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Fear of childbirth in primiparous Italian pregnant women: The role of anxiety, depression, and couple adjustment

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(Article begins on next page)

1 **Fear of childbirth in primiparous Italian pregnant women: the role of anxiety, depression, and**
2 **couple adjustment**

3 **Abstract**

4 **Background:** The prevalence of fear of childbirth in pregnant women is described to be about 20-
5 25%, while 6-10% of expectant mothers report a severe fear that impairs their daily activities as well
6 as their ability to cope with labour and childbirth. Research on fear of childbirth risk factors has
7 produced heterogeneous results while being mostly done with expectant mothers from northern
8 Europe, northern America, and Australia.

9 **Aims:** The present research investigates whether fear of childbirth can be predicted by socio-
10 demographic variables, distressing experiences before pregnancy, medical-obstetric factors and
11 psychological variables with a sample of 426 Italian primiparous pregnant women.

12 **Methods:** Subjects, recruited between the 34th and 36th week of pregnancy, completed a
13 questionnaire packet that included the Wijma Delivery Expectancy Questionnaire, the Edinburgh
14 Postnatal Depression Scale, the State-Trait Anxiety Inventory, the Dyadic Adjustment Scale, the
15 Multidimensional Scale of Perceived Social Support, as well as demographic and anamnestic
16 information. Fear of childbirth was treated as both a continuous and a dichotomous variable, in order
17 to differentiate expectant mothers as with a severe fear of childbirth.

18 **Findings:** Results demonstrate that anxiety as well as couple adjustment predicted fear of childbirth
19 when treated as a continuous variable, while clinical depression predicted severe fear of childbirth.

20 **Conclusions:** Findings support the key role of psychological variables in predicting fear of childbirth.
21 Results suggest the importance of differentiating low levels of fear from intense levels of fear in order
22 to promote adequate support interventions.

23
24 **Keywords:** fear of childbirth; severe fear of childbirth; pregnancy; risk factors; primiparous women
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1 Problem

2 Although fear of childbirth is a common feeling among pregnant women, severe forms could affect
3 both the mother's and fetus's well-being. Identifying fear risk factors help realize early interventions
4 for expectant mothers.

5 What is already known

6 About 20-25% of pregnant women experience fear of childbirth, and approximately 6-10% report
7 severe fear of childbirth. Severe fear of childbirth can affect an expectant mother's daily life and
8 impact on their ability to cope with labour and birth. Research has analysed fear risk factors reporting
9 contrasting results. Research has been done largely with North Europe, North America and Australia
10 populations.

11 What this paper adds

12 Fear risk factors are studied in an underrepresented sample of Italian primiparous women. Fear has
13 been considered both as a continuous as well as a dichotomous variable, to differentiate low levels of
14 fear from severe fear. Fear is predicted by individual (anxiety) as well as relational variables (couple
15 adjustment), while clinical fear is instead predicted only by individual variables (clinical depression).
16 These results suggested the importance of differentiating the clinical fear as a specific distress
17 condition.

1 Introduction

2 Fear of childbirth (FOC) is a common feeling among pregnant women. Overall, the prevalence
3 of FOC is described to be about 20-25% [1], while the prevalence of *severe* fear of childbirth (SFOC)
4 is estimated at 14% [2], although studies are significantly heterogeneous as they include different
5 definition of fear as well as other methodological issues (e.g., trimester screening, parity, etc.) [2].
6 SFOC is a dysfunctional emotion, also referred to as tokophobia [3], which interferes with women's
7 daily activities and may harm their ability to fully participate during labour and childbirth [1,4-7].
8 Even though previous research is not consistent [8,9], several studies report that primiparous women
9 experienced more FOC than parous women before birth [1] and were at increased risk to experience
10 SFOC [10,11].

11 Research has extensively investigated FOC risk factors. Some studies have found a connection
12 between FOC and various socio-demographic variables with mixed results. For example, while
13 younger expectant mothers with a lower educational level are more likely to experience FOC [12],
14 other research has indicated that older expectant mothers are more likely to experience FOC [13].

15 Other studies have found that distressing and potentially traumatic experiences that occurred
16 before pregnancy are connected to increased FOC during pregnancy. Specifically, expectant mothers
17 who have experienced emotional, psychological, or sexual abuse during childhood are more likely to
18 experience this feeling [14], as well as expectant mothers who have had a miscarriage before the
19 current pregnancy [15].

20 Previous research has found a connection between FOC and some medical-obstetric variables
21 that characterized high-risk pregnancies [16]. For example, the presence of gestational diabetes
22 negatively influenced women's health experiences resulting in increased FOC [17]. However, no
23 connection was found between other medical variables, such as the type of conception (spontaneous or
24 assisted fertilization), and FOC [18]. Finally, no study has compared the potential difference between
25 mothers with singleton fetuses and mothers with multiple fetuses regarding FOC.

26 Previous research regarding the connection between FOC and individual psychological
27 variables has found an association between fear, anxiety and depression [8, 10,11,19], however the
28 relationship between these dimensions is complex. For example, although Storksen and colleagues

1 [11] found that high levels of anxiety and depression were associated with increased FOC, the
2 majority of women with FOC (i.e., women with a total score of fear more than the clinical cut-off;
3 values ≥ 85 , measured by W-DEQ) were neither anxious nor depressed.

4 Furthermore, Huizink and colleagues [20] defined FOC as an expression of a more generalized
5 anxiety while Storksen and colleagues [11] suggested that depression is linked more to FOC than
6 anxiety; and again, other authors [7,8,21] underlined the difference between fear, and anxiety and
7 depression. Specifically, the narrative review of Rondung and colleagues [10] reported that FOC is
8 generally positively associated – but not overlapped – neither with anxiety (general, state, trait, and
9 sensitivity) nor with depression. These results suggest the specificity of FOC as a relative distinct
10 syndrome, related to what is unknown, uncertain and out of control [10].

11 Less research has been done on the connection between FOC and relational psychological
12 variables. What has been found is that the quality of couple relationship affects a woman's feeling of
13 FOC during pregnancy. Specifically, low levels of couple satisfaction – due particularly to the lack of
14 support from partner – were connected to an increased probability of FOC [6,22]. Furthermore, the
15 lack of a more generalized social support predicted an increased presence of FOC as well [8,9,23].

16 Previous research on FOC has been done largely with northern European, northern American,
17 and Australian expectant mothers [1,8,21], while the current research was done with an
18 underrepresented sample of Italian expectant mothers. Specifically, given the inconsistent results
19 obtained in the literature, this study investigated whether FOC can be predicted by: (a) socio-
20 demographic variables; (b) distressing or potentially traumatic experiences before pregnancy; (c)
21 medical and obstetric variables; (d) individual psychological variables; (e) relational psychological
22 variables.

23 **Method**

24 **Procedure and participants**

25 A cross-sectional research design was conducted on a convenience sample of 426 Italian
26 primiparous pregnant women between the 34nd and 36th week of pregnancy living in different Italian
27 regions (North, Central, and South). Participants were recruited from hospitals or family counselling
28 units where they attended antenatal classes from January 2015 to October 2015. During each antenatal

1 class, a university researcher and a hospital or family counselling midwife presented the research
2 project, describing its global aims and instruments. All the women who accepted to participate and
3 signed the informed consent completed an on-site questionnaire. Informed consent and all study
4 materials were approved by the institution's ethics review board. Women in the final sample met the
5 following inclusion criteria: (a) fluent in Italian; (b) primiparous; (c) between 34th and 36th week of
6 pregnancy; (d) in a stable couple relationship. Women who completed the questionnaire and signed the
7 informed consent but did not meet the inclusion criteria were excluded from the research (34 subjects).
8 Incomplete questionnaires were also excluded from the study (12 subjects).

9 **Measures**

10 Participants completed a questionnaire packet that included five scales, all previously
11 validated with an Italian sample:

- 12 - *Wijma Delivery Expectancy Questionnaire* (WDEQ(A), 14 item, Italian) [24]. This self-report
13 instrument measures childbirth expectations, with particular attention given to the fear of delivery. The
14 original instrument [25] consists of 33 items with six-point response alternatives per item, but we used
15 a 14-item version following a validation study conducted with a large sample of 522 Italian
16 primiparous women which highlighted that this reduced version worked best with an Italian
17 population [24]. For the 14-item version, the total score ranges between 0 and 70 (0-165 for the
18 original version): the higher the score, the greater the fear of childbirth manifested. In the present
19 study we used only 14 of the original scale 33 items; however, for simplicity and brevity, in the
20 contribution we will refer to this as simply the Italian version of the WDEQ. To date, previous
21 research has not achieved a consistent WDEQ(A) cut-off to identify clinical fear of childbirth; the
22 differences are also due to the presence of specific populations to which the scale has been
23 administered. Specifically, some studies report SFOC as the top quartile of the continuous measure
24 [1,6]; other studies use a cut-off score ≥ 66 [26] or ≥ 85 [8] to indicate moderate or high fear.

25 According to Rouhe and colleagues [27] and Takegata and colleagues [28], that distinguish severe fear
26 as the 90th to 100th percentile of WDEQ(A) distribution, we considered the 90th percentile of the
27 distribution of the Italian version of WDEQ(A) – that in this study is equal to a score of 39 – as the
28 cut-off value to distinguish SFOC. Furthermore, although the mono-factorial nature of the WDEQ(A)

1 has been criticised [29], we decided in this study to refer to the total score of the Italian version of
2 WDEQ(A), considering that in the Italian study [25] the three factors that emerged are intercorrelated.
3 This choice, indeed, facilitates the comparability among results obtained in previous studies, when the
4 only total score of WDEQ(A) is considered.

5 - *Edinburgh Postnatal Depression Scale (EPDS)* [30,31]. This instrument is composed of 10 items
6 with a 0-30 total score range developed to screen for postpartum depression, but also validated against
7 women during pregnancy showing good sensitivity and predictive values (64%-100% and 73%-100%
8 respectively) [32]. According to the systematic review of Gibson and colleagues [33] the cut-off value
9 of 13 was used to distinguish clinical depression.

10 - *State-Trait Anxiety Inventory (STAI, Y form)* [34,35]. This instrument is composed of 40 items
11 with a 20-80 total score range that measure anxiety from two different subscales: trait anxiety (20
12 items), which is a general characteristic of personality; state anxiety (20 items), or an emotional state
13 linked to some special moments.

14 - *Dyadic Adjustment Scale (DAS)* [36,37]. This is one of the more commonly used questionnaires to
15 measure couple's adjustment through 32 items, 31 of which relate to specific aspects of a couple's
16 interactions and one item on the overall happiness with the relationship. The total score range is from
17 0 to 151.

18 - *Multidimensional Scale of Perceived Social Support (MSPSS)* [38,39]. This instrument, composed
19 of 12 items with a total score ranging from 12 to 84, measures the perceptions of emotional social
20 support from three different sources: partners, family, and significant others (i.e., friends).

21 - *Personal information and anamnestic questionnaire*. This ad hoc questionnaire, developed by the
22 authors, included questions about socio-demographics (age, level of education, occupation),
23 distressing experiences before pregnancy (exposure to stressful events in the past – bereavement,
24 serious health problems, family problems – and previous miscarriages) and information about the
25 current pregnancy (single or twin pregnancy variables, spontaneous or assisted fertilization, threatened
26 miscarriage – i.e., bleeding in early pregnancy – and/or complications during the current pregnancy).

27 **Data analysis**

1 Descriptive statistics were computed to summarize demographics, obstetrics and other
2 variables. The distribution of the continuous variables (WDEQ(A), EPDS, STAI, DAS, MSPSS) was
3 assessed to determine whether scores were normally distributed. The skewness and kurtosis values
4 ranges between -.99 and 1.26, indicating that the data distribution is approximately normal for all these
5 variables. No validity and reliability analyses were performed for the questionnaires, while their
6 internal consistency was tested and it ranged from acceptable to very high (i.e., WDEQ(A),
7 Cronbach's alpha = .81; EPDS, Cronbach's alpha = .82; STAI, Cronbach's alpha = .90 for the state-
8 anxiety and = .89 for the trait-anxiety; DAS, Cronbach's alpha = .88; and MSPSS, Cronbach's alpha =
9 .76).

10 For all statistical analyses, fear was treated as both a continuous and a dichotomous variable.
11 Since the 90th percentile of the WDEQ(A) distribution in this study corresponds to the value of 39, we
12 used this cut-off score to distinguish between low and high levels of FOC.

13 The effect of socio-demographic variables (age and education), distressing experiences before
14 pregnancy (exposure to stressful events in the past, previous miscarriages), medical-obstetric variables
15 (single or twin pregnancy, spontaneous or assisted fertilization, threatened miscarriage and/or
16 complications during pregnancy), individual (EPDS, STAI) and relational (DAS, MSPSS)
17 psychological variables on fear of childbirth (WDEQ) was tested through a stepwise multiple
18 regression model when fear was considered as a continuous variable, and through a multiple logistic
19 regression model (forward Wald) when fear was measured as a categorical variable (cut-off score). All
20 categorical predictors entered in the regression models were dichotomous (yes or not) or have been
21 dichotomized (i.e., education: middle school/high school or degree/post-graduate specialization) and
22 recoded as dummy variables [40].

23 The depression variable was used both as continuous variable, in the linear regression model,
24 and as dichotomous variable (cut-off score ≥ 13), in the logistic regression model.

25 Statistical analysis was performed with SPSS version 17. *P* values less than .05 were
26 considered statistically significant.

27 **Results**

28 Participants' mean age was 34.4 years (SD = 4.6; range = 20-49). More than half of the

1 participants (58.7%) had a high level of education (graduate or post-graduate specialization). 84.9% of
2 women had a spontaneous conception and in 90% of cases it was a pregnancy with singleton fetus,
3 76.5% of women did not show any complications and 12.7% had a threatened miscarriage during the
4 current pregnancy, 24.9% of women previously had a miscarriage. Descriptive statistics of categorical
5 variables (socio-demographic, related to distressing experiences before the pregnancy, medical-
6 obstetric, related to the clinical distribution of WDEQ(A) and EPDS) are shown in Table 1, while
7 means and standard deviation of continuous variables (WDEQ(A), EPDS, STAI, DAS, MSPSS) are
8 shown in Table 2. As described in the data analysis section, WDEQ(A) and EPDS were considered
9 both as continuous and as dichotomous variables, while for STAI, DAS, and MSPSS only continuous
10 scores were used.

11 [INSERT TABLE 1 and TABLE 2]

12 *Model 1: The effect of socio-demographic variables, distressing experiences before pregnancy,*
13 *medical-obstetric variables, individual and relational psychological variables on fear of childbirth*
14 *(continuous variable).*

15 A stepwise multiple regression model was performed entering as predictors of FOC: age and
16 education (socio-demographic variables), exposure to stressful events in the past and previous
17 miscarriages (distressing experiences), single or twin pregnancy, spontaneous or assisted fertilization,
18 threatened miscarriage and complications during pregnancy (medical-obstetric variables), depression,
19 trait anxiety and state anxiety (individual psychological variables), dyadic adjustment and social
20 support (relational psychological variables). To examine whether multicollinearity between predictors
21 might impact the regression model, we tested the variance inflation factor (VIF) for each predictor;
22 values ranged from 1.00 to 2.06, suggesting acceptable levels of collinearity [41].

23 Results show that FOC is significantly predicted only by 3 of the 13 predictors ($F_{(3, 372)} =$
24 $25.67; p < .001$): state and trait anxiety (STAI) and dyadic adjustment (DAS) (Table 3). The overall
25 model explains 15.5% of the variance of FOC (Table 4 and Table 5).

26 [INSERT TABLE 3, TABLE 4, AND TABLE 5]

1 *Model 2: The effect of socio-demographic variables, distressing experiences before pregnancy,*
2 *medical-obstetric variables, individual and relational psychological variables on severe fear of*
3 *childbirth (dichotomous variable).*

4 A multiple logistic regression model was performed with the 13 predictors of SFOC. Results
5 show that the likelihood of belonging to the SFOC group (above the 90th percentile) is affected only by
6 EPDS score ≥ 13 (Chi square = 4.0; df = 1; $p < .05$) (Table 6 and Table 7). No other variable
7 demonstrated a statistically significant relationship with SFOC. Classification accuracy of the model is
8 92.2%.

9 [INSERT TABLE 6 AND TABLE 7]

10 **Discussion**

11 This study aimed at investigating the predictive role of socio-demographic, related to stressful
12 experiences before pregnancy, medical-obstetric, individual and relational psychological variables on
13 fear of childbirth (FOC) – measured both as continuous as well as dichotomous (i.e., FOC *versus*
14 SFOC) dimension – during pregnancy in a sample of primiparous women. Indeed, some studies
15 reported that primiparous women feel more FOC than multiparous women and are at increased risk to
16 experience SFOC [1,10,11]. This data makes the study of fear in primiparous expectant mothers
17 particularly relevant. However, it should be noted that other studies have not found such differences
18 regarding FOC and SFOC between primiparous and parous women [8,9].

19 Results demonstrate that, as a continuous variable, FOC was associated with higher scores of
20 anxiety (both state and trait) and lower scores of couple adjustment such that as anxiety increases and
21 couple adjustment decreases, FOC increases. These results confirm previous research that has found a
22 connection between some individual and relational variables and fear of childbirth [6,8,11].

23 However, results failed to demonstrate a significant association between other individual
24 (depression) and relational variables (social support). These results partially contrast with previous
25 research. Indeed, some studies have found that a low social support (e.g., poor available help) or a lack
26 of support provided by women's close informal networks increase the probability of FOC [9,23,42].
27 However, other studies specifically referred to the partner support, underling the importance of a
28 couple relationship as a central dimension, beyond a more generalized support [6,22]. In respect to

1 depression, our inability to find a connection between depression and fear as continuous variable
2 confirm the independent nature of fear from depression [7], although it contrasts with the results of
3 some studies that have found a connection between these two variables [10,11,19].

4 Furthermore, our results failed to demonstrate a significant association between medical-
5 obstetric variables, stressful experiences before pregnancy, as well as socio-demographic variables and
6 FOC. The absence of connection between medical-obstetric variables and FOC contrasts with previous
7 research. Indeed, some studies have found that having complications during pregnancy increases the
8 probability of FOC [16,17]. The difference between the current and previous research might be due to
9 the type of complications analysed. For example, Sjögren and colleagues [17] focus exclusively on
10 gestational diabetes, and Yali and Lobel [16] refer more generally to a “medically high risk”
11 pregnancies, while in our research we considered several specific complications (placenta previa,
12 preeclampsia, hypertension, and gestational diabetes). At the same time, in our research, FOC was not
13 associated with the other medical and obstetric variables (i.e., fertilization type, pregnancy type),
14 which is consistent with previous research [18].

15 Regarding exposure to stressful events in the past, the variety of stressful experiences included
16 in this research (i.e., relationship problems, separation or divorce, bereavement, health problems) may
17 partly explain why we didn’t find any relationship with FOC. In fact, previous research has focused
18 mainly on the relationship between FOC and abuse experiences [14]. Although the experiences
19 analysed in our study could be considered stressful, they are not traumatic experiences (as abuse) nor
20 daily (minor) stressors that may be more relevant to women’s FOC, as suggested by Hall and
21 colleagues [8].

22 Finally, regarding the socio-structural variables, previous research includes conflicting results
23 indicating that socio-demographic variables could be not in themselves predisposing factors for FOC,
24 but as moderators or mediators they could bind to fear along with other more purely psychological
25 variables (e.g., anxiety, depression, couple’s relationship, etc.), or medical-obstetric variables related to
26 the current pregnancy as well as to the past (previous miscarriage, threatened miscarriage, gestational
27 diabetes, etc.). For example, Räisänen and colleagues [13] reported that women with higher level of
28 FOC were significantly older and more often experienced reproductive risks as well as complications

1 during the current pregnancy. In this direction, we assume that these complications could lead to an
2 increased feeling of fear more than age itself. Furthermore, it is possible to assume that not just one
3 but more socio-demographic variables predict together a major feeling of fear during pregnancy. For
4 example, in a study of Laursen and colleagues [12] a low educational level, a young age and
5 unemployment were found to predict FOC jointly.

6 As a dichotomous variable SFOC was associated with depression: women with a clinical
7 depression (above the cut-off) had an increased probability to feel SFOC. This result confirms
8 previous research reporting that expectant mothers with depression were significantly more likely to
9 have SFOC [11]. Notwithstanding fear and depression were generally not associated, they appeared
10 strictly connected in the clinical sample (both the measures above the cut-off), describing a distress
11 condition and indicating a specific vulnerability in these women [11,43]. We can assume that women
12 in this subsample appear to be in a vulnerable state, and they are severely compromised in their daily
13 life [1].

14 The differences between the two tested models – that considered FOC respectively as
15 continuous and as dichotomous variable – underlined the importance of distinguishing between FOC
16 and SFOC. Indeed, while a certain level of FOC – if existing – can be considered as a physiological
17 expression of the expectant mother's feeling of what is unknown and out of control [19], SFOC can be
18 instead considered a clinical condition. This clinical condition manifests itself in specific symptoms
19 which can impair the expectant mother's normal functioning and increase the risk to both her and her
20 child's health [1,5]. In fact, women who report higher levels of fear experience higher rates of
21 dystocia, protracted labour, and are more likely to have an emergency caesarean section [1,5].
22 Specifically, focusing on SFOC allowed us to more accurately understand the role of psychological
23 variables on fear. If in physiological situations (i.e., with low level of fear), relational variables (the
24 quality of a couple's relationship) can affect the woman's feelings in thinking about the childbirth, in
25 the most extreme situations (i.e., with high level of fear) fear is exclusively predicted by individual
26 variables (depression). Although it is known that depression is connected with relational variables, we
27 could suggest that this clinical condition is more linked to women's negative mood and emotional
28 fragility.

1 The present research has its limitations. For example, sample size was not defined through a
2 power analysis procedure; as the number of women included in the study is quite high, especially in
3 light of the large number of predictors considered, the sample size estimation could permit to define
4 the adequate number of subjects, in order to achieve statistical significance. Moreover, our pregnant
5 women were from a high and medium educational level. It would be interesting to see if FOC is
6 positively or negatively influenced by this socio-demographic variable, as it might be that those from
7 lower educational level have been exposed to more psychosocial risk factors [12]. Furthermore, we
8 considered a very large and heterogeneous group of stressful experiences before pregnancy as well as
9 a very diffuse group of medical-obstetric complications during pregnancy. In this way, the proportion
10 of the sample reporting past stressful experiences and/or current complications was very high. In
11 particular, regarding the stressful experiences it was not possible to determine how proximal they were
12 to when data was collected and this could be important to consider for future research. Furthermore, it
13 should be noted that the shorter version of the W-DEQ we used did not include the original items that
14 measure abandonment, injury, death, or danger. The partially different focus between the two versions
15 of the scale make difficult to compare our findings with other studies that have used the WDEQ. In
16 addition, since fear impacts not only on the progress of pregnancy, but also on labour and childbirth
17 [3,5] this cross-sectional research is limited by the fact that it focuses solely on pregnancy or prior to
18 pregnancy variables and does not evaluate the link between fear and those variables directly related to
19 childbirth, such as the duration of labour or type of birth [3,5]. We are particularly interested in future
20 research on FOC that looks at multiple variables related to childbirth and postpartum via longitudinal
21 studies as this would allow for the development of appropriate psychosocial interventions for
22 expectant and new mothers who have FOC. Finally we have to consider that in the first regression
23 model only 15.5% of the total variance was explained, while in the second regression model only one
24 of the 13 variables predicted SFOC. These results make clear that most of the considered variables
25 failed to predict fear of childbirth and, in this way, this feeling still remains to be further investigated.
26 Further research is needed to better understand the nature of fear in order to investigate its role during
27 pregnancy and childbirth.

28

Conclusion

1 Childbirth is an event full of uncertainties. Previous research has reported that some women
2 experience ambivalent feelings towards this event, while others sometimes develop real psychic
3 distress [1,3]. Among the feelings that most frequently characterize childbirth, FOC is particularly
4 important, also because is a common feeling among pregnant women, especially for primiparous
5 expectant mothers. The distinction between FOC and SFOC allows investigators to deepen
6 understanding of the role of psychological variables on fear.

7 Our findings have clinical implications for Italian expectant mothers. Identifying quickly not
8 only different levels of fear of childbirth (i.e., FOC *versus* SFOC), but also the specific nature of the
9 fear (i.e. fear as condition linked to anxiety and relational variables, or fear as condition linked to
10 depression) could help to develop focused and specific intervention programs aimed at promoting the
11 women’s well-being in preparation for childbirth.

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Table 1. Descriptive statistics of categorical variables

	%	N (426)
Education		
Middle school graduation	5%	21
High school graduation	36.3%	156
Degree/Graduate specialization	50.7%	215
PhD/Post-graduate specialization	8%	34
Pregnancy		
Spontaneous fertilization	84.9%	360
Assisted fertilization	15.1%	66
Single pregnancy	90%	383
Twin pregnancy	10%	43
Complications	23.5%	100
Placenta previa	3.1%	13
Hypertension	1.7%	7
Gestational diabetes	5.7%	24
Preeclampsia	2.4%	10
Other	10.6%	46
Threatened miscarriage	12.7%	54
Distressing experiences		
Distressing experiences (bereavement, divorce, serious health problems, etc.)	61.4%	261
Miscarriage	24.9%	109
EPDS \geq 13	8.5%	36
WDEQ \geq 39	8.2%	35

1 Table 2. Descriptive statistics of psychological (individual and relational) variables
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	Mean	S.D.
4 WDEQ(A)	26.9	9.5
5 STAI (State)	38.97	9.79
6 STAI (Trait)	36.17	8.33
7 EPDS	6.37	4.38
8 DAS	120.13	15.15
9 MSPSS	71.07	11.3

1 Table 3. Stepwise multiple regression: model summary. Dependent variable: WDEQ(A) (continuous
 2 variable)

Model	R	R Square	Adjusted R Square	S.E. Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.33	.11	.11	8.87	.11	30.58	1	251	.000
2	.37	.14	.13	8.74	.03	8.50	1	250	.004
3	.41	.16	.15	8.61	.03	8.06	1	249	.005

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1 Table 4. Stepwise multiple regression: predictors and coefficients. Dependent variable: WDEQ(A)
 2 (continuous variable)

Model		Unstandardized coefficients		Standardized coefficient	t	p
		b	SE b	β		
1	(Constant)	13.53	2.44		5.54	.000
	STAI_Trait	.37	.06	.33	5.53	.000
2	(Constant)	9.05	2.85		3.17	.002
	STAI_Trait	.29	.70	.26	4.21	.000
	STAI_State	.18	.06	.18	2.92	.000
3	(Constant)	24.61	6.16		3.99	.000
	STAI_Trait	.21	.07	.19	2.87	.004
	STAI_State	.17	.06	.18	2.88	.004
	DAS	-.10	.04	-.18	-2.84	.005

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1 Table 5. Stepwise multiple regression: excluded variables. Dependent variable: WDEQ(A)
 2 (continuous variable)

Model		Beta in	t	p
1	Age	.01	.14	.88
	Education	.04	.61	.54
	Stressful events	-.02	-.41	.68
	Previous miscarriages	.02	.35	.73
	Single or twin pregnancy	.07	1.26	.20
	Spontaneous or assisted fertilization	-.00	-.05	.95
	Threatened miscarriage	.10	1.65	.09
	Complications	-.05	-.76	.44
	EPDS	.10	1.31	.19
	STAI_State	.18	2.91	.00
	DAS	-.18	-2.87	.00
MSPSS	-.05	-.80	.42	
2	Age	.01	.15	.88
	Education	.02	.28	.77
	Stressful events	-.04	.66	.51
	Previous miscarriages	.03	.45	.65
	Single or twin pregnancy	.09	1.51	.13
	Spontaneous or assisted fertilization	.02	.39	.69
	Threatened miscarriage	.09	1.50	.13
	Complications	-.05	-.91	.34
	EPDS	.06	.76	.48
	DAS	-.18	-2.84	.00
	MSPSS	-.07	-1.16	.25
3	Age	.0	.09	.92
	Education	.02	.30	.76
	Stressful events	.01	.12	.90
	Previous miscarriages	.03	.49	.63
	Single or twin pregnancy	.09	1.55	.12
	Spontaneous or assisted fertilization	-.03	-.53	.59

Threatened miscarriage	.10	1.69	.09
Complications	-.05	-.92	.35
EPDS	.04	.51	.61
MSPSS	-.03	-.59	.55

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1 Table 6. Multiple logistic regression: predictors and coefficients. Dependent variable: SFOC
 2 (dichotomous variable)

		β	SE	Wald χ^2	p	Exp(β)	95% C.I.
Step 1	EPDS \geq 13	1.37	.62	4.86	.02	3.96	1.16-13.48
	Constant	-2.82	.28	97.87	.00	.06	

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1 Table 7. Multiple logistic regression: variables not in equation. Dependent variable: SFOC
 2 (dichotomous variable)

		Score	df	³ p ₄
Step 1	Age	1.76	1	.18
	Education	1.05	1	.30
	Stressful events	.50	1	.48
	Previous miscarriages	.07	1	.78
	Single or twin pregnancy	1.03	1	.31
	Spontaneous or assisted fertilization	1.97	1	.16
	Threatened miscarriage	.11	1	.73
	Complications	.04	1	.85
	STAI_Trait	.18	1	.67
	STAI_State	2.74	1	.10
	DAS	.53	1	.47
	MSPSS	.05	1	.82
Overall statistics		11.07	12	.52