are counselled to eliminate alcohol, and thus not to drink – conveying a social judgment. In Belgium, however, alcohol use is accepted as a part of daily life, which might explain the relevance of this item in our sample. Alcohol use should be acknowledged as a coping strategy in pregnant women instead of assuming that women do not drink or smoke during pregnancy. More research is needed to verify this cultural aspect of the properties of the Brief-COPE.

Our findings have implications for prevention and intervention programmes focusing on reducing

maternal distress during pregnancy and postpartum. Prevention implies screening for perinatal coping behaviour to provide more adequate support to women with reduced emotional wellbeing or to advice women how to cope with pregnancy or the first year after birth as a preventative strategy (Van den Branden et al., 2022). Our results suggest that the Brief-COPE is a valid and reliable tool to assess coping mechanisms of pregnant and postpartum women. Preventative and therapeutic or counselling support focusing on improving adaptive coping strategies such as positive reframing and acceptance should be offered as soon as possible for pregnant and postpartum women presenting with emotional distress (George et al., 2013; Fontein-Kuipers et al., 2015).

Limitations

As with any study, our results need to be interpreted with caution given some limitations. First, the possibility of a self-selection bias needs to be considered. We do not know if participants significantly differ from non-responding pregnant and postpartum women. Although we believe that through our online recruitment strategies, voluntary participation increased, and that we have been able to conduct research on sensitive and confidential matters (Kılınç and Firat, 2007), generalization of our findings must be considered, mainly in terms of substance abuse. The Brief-COPE includes substance use, albeit that studies in pregnant populations often do not include substance use is because pregnant women are usually counselled no to smoke or to use alcohol or drugs. Additionally, women are often unwilling to report substance use during pregnancy (Ruiz et al., 2015). However, we believe to incorporate this factor for Belgian pregnant women, as alcohol is part of the Belgian culture, allowing the development and use of a coping model applicable for a Belgian pregnant population (WHO, 2016). Hence, generalisability is affected. This study focused specifically on coping strategies used by Belgium pregnant and postpartum women. Results may not be applicable to individuals or populations with other characteristics or backgrounds. Despite these limitations, the model fit, and Cronbach's alphas provide empirical support for a five-factor and three-factor model for respective pregnant and

postpartum women. Most of two-item subscales' Cronbach's alpha scores exceeded α.7 (Bland and Altman, 1997). Although Cronbach's' alpha is not recommended for two-item internal consistency, it has been used in several studies (García et al., 2018).

CONCLUSION

Validation of the Brief-COPE in a Belgian antenatal and postpartum population proposes a separate factor structure for both groups. Pregnant women appear to utilize more coping strategies than postpartum women, although the postpartum strategies are also used during pregnancy, showing consistency in coping with emotions during the transition to parenthood. The acknowledgment of the value of different coping strategies during pregnancy and postpartum is essential for pregnant and postpartum women and for health care providers and researchers. Despite the limitations of the study, specifically its Belgian cultural context shown by alcohol use affecting generalisability, the Brief-COPE is a promising tool for the use of identifying women's coping strategies during the perinatal period.

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Table 1: Characteristics participants

		TOTAL SAMPLE n = 754		PREGNANT WOMEN n = 432		POSTPARTUM WOMEN n = 322		
SOCIO-DEMOGRAPHICS								
		M	SD	M	SD	M	SD	p £
Age M (SD)		30.32	3.69	29.97	3.52	30.78	3.88	.003
		N	%	N	%	N	%	pµ
Employment	None	34	4.5	18	4.2	16	5	.325
	1hour-19hours	33	4.4	16	3.7	17	5.3	
	20hours-32hours	193	26.6	109	25.2	84	26.1	
	33hours-40hours	404	53.6	229	53.0	175	54.3	
	>40hours	90	11.9	60	13.9	30	9.3	
Educational level	Primary school	5	0.7	2	0.5	3	0.9	.284
	Secondary school	116	15.4	62	14.3	54	16.8	
	Higher education	356	47.2	215	49.8	141	43.8	
	Master, PhD	277	36.7	153	35.4	124	38.5	
Partner status	Married/co-habiting	719	95.4	415	96.1	304	94.4	.518
	Living apart together	5	0.7	2	0.5	3	0.9	
	Single/separate/divorced	30	4.0	15	3.4	15	4.7	
Religous	Yes	173	22.9	98	22.7	75	23.3	.845
Etnicity (born in)	Belgium	700	92.8	399	92.4	301	93.5	.509
	Western country	49	6.5	31	7.2	18	5.6	
	Non Western country	5	0.7	2	0.5	3	0.9	
OBSTETRIC HISTORY								
Trimester of pregnancy	1st trimester	/	/	58	13.7	/	/	
	2nd trimester	/	/	192	44.6	/	/	
	3rd trimester	/	/	181	41.8	/	/	
Gravidity	1	374	49.60	204	47.2	170	52.8	
	2	236	31.30	145	33.6	91	28.3	
	3	89	11.80	53	12.3	36	11.2	
	≥4	55	7.28	30	6.8	25	7.8	

Parity	0	430	57.03	221	51.2	209	64.9	
	1	252	33.42	168	38.9	84	26.1	
	2	65	8.62	41	9.5	24	7.5	
	3	6	0.80	2	0.5	4	1.2	
	4	1	0.13	/	/	1	0.3	

SD: Standard Deviation

µ Pearson Chi-Square

£ Independent sample t-test

Table 2: EFA antenatal sample (n = 432)

	Component							
	1	2	3	4	5	6	7	8
10. I've been trying to get advice or help from other people about what	.755	.083	-.315	-.162	.001	-.094	.049	-.006
15. I've been getting comfort and understanding from someone	.717	.232	-.41	-.193	.008	-.027	.099	-.023
5. I've been getting emotional support from others.	.704	.204	-.359	-.176	-.013	-.083	.139	-.056
23. I've been getting help and advice from other people.	.689	.173	-.343	-.094	.055	-.038	-.044	-.068
21. I've been expressing my negative feelings.	.642	.226	-.314	-.119	.022	.077	-.022	.205
7. I've been taking action to try to make the situation better	.634	-.171	.226	.239	-.128	-.183	-.087	.078
14. I've been trying to come up with a strategy about what to do.	.598	.031	.245	.238	-.058	-.114	-.239	.007
25. I've been thinking hard about what steps to take.	.562	.033	.221	.331	-.012	-.011	-.303	.04
9. I've been saying things to let my unpleasant feelings escape.	.548	.314	-.196	-.086	-.094	.046	-.001	.286
17. I've been looking for something good in what is happening.	.528	-.352	.314	-.045	.047	.08	.165	-.007
12. I've been trying to see it in a different light, to make it seem more positive.	.516	-.287	.265	.06	-.101	.037	.205	-.111
26. I've been blaming myself for things that happened	-.125	.686	.016	.36	.013	.071	-.341	.072
13. I've been criticizing myself.	-.082	.672	.021	.345	-.037	.15	-0.62	.121
6. I've been giving up trying to deal with it.	-.272	.516	-.086	-.081	.057	.251	.182	.213
20. I've been accepting the reality of the fact that it has happened.	.346	-.451	.338	-.072	-.23	.004	-.153	.342
4. I've been using alcohol or other drugs to make myself feel better	-.053	.469	.543	-.41	.002	-.515	.01	.009

11. I've been using alcohol or other drugs to help me get through it.	-.063	.468	.538	-.403	-.022	-.511	-.003	.009
2. I've been concentrating my efforts on doing something about the situation I'm in.	.471	-.137	.145	.495	-.01	-.124	.046	-.125
22. I've been trying to find comfort in my religion or spiritual beliefs.	.212	-.044	.177	.019	.842	.027	.008	-.03
27. I've been praying or meditating	.258	.041	.162	.034	.814	-.083	-.053	-.087
28. I've been making fun of the situation.	.239	.238	.466	-.289	.012	.594	-.051	-.103
18. I've been making jokes about it.	.307	.033	.478	-.348	.017	.571	-.086	-.139
3. I've been saying to myself "this isn't real".	.078	.257	.178	.399	.01	.054	.639	.098
8. I've been refusing to believe that it has happened.	-.006	.435	.263	.332	.024	.059	.49	.208
1. I've been turning to work or other activities to take my mind off things	.205	.192	.229	.349	-.264	-.036	.036	-.543
24. I've been learning to live with it.	.194	-.155	.366	-.096	-.205	.045	.032	.469
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	.164	.356	.024	-.227	-.335	.061	.09	-.419
Eigenvalues	5.207	2.875	2.497	1.847	1.701	1.413	1.237	1.133
Initial eigenvalues % of variance	19.29	10.65	9.25	6.84	6.30	5.24	4.58	4.19
Cronbach Alpha	0.857	0.700	0.963	/	0.793	0.808	0.580	/
Extraction Method: Principal Component Analysis. *a 8 components extracted.*								

Table 3: EFA postpartum sample (n = 322)

	Component								
	1	2	3	4	5	6	7	8	9
15. I've been getting comfort and understanding from someone	.778	.261	-.198	.06	-.154	-.026	.009	-.037	.191
5. I've been getting emotional support from others.	.767	.232	-.218	-.007	-.231	-.059	.022	-.033	.064
23. I've been getting help and advice from other people.	.743	.12	-.25	.05	-.178	-.145	.149	-.024	.064
10. I've been trying to get advice or help from other people about what	.739	.165	-.297	.054	-.129	-.011	.109	-.058	-.004
7. I've been taking action to try to make the situation better	.635	-.355	.009	.026	.088	-.059	.214	.163	-.191
9. I've been saying things to let my unpleasant feelings escape.	.599	.34	-.055	-.025	.043	.006	-.218	-.082	-.063
21. I've been expressing my negative feelings.	.583	.266	-.129	.073	-.138	.026	-.244	-.075	-.002
14. I've been trying to come up with a strategy about what to do.	.555	-.296	.204	.042	.339	-.135	.098	-.106	-.232
25. I've been thinking hard about what steps to take.	.553	-.141	.198	.041	.327	-.201	.102	-.099	-.158
2. I've been concentrating my efforts on doing something about the situation I'm in.	.457	-.324	.201	-.204	.292	-.023	.218	.313	-.17
26. I've been blaming myself for things that happened	-.035	.59	.315	-.329	.319	-.418	-.071	-.051	.066
13. I've been criticizing myself.	-.042	.583	.372	-.357	.285	-.367	-.081	-.04	.013
20. I've been accepting the reality of the fact that it has happened.	.433	-.521	.178	-.078	.019	-.043	-.081	-.005	.4
11. I've been using alcohol or other drugs to help me get through it.	-.025	.261	.583	.516	-.291	-.096	.3	.173	.041
28. I've been making fun of the situation.	.233	-.176	.581	-.195	-.309	.138	-.367	-.277	-.162
4. I've been using alcohol or other drugs to make myself feel better	-.009	.272	.567	.54	-.361	-.086	.24	.113	.04

18. I've been making jokes about it.	.361	-.295	.554	-.169	-.322	.216	-.233	-.23	-.115
22. I've been trying to find comfort in my religion or spiritual beliefs.	.133	.014	.003	.592	.53	.222	-.208	-.031	.081
27. I've been praying or meditating	.194	.059	.127	.58	.513	.133	-.319	-.01	.018
3. I've been saying to myself "this isn't real".	.187	.21	.149	-.187	.15	.504	.452	-.251	.068
8. I've been refusing to believe that it has happened.	-.069	.397	.073	-.14	.242	.47	.351	-.325	.024
1. I've been turning to work or other activities to take my mind off things	.284	.148	.161	-.353	.065	.308	.021	.599	-.153
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	.188	.386	.078	-.105	-.046	.386	-.355	.416	.125
24. I've been learning to live with it.	.155	-.317	.256	-.197	.145	-.03	.069	.052	.75
Eigenvalues	4.827	2.386	2.095	1.843	1.710	1.269	1.212	1.045	1.013
Initial eigenvalues % of variance	20.11	9.94	8.73	7.68	7.13	5.29	5.05	4.35	4.22
Cronbach Alpha	0.851	0.851	0.612	0.739	/	0.491		0.425	/
Extraction Method: Principal Component Analysis. *a 9 components extracted.*									

Table 4: Overview of the factors per antenatal and postpartum sample

ANTENATAL SAMPLE n = 432			POSTPARTUM SAMPLE n = 322		
Items	factor loading	α	Items	factor loading	α
FACTOR 1 : ACTIVE COPING		.857	FACTOR 1 : ACTIVE COPING		.851
10. I've been trying to get advice or help from other people about what	.755		15. I've been getting comfort and understanding from someone	.778	
15. I've been getting comfort and understanding from someone	.717		5. I've been getting emotional support from others.	.767	
5. I've been getting emotional support from others.	.704		23. I've been getting help and advice from other people.	.743	
23. I've been getting help and advice from other people.	.689		10. I've been trying to get advice or help from other people about what	.739	
21. I've been expressing my negative feelings.	.642		7. I've been taking action to try to make the situation better	.635	
7. I've been taking action to try to make the situation better	.634		9. I've been saying things to let my unpleasant feelings escape.	.599	
14. I've been trying to come up with a strategy about what to do.	.598		21. I've been expressing my negative feelings.	.583	
25. I've been thinking hard about what steps to take.	.562		14. I've been trying to come up with a strategy about what to do.	.555	
9. I've been saying things to let my unpleasant feelings escape.	.548		25. I've been thinking hard about what steps to take.	.553	
17. I've been looking for something good in what is happening.	.528		2. I've been concentrating my efforts on doing something about the situation I'm in.	.457	
12. I've been trying to see it in a different light, to make it seem more positive.	.516		20. I've been accepting the reality of the fact that it has happened.	.433	

FACTOR 2 : SELF BLAME & DISENGAGEMENT		.700	FACTOR 2 : ALCOHOL USE & HUMOUR		.612
26. I've been blaming myself for things that happened	.686		11. I've been using alcohol or other drugs to help me get through it.	.583	
13. I've been criticizing myself.	.672		28. I've been making fun of the situation.	.581	
6. I've been giving up trying to deal with it.	.516		4. I've been using alcohol or other drugs to make myself feel better	.567	
			18. I've been making jokes about it.	.554	
FACTOR 3 : ALCOHOL USE		.963	FACTOR 3 : SELF BLAME		.851
4. I've been using alcohol or other drugs to make myself feel better	.543		26. I've been blaming myself for things that happened	.59	
11. I've been using alcohol or other drugs to help me get through it.	.538		13. I've been criticizing myself.	.583	
FACTOR 4 : HUMOUR		.808	FACTOR 4 : SELF DISTRACTION		.425
28. I've been making fun of the situation.	.842		1. I've been turning to work or other activities to take my mind off things	.599	
18. I've been making jokes about it.	.814		19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	.416	
FACTOR 5 : SPIRITUALITY		.793	FACTOR 5 : SPIRITUALITY		.739
22. I've been trying to find comfort in my religion or spiritual beliefs.	.594		22. I've been trying to find comfort in my religion or spiritual beliefs.	.592	
27. I've been praying or meditating	.571		27. I've been praying or meditating	.58	
FACTOR 6 : DENIAL		.580	FACTOR 6 : DENIAL		.491
3. I've been saying to myself "this isn't real".	.639		3. I've been saying to myself "this isn't real".	.504	
8. I've been refusing to believe that it has happened.	.49		8. I've been refusing to believe that it has happened.	.47	