

What is the role played by pregnancy in the construction of a woman's identity?

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THE CES IN ITALIAN PREGNANT WOMEN

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Abstract

Objective The present work aimed to evaluate: (a) the psychometric properties of the Centrality of Event Scale in Italian primiparous and multiparous women; (b) individual differences in those demographic variables that influence change in women's identity and the maternal role acquisition during pregnancy; (c) the association between the extent to which pregnancy has an impact on woman's life story and identity and prenatal attachment; (c) how the centrality of the pregnancy event is related to the experience of PTSD during pregnancy. **Background** Pregnancy is a crucial phase in women's life that involves many changes for a woman's role and identity. **Methods** 319 pregnant women were assessed during the third trimester of pregnancy. **Results** Exploratory Factor Analyses confirmed a one-factor solution of the CES. Moreover, the perception of pregnancy as central in women's lives is significantly related to prenatal attachment. Finally, the perception of pregnancy as central in women's lives is positively correlated to PTSD symptoms. **Conclusion** Our findings provide evidence on the validity of the scale with pregnant women samples, which may contribute for a better understanding of the impact of pregnancy on women's identity and life story, as well as the underlying psychological challenges related to pregnancy.

Keywords: Pregnancy, Transition to motherhood, Centrality of Event, Post-Traumatic Stress Disorder, Identity

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What is the role played by pregnancy in the construction of a woman's identity?

The transition to motherhood could be seen as a complex relational and transformative process for women that can appear as a turning point for their life (Laney et al., 2015). As suggested by existing research on identity and narrative identity, it is possible to define "turning points" those episodes that involve a substantial change in an individual's life (e.g., McAdams, 1993). These turning points are essential for self-development and self-understanding mostly because the narrative construction of these turning point personal experiences might be more relevant than the event itself (Bruner, 1994; McLean & Pratt, 2006). Turning point narratives are generally events in which one understands something new about oneself and are crucial for identity development (McLean & Pratt, 2006).

When women get pregnant, they have to face a complex process that may involve a period of identity instability and self-loss (Hennekam, 2016). As suggested by Smith's findings (1999), pregnancy has important preparatory significance for women mainly because they can start to think about as themselves as a mother while they are still pregnant. Especially during the first-child pregnancy, women have to reframe their identity, understanding how their autonomy, their physical appearance and their roles influence their identities (Laney et al., 2015). Also, the transition that occurs upon a further pregnancy has been recognised as a relevant phase for women' identity. Both women's and mothers' identity and behaviours evolve and change with each pregnancy, since pregnancy, childbirth, and childcare environments can be different for each child (Chapman & Hart, 2017).

During pregnancy women also have to redefine their understandings of themselves and who they are in relationship to other people and other roles (Steinberg, 2005; Ladge, Clair and Greenberg, 2012; Ladge & Greenberg, 2015). For

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example, in the fields of organisational behaviour and organisational psychology, there is a growing body of research that focuses on pregnancy and women's working roles. As suggested by Ladge and colleagues (2012), pregnancy provokes in a working woman a non-work identity transition since she starts to think about herself as a mother-to-be. Pregnancy acts as a triggering event that brings with itself cross-domain identity doubts about the impact of an emerging maternal identity on a woman's professional identity (Ladge et al., 2012). On the one hand, becoming a mother can fulfil the expectations of women's social roles (Eagly, 1987; Glick & Fiske, 2001), on the other hand, the role and expectations of motherhood are inconsistent with the expectations of ideal workers (Ridgeway & Correll, 2004; King & Botsford, 2009). As suggested by Millward (2006), once women get pregnant, they are treated as mothers-to-be rather more than as valid employees by the organisation in which they also work before they became mothers.

Starting from these premises, we can say that pregnancy is a time of considerable psychological complexity and a vital phase of a woman's life (Ammanniti, Tambelli, & Odoroso, 2013; Della Vedova, 2009). Moreover, some evidence suggested that woman's identity reworking during pregnancy is associated both to mothers' mental dynamics and the quality of mother-baby relationship in the postpartum period (Ammaniti & Tambelli, 2010; Lis, Zennaro, Mazzeschi, & Pinto, 2004; Raphael-Leff, 2010). To our knowledge, most of the studies that investigated the development of woman's identity during pregnancy are mostly qualitative studies. However, we thought it was essential to understand how to measure these aspects also through a quantitative approach. This interest is connected to the possibility of recognising possible woman's vulnerabilities and risk factors that could negatively interfere with the postnatal maternal role in a clinical setting. We believed that it is

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essential to find a measure that allows practitioners to include the assessment of the role of pregnancy as a turning point for the construction of mother's identity in the psychological screening of women during pregnancy to better support them in this crucial period with target intervention (Chandra, Desai, & Satyanarayana, 2010).

The Centrality of Event Scale for pregnant women

As far as we know to date, there does not seem to be a valid tool that investigates the role of pregnancy as a turning point for the construction of a woman's identity. We considered that the Centrality of Event Scale (CES; Berntsen and Rubin, 2006) could be a useful tool for to measure the extent to which pregnancy represents a salient central point in women's life story and an essential event for women's identity. Despite the CES was initially designed to explore the role of the traumatic and stressful event for life story and identity in Posttraumatic Stress Disorder (PTSD) (Berntsen and Rubin, 2006), recent studies used this tool as a general measure of the perceived self-relevance of crucial events on personal identity and life story (Berntsen, Rubin, & Siegler, 2011; Broadbridge, 2018). Moreover, Scherman and colleagues (2014) suggested that different positive events are associated with transitional moments in life, such as having children, and are generally associated to the cultural life script and narratives (Bersten & Rubin, 2004). In particular, with the CES it is possible to assess how a crucial life event may become interconnected with personal identity, evaluating the extent to which the event becomes a central component of identity and a turning point in the personal life story. Therefore, we believed that the CES might allow us to measure the extent to which pregnancy can become a salient central point in a women's life story and a crucial event for women's identity. Since, to our knowledge, this tool has never been used in samples of pregnant women, we have identified ~~three~~four main objectives to provide an ultimate

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tool to screen the psychological status of pregnant women.

First, we explored the psychometric properties of the Centrality of Event Scale (CES; Berntsen and Rubin, 2006) in an Italian sample of pregnant woman assessing the factor structure of the CES. ~~We investigated the different demographic variables that influence change in women's identity and the maternal role acquisition (parity, woman's age, marital status and level of education)~~

~~, too.~~

~~Second~~Second, individual differences in those demographic variables that influence change in women's identity and the maternal role acquisition were examined for the CES score by parity, woman's age, marital status and level of education.

Third, we would like to systematically evaluate the association between the extent to which pregnancy has an impact on a woman's life story and identity, that are key elements of the CES, and the intensity of prenatal attachment during pregnancy. We try to control for possible implications of pregnancy-related variables such as parity, complications during pregnancy, previous experience of miscarriage, prior experience of voluntary interruption of pregnancy and mode of conception.

In fact, during pregnancy, the woman's central task is often developing a feeling of connection to the child and also recognising her separateness from him or her (Ammaniti, Candelori, Pola, & Tambelli, 1999; Raphael-Leff, 2010; Slade, Cohen, Sadler, & Miller, 2009; Cannella, 2005; Mascheroni & Ionio, 2019).

~~Third~~Fourth, we would like to investigate how the experience of PTSD symptoms during pregnancy in women with stressful or traumatic events in their life is related to the extent to which pregnancy represents a salient central point in women's life story and a significant event for women's identity. , measuring these

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aspects with the CES. Data from the Pregnancy Risk Assessment Monitoring System (Mukherjee et al., 2017) found that 35% of pregnant women experienced multiple stressors related to illness or death, stressors that can stimulate emotions and feelings which might cause maladaptive symptoms associated with the onset of PTSD symptoms in the perinatal period (Khoramroudi, 2018),

Method

Participants

The sample consisted of 319 pregnant women assessed during the third trimester of pregnancy ($M = 34.90$ weeks of gestation, $SD = 2.85$). Data were collected over 24 months from January 2017 to January 2019 recruited in the Obstetrics and Gynaecology Department at ASST Bergamo Est Bergamo, Italy ($n = 137$) and Santa Chiara University Hospital of Pisa, Italy ($n = 182$). Women were excluded from participating in the study if they were a non-Italian speaker and their foetus had severe genetic conditions or congenital abnormalities that could affect foetal growth and development.

Insert Table 1 about here

Measures

Socio-demographic and anamnestic questionnaire. Mothers were asked information about demographic variables and experiences linked to the previous and current pregnancy.

Centrality of Event Scale (CES; Berntsen & Rubin, 2006). The CES was used to measure the extent to which the current pregnancy is central to women’s life story and personal identity. In Berntsen and Rubin (2006) validation study, Cronbach’s alpha reliability for the CES was $\alpha = .94$.

Prenatal Attachment Inventory (PAI; Muller, 1993). The PAI was used to

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measure prenatal attachment (how often the mother has loving thoughts or behaves affectionately toward the fetus). In Muller (1993) validation study Cronbach's alpha reliability for the PAI was $\alpha = .81$). In the present study, Cronbach's alpha was .88.

Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1997). The IES-R was used to measure the presence of PTSD symptomatology (Avoidance, Intrusion and Hyperarousal) in those women who have reported stressful or traumatic events in their life. In the present study, Cronbach's alphas were: .82 for Avoidance, .85 for Intrusion, .77 for Hyperarousal and .90 for the Total.

Procedure

All study procedures were approved by the ASST Bergamo Est ethics committee and by the Santa Chiara University Hospital ethics committee, which required informed consent from each participant. After the antenatal classes session or before the medical visit of the 3rd trimester of gestation, pregnant women were asked to complete the questionnaires. All participants provided written informed consent and permitted to use their anonymous data in compliance with current legislation regarding the protection of personal data (GDPR, EU regulation 2016/679).

Results

Psychometric properties

Data were analysed using SPSS Statistics Release 24.0. Since the original CES article (Berntsen & Rubin, 2006) showed the unifactoriality of the scale, but other study reported a three-factor solution, we firstly used Horn's (1965) parallel analysis and Cattell's (1966) scree method to determine the number of components of the CES in our sample of Italian pregnant woman. The scree plot in Figure 1 shows a clear inflexion at component 2 that justifies retaining only component 1.

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Insert Figure 1 about here

Additionally, around component 2, the eigenvalues for the real data are lower than eigenvalues for the random data. The final analysis retained only one factor. We run an Exploratory Factor Analysis (EFA) to test the one-factor solution. In particular, a Principle Component Analysis (PCA) was performed as the method for factor extraction. This factor alone accounted for 36% of the variance. Table 2 shows the factor loadings. Only one item, Item 10, showed a factor loading lower than 0.4, so we decided to drop it out (Costello & Osborne, 2005).

Insert Table 2 about here

After deleting Item 10, Cronbach's alpha reliability coefficient was computed considering the one-factor solution, and the α was .90. Since the 19-item scale had very good reliability, we decide to construct a shorter scale as suggested by Berntsen and Rubin (2006). As reported in Table 3, the seven questions with the highest correlations with the sum of the other questions were chosen. The Cronbach's alpha reliability coefficients of the 7-item scale were .84.

Insert Table 3 about here

Individual differences in the CES score

We also evaluate differences between the CES scores considering parity, woman's age, marital status and level of education with a T-test for independent sample, Pearson's correlations analyses and a One-way ANOVA, respectively. Multiparous women reported significantly higher CES scores than primiparous women (primiparous: $M = 66.43$, $DS = 13.69$; multiparous: $M = 69.50$, $DS = 11.11$; $T = -2.01$ $p = .046$). A significant negative correlation was found between CES score and woman's age ($r = -.155$, $p = .007$). The One-way ANOVA shows a significant difference considering woman's level of education ($F = 3.445$, $p = .009$). Post-hoc

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analyses have shown a significant difference between Secondary school ($M = 71,04$, $DS = 10,84$) and both Master's ($M = 65,24$, $DS = 12,34$) and Postgraduate ($M = 64,36$, $DS = 11,14$) and between High school ($M = 70,11$, $DS = 11,91$) and both Master's ($M = 65,24$, $DS = 12,34$) and Postgraduate ($M = 64,36$, $DS = 11,14$).

Centrality of Event scale and prenatal attachment

To evaluate the relationship between the extent to which pregnancy impact on woman's life story and identity and the intensity of prenatal attachment, linear regression analysis were run. The performed analyse showed that the model tested with CES scores as predictor variables and PAI scores as outcome variable was significant ($R^2 = .15$, $F = 53.23$, $p = .000$, $B = .266$, $SE = .036$, $\beta = .384$). This results indicated that women that perceived pregnancy as a crucial phase for their life story and identity reported a higher level of prenatal attachment.

Moreover, to test which pregnancy-related variables predict maternal prenatal attachment in interaction with the CES it was performed a series of hierarchal multiple regression analyses to evaluate possible main (Model 1) or moderator (Model 2) effects on the association between the CES and prenatal attachment. All the predictors were independently tested for main or moderator effects in separate regression equations. In particular, it was explored the role play by (a) parity (b) complications during pregnancy, (c) previous experience of miscarriage, (d) prior experience of abortion, (e) mode of conception.

Insert Table 4 about here

As reported in Table 4, the presence of complication during pregnancy predict the lower level of prenatal attachment. Model 1 was significant not only for the variables CES score, but also for the variable complications during pregnancy, but this model was not improved by adding the CES score \times complications during

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pregnancy interaction variable. The other models were developed neither by adding to the variables CES score the variables parity, complications during pregnancy, previous experience of miscarriage, prior experience of abortion, mode of conception, nor the interaction variables. In this model, the CES score was the only predictor of prenatal attachment.

Centrality of Event scale and PTSD symptomatology

Pearson's correlations analyses were run to investigate possible correlations between CES scores and IES-R scores in those women who have reported stressful or traumatic events in their life history (54% of the sample). The CES score significantly correlate with the presence of PTSD symptomatology ($r = .190, p = .011$), in particular of symptoms of intrusion ($r = .169, p = .025$) and avoidance ($r = .163, p = .032$).

Discussion

Pregnancy is a time of psychological challenges and a crucial phase of a woman's life (Ammanniti, Tambelli, & Odoroso, 2013; Della Vedova, 2009). During pregnancy, the woman has to face a reworking process for her identity that is fundamental for the acquisition of maternal role and the building of the mother-child relationship in the postnatal period (Ammaniti & Tambelli, 2010; Lis, Zennaro, Mazzeschi, & Pinto, 2004; Raphael-Leff, 2010). For better support women during pregnancy with target intervention, it becomes fundamental to understand and evaluate the role of pregnancy in the construction of a mother's identity (Chandra, Desai, & Satyanarayana, 2010). To investigate the extent to which pregnancy represents a salient point in women's life story and a crucial event for women's identity, we identified the CES as standardised tool that could allow us to evaluate the perceived self-relevance of pregnancy on women's identity and life story (Berntsen,

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Rubin, & Siegler, 2011; Broadbridge, 2018).

Thus, the first aim of the present work was to evaluate the psychometric properties of the CES in a sample of Italian pregnant woman. As showed in Berntsen & Rubin's (2006) original article, the CES's one-factor structure was confirmed by a Principal Components Analysis. The exploratory analysis also suggested dropping-out an item, item 10. Without this item, the scales showed good internal consistency. Since the scale demonstrated high reliability, we also constructed a shorter scale composed of 7 items. Also, the short 7-item scale was reliable in our sample of pregnant women, suggesting that this scale could also be used in assessing the centrality of pregnancy event for women during the prenatal period.

Moreover, to further explore the psychometric properties of this measure in a sample of pregnant women, we investigated possible differences in the perception of pregnancy as a central point for women's identity considering different demographic factors. Our results suggested that the extent to which pregnancy has an impact on a woman's life story and identity is greater in multiparous women. As previous work indicated, the fact that a woman has acquired mother's identity and maternal role in the first pregnancy does not imply that the transition to motherhood of another child will be irrelevant (Chapman & Hart, 2017). Since each child and childbearing experience are unique, women's identity needs to be renegotiated during each pregnancy, resulting in new women's role and identity dimensions and expanded maternal roles (Chapman & Hart, 2017). We also found that pregnancy is perceived as a more central event in younger women with a lower educational level. Despite the need for further investigation, it seems that these results are in line with previous findings in the fields of organisational behaviour and organisational psychology (Ladge et al., 2012; Millward 2006). As regards the age of the mothers, our results are

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in line with previous studies that have shown that younger women begin to feel like mothers and build the mother-child relationship before older women (Siddiqui & Haggloff, 2000; Malm, Hildingsson, Rubertsson, Radestad and Lindgren, 2017).

Moreover, also about the level of education, our results are following previous findings. Maas et al. (2014) have highlighted that a lower level of education in mothers-to-be was related to more positive expectations for their role as mothers and the mother-child relationship, while a higher level of education was associated to more negative expectations. According to the authors, women with a higher level of education would be more aware of the need for time, compared to the time available, to dedicate both to their work and especially in their role as a mother (Maas et al., 2014).

We also investigated the association between the extent to which pregnancy has an impact on a woman's life story and identity and the intensity of prenatal attachment during the third trimester of pregnancy. As suggested by previous studies we found that the more the woman perceived pregnancy as a central event for her life story and identity, the higher was the intensity of prenatal attachment (Cannella, 2005; Mascheroni & Ionio, 2019). Moreover, we also evaluated if some pregnancy-related variables played a role in this association. Our results confirmed that the presence of complication during pregnancy is generally associated with a weaker representation of themselves as mothers, as well as of the child-to-be (Benute et al., 2013). The concerns represented by the complications during pregnancy associated with the uncertainty for the pregnancy outcomes may contribute to slow down the attachment process during pregnancies (Beauquier-Maccotta et al., 2016).

Finally, since PTSD during pregnancy is usually considered a risk factor for women in the postpartum period (Howard et al., 2014; Ionio & Di Blasio, 2014) we

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investigated if there was an association between PTSD symptomatology and the CES.

To our knowledge, only one study has investigated both PTSD symptomatology and the centrality of pregnancy in pregnant women. This study explored differences in terms of psychological adaptations between a sample of pregnant woman with and without a history of cancer (Mascheroni et al., 2019). It is well documented that cancer survivors usually experience higher levels of PTSD symptoms (Abbey, Thompson, Hickish and Heathcote, 2015; Cordova, Riba and Spiegel, 2017). However, in this study, it was also found that cancer survivors, not only experience higher level of PTSD symptoms, perceived their pregnancy as more central for their life story and their identity than women without a history of cancer. Becoming mothers after a highly stressful or traumatic event seems to be connected to the extent to which pregnancy represents a salient central point in women's life story and a significant event for women's identity (Mascheroni et al., 2019).

This study is not without limitations. Firstly, the cross-sectional data cannot demonstrate how consistent our findings are across time. A longitudinal design would allow a clearer understanding of change over time, allowing a deeper understanding of changes in women's identity. Also, a longitudinal design would be useful to explore the stronger relationship between the extent to which pregnancy represents a significant event for women's identity and the building of mother-child relationship and the building of their caregiving role in presence or absence of PTSD symptoms.

Moreover, our sample includes only Italian pregnant women. It will be essential to validate the pregnancy version of the CES in other different cultures, to document cross-cultural variations in the extent to which pregnancy represents a salient central point in women's life story and identity. Finally, we tested non-clinical populations of pregnant women. However, an important next step would be to better understand the

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centrality of pregnancy in the organisation of women's identity during this critical phase of life in clinical populations of pregnant women. In particular, to better understand the mechanism measured by the CES during pregnancy will be necessary to investigate the relation between the CES and perinatal depression and anxiety. In conclusion, our findings suggested that the CES is a valid measure that could be used with the pregnant woman to understand better the role played by pregnancy on women's identity and life story, as well as the underlying psychological challenges related to pregnancy.

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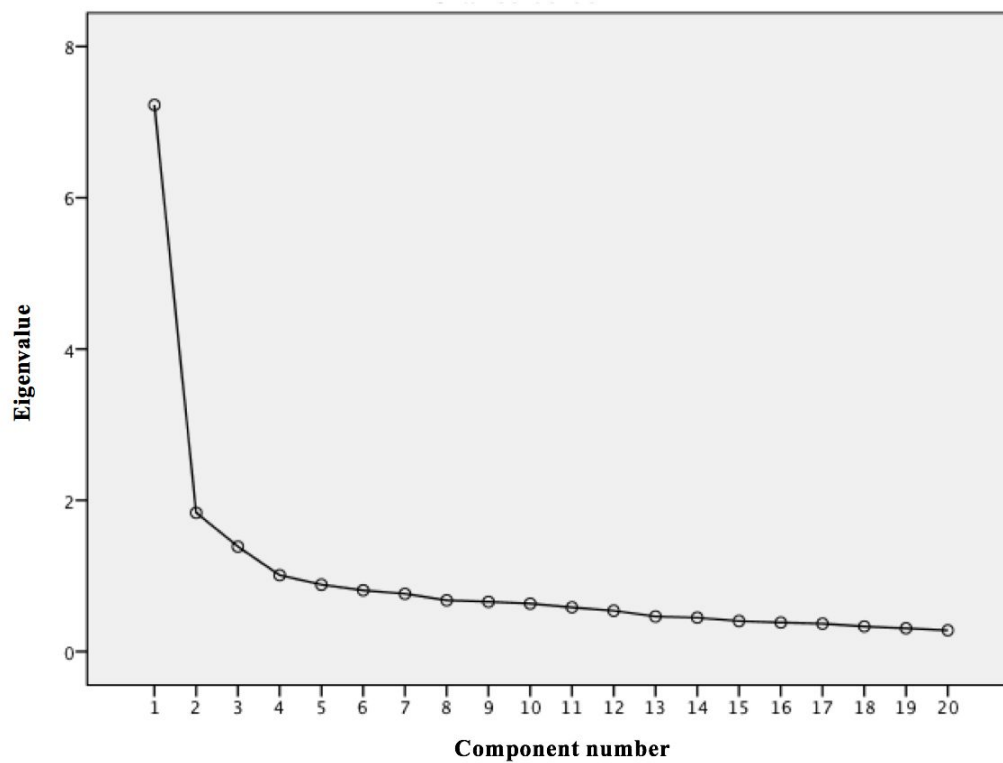
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Table 1. *Maternal demographic characteristics and information about pregnancy*

Demographic characteristics			
Maternal age (years)	<i>M (SD)</i>		33.74 (5.05)
	<i>range</i>		22.00-52.00
Maternal parity	%	Primiparous	66
		Pluriparous	34
Marital status	%	Single	5.0
		Married/co-habiting	93.1
		In a relationship/not co-habiting	1.3
		Separated/Divorced	0.6
Maternal education	%	Secondary school	10.1
		High school	41.2
		Bachelor's	6.0
		Master's	34.6
		Postgraduate	8.2
Information about pregnancy			
Previous miscarriage	%	No	73.3
		Spontaneous	17.3
		Voluntary	7.5
		Both spontaneous and voluntary	1.9
Pregnancy complications	%	No	85.8
		Yes	14.2
Mode of conception	%	Naturally	91.1
		ART	8.9

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Figure 1. *Scree plot depicting Eigenvalue for real data of the CES*

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Table 2. *Factor loadings of the Exploratory Factor Analysis (EFA) of the one-factor solution of the CES*

CES Items	Factor loadings
Item 1	.636
Item 2	.563
Item 3	.642
Item 4	.593
Item 5	.511
Item 6	.720
Item 7	.505
Item 8	.623
Item 9	.610
Item 10	.377
Item 11	.575
Item 12	.718
Item 13	.640
Item 14	.645
Item 15	.647
Item 16	.548
Item 17	.464
Item 18	.657
Item 19	.515
Item 20	.710

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Table 3. *CES items with highest correlations with the CES overall score in pregnant women*

Items	CES Total score
Item 6	.682***
Item 8	.652***
Item 12	.714***
Item 14	.627***
Item 15	.643***
Item 18	.639***
Item 20	.680***

Note. *** $p < .001$

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Table 4. *Multiple regression analyses with CES score, parity, complications during pregnancy, previous experience of miscarriage, previous experience of IVG, pregnancy onset as predictors of prenatal attachment*

Outcome variable: Prenatal attachment			
Predictors	R^2	B (SE)	β
<u>Model 1:</u>			
CES score	.152***	.260 (.037)	.378***
Parity		-1.255 (.99)	-.067
<u>Model 2:</u>			
CES score	.154***	.308 (0.72)	.447***
Parity		3.129 (5.84)	.166
CES score x Parity		-.064 (.084)	-.239
<u>Model 1:</u>			
CES score	.160***	.260 (.036)	.375***
Complications		-2.991 (1.352)	-.116**
<u>Model 2:</u>			
CES score	.164***	.276 (.039)	.398***
Complications		5.428 (7.448)	.211
CES score x Complications		-.128 (.111)	-.332
<u>Model 1:</u>			
CES score	.150***	.262 (.037)	.379***
Previous spontaneous miscarriage		1.125 (1.197)	.050
<u>Model 2:</u>			
CES score	.152***	.279 (.041)	.403
Previous spontaneous miscarriage		7.312 (6.567)	.323
CES score x Previous spontaneous miscarriage		-.089 (.093)	-.282
<u>Model 1:</u>			
CES score	.145***	.266 (.036)	.348***
Previous abortion		1.685 (1.624)	.055

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<u>Model 2:</u>	.142***		
CES score	.270 (0.38)	.389***	
Previous IVG	4.734 (8.837)	.153	
CES score x Previous abortion	-.945 (.128)	-.351	
<u>Model 1:</u>	.142***		
CES score	.266 (.036)	.384***	
Mode of conception	-.416 (1.579)	-.014	
<u>Model 2:</u>	.141***		
CES score	.276 (.039)	.399***	
Pregnancy onset	5.260 (7.613)	.176	
CES score x Mode of conception	-.085 (.111)	-.194	

Note. B = unstandardized regression coefficients; SE = standard error of the mean; β = standardised

regression coefficients; *** $p < .001$, ** $p < .001$.