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Psychometric Properties of the Spanish Version of the Pregnancy Related Anxiety Questionnaire (PRAQ)

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Abstract. Although pregnancy increases the vulnerability to anxiety, no specific assessment instruments are usually used to detect it. The objective of this study was to adapt the Pregnancy Related Anxiety Questionnaire (PRAQ) to Spanish population, as well as analyze its validity and reliability. A sample of 367 nulliparous pregnant women with a normal risk status filled in a socio-demographic and obstetric-gynaecological questionnaire, the PRAQ, the Edinburgh Postnatal Depression Scale (EPDS) and the State-Trait Anxiety Inventory (STAI). After performing a factorial analysis, a five-factor model that explains 53.1% of the variance was obtained. Estimates of internal consistency reliability were adequate (range = .78 to .93) for the five factors included in the final confirmatory factor analysis, and for the total scale (.97). Significant correlation among PRAQ, EPDS, and STAI was found ($p < .001$). The 85th percentile (score 234 or more) was used as a cut-off point to identify those women with high pregnancy-specific anxiety. In accordance with the results obtained, the PRAQ can be considered a useful screening tool to evaluate pregnancy-related anxiety among the Spanish population.

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Pregnancy and postnatal periods involve important physical, psychological and social changes that women need to address (van Bussel, Spitz, & Demyttenaere, 2009). Furthermore, this period raises the vulnerability to develop or relapse in certain mental disorders (Smith, Shao, Howell, Lin, & Yonkers, 2011), especially depression and anxiety (Alipour, Lamyian, & Hajizadeh, 2012).

The prevalence of antenatal depression in developed countries often vary between 7% and 20% (e.g., Andersson et al., 2003; Gavin et al., 2005) and anxiety between 10% and 15% (Dayan et al., 2006), reaching in some cases up to 54% of pregnant women (Lee et al., 2007). Likewise, the comorbidity of both disorders is frequent, as demonstrated in the research carried out by Ross, Gilbert Evans, Sellers, and Romach (2003), which estimated that over 50% of pregnant women with depression were also diagnosed of anxiety. Therefore, depressive and anxiety disorders during pregnancy and the postpartum periods are probably not independent clinical entities (Tendais, Costa, Conde, & Figueiredo, 2014). Furthermore, it has been observed that the presence of depression as well as of anxiety during pregnancy (Míguez, Fernández, & Pereira, 2017; Norhayati, Nik Hazlina, Asrenee, & Wan Emilin, 2015) represent a risk factor that increases the chance of developing postnatal depression. However, while antenatal depression has aroused great interest at investigation level (e.g., Andersson et al., 2003; Gavin et al., 2005; Lee et al., 2007; Melville, Gavin, Guo, Fan, & Katon, 2010), antenatal anxiety has been relegated to the background (Andersson et al., 2003; Dayan et al., 2006; Lee et al., 2007). Moreover, while there are specific questionnaires to evaluate perinatal depression and some of them have been universally used for 30 years, such as the Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden, & Sagovsky, 1987), and there are specific questionnaires to evaluate postpartum depression, such as the Postpartum Depression Screening Scale (PDSS; Beck & Gable, 2000) and the Bromley Postnatal Depression Scale (BPDS; Stein & van den Akker, 1992), the most adequate evaluation method to evaluate pregnancy related anxiety has not been established yet, and no specific scale has been adapted during pregnancy or postpartum in the context of Spain.

High anxiety levels during pregnancy may have short and mid-term consequences both for the mother

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and her offspring. On the one hand, anxiety during pregnancy has been associated with worse obstetric outcomes, such as premature birth, longer duration of labor, greater probability of using analgesics, low weight at birth, lower scores in the Apgar test (Dunkel Schetter, & Tanner, 2012; Standley, Soule, & Copans, 1979). Note that worse obstetric outcomes may be predictor of subsequent impairment of cognitive development and mental health in childhood (Martini, Knappe, Beesdo-Baum, Lieb, & Wittchen, 2010). On the other hand, pregnancy-related anxiety has been associated with consequences in children such as depression and anxiety (Gutteling et al., 2005; Huizink, Robles de Medina, Mulder, Visser, & Buitelaar, 2002; van den Bergh & Marcoen, 2004; van den Bergh et al., 2005; van den Bergh, van Calster, Smits, van Huffel, & Lagae, 2008), attention deficit and hyperactivity disorder and development delays (Huizink, Robles de Medina, Mulder, Visser, & Buitelaar, 2003). The adverse outcome associated with pregnancy-related anxiety demonstrate the need to carry out adequate and specific assessment to identify the women that suffer this condition. During pregnancy, women may experience specific fears, such as fear of incompetence as mother, pain and loss of control after birth, loss of own life and baby's life, and worries about physical, personal and marital changes due to pregnancy and birth (Areskog, Uddenberg, & Kjessler, 1981; Huizink, Mulder, Robles de Medina, Visser, & Buitelaar, 2004; Standley et al., 1979). These fears and concerns are not taken into account by the general anxiety evaluation scales that are commonly used during pregnancy such as the State-Trait Anxiety Inventory (STAI) from Spielberger, Gorsuch, and Lushene (1970) or the Anxiety Subscale of the Hospital Anxiety and Depression Scale (HADS-A) from Zigmond and Snaith (1983). As a consequence, they may not detect all of the women that actually experience high levels of anxiety in this period of life. The results derived from the use of general scales could therefore be underestimating its prevalence.

Likewise, some researchers have seen that pregnancy-specific anxiety seems to be a robust predictor of birth-related and childhood outcomes, independent of general anxiety measures (Dunkel Schetter & Tanner, 2012; Huizink et al., 2002; Reck et al., 2013).

Some of the scales that exist to evaluate anxiety during pregnancy are the Pregnancy Anxiety Scale (PAS; Levin, 1991), the Pregnancy Specific Anxiety Scale (PSAS; Roesch, Dunkel Schetter, Woo, & Hobel, 2004) and the Pregnancy Related Anxiety Questionnaire (PRAQ; Van den Bergh, 1990). The original version of PRAQ is composed of 55 items and was developed in The Netherlands. There are reduced versions, such as the one of Huizink et al. (2004), with 10 items each with five response options, which have been adapted and used in different countries, such as Germany (Dubber, Reck, Müller, & Gawlik, 2015), Australia (Matthey, Valenti, Souter, & Ross-Hamid, 2013) and Finland (Tolvanen et al., 2013). However, no scale has been adapted to assess pregnancy-related anxiety in Spain yet.

In view of these data, the objectives of the present study were to adapt the PRAQ scale to a sample of Spanish pregnant women in its original version of 55 items and analyze its psychometric properties, especially its validity and reliability.

Methods

Participants

A total of 635 Spanish pregnant women in their first trimester of pregnancy (8-15 weeks) that went to medical appointments in their hospital to follow up and protocolized control of their pregnancy were invited to enroll in the study. These were the inclusion criteria: Being 18 or older, being nulliparous, participating voluntarily in the study, and speaking and reading Spanish. Since 15 of them refused to participate and 253 were multiparous, these being excluded from the study. The study sample was composed of 367 nulliparous pregnant women with a normal risk status.

The participants aged 18 to 44 (M = 32.31, SD = 4.89). The interviews were carried out between the 8 and 14 weeks of pregnancy (M = 10.73, SD = 2.44). Women were married or lived with their partner (95.4%) and 48.2% of them had university studies. Concerning their employment situation, 77.0% of the sample were employed at the moment of carrying out the interview. Pregnancy was planned in 87.7% of cases and 5.7% of them reported that they had complications in their first weeks of pregnancy.

Measures

Socio-demographic and obstetric-gynaecological questionnaire

An ad hoc questionnaire was elaborated for this study, which included information about socio-demographic variables (e.g. age, marital status, educational level, occupational status and personal monthly income), previous obstetrical history and current pregnancy (e.g. number of previous pregnancies, planned pregnancy, complications, etc.). Additionally, information about the family and personal history of psychiatric disorders was obtained.

Edinburgh Postnatal Depression Scale (EPDS)

The EPDS (Cox et al. 1987) is a self-reported questionnaire designed to detect postpartum depressive states and asks about how the women have been feeling over the past 7 days. This scale includes 10 items with four response options, each of them having a single value

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between 0 and 3. The higher the value the more severe the symptom. As a consequence, the scale scores range from 0 to 30. In the present study, it has been used the Spanish version of the EPDS scale (Garcia-Esteve, Ascaso, Ojuel, & Navarro, 2003), which showed good internal consistency (α = .80).

State-Trait Anxiety Inventory (STAI)

The STAI (Spielberger et al. 1970; Spanish version TEA, 1982) comprises two self-report scales for measuring two distinct anxiety concepts: State-anxiety and trait-anxiety. Both scales contain 20 statements that ask the respondent to describe how she feels at this moment (state-anxiety) or how she generally feels (trait-anxiety). State anxiety is conceptualized as a transitory emotional state, whereas trait-anxiety refers to relatively stable individual differences in proneness to anxiety. The total score can vary between 0 and 60 in such a way that the higher the score, the higher the level of anxiety. In this sample, the reliability of the state-anxiety scale was .91and the one of the trait-anxiety scale was .88. The cut-off point used for state anxiety was 32 or more.

Pregnancy Related Anxiety Questionnaire (PRAQ)

The PRAQ (van den Bergh, 1990) is a scale that refers to specific fears and worries related to pregnancy and describe how the woman feels at this moment. The original version is Dutch and consists of 55 items distributed in five subscales: Concern for oneself and the partner relationship during pregnancy (15 items), fear for the integrity of the baby (6 items), fear of delivery (9 items), fear of changes (9 items), concern about future mother-child, father-child relationship and partner relationship (16 items). Each item has 7 answer options (absolutely not applicable; rather badly applicable; more not than applicable; centre position; rather applicable; quite good applicable; extremely applicable).

The PRAQ also presents three additional items: "I think that my pregnancy so far has been more or less like that of other women generally", "I feel that my pregnancy so far has been much more pleasant and better than I imagined" and "I feel that my pregnancy so far has been much more difficult and worse than I imagined". These items are used to examine how pregnant women compare themselves to other pregnant women. The total score can range from 58 to 406, so that the higher score, the higher pregnancy-related anxiety. The original scale was obtained after we requested and got authorized by the author Bea van den Bergh. Based on an earlier study (Matthey et al., 2013), we used the 85th percentile of the PRAQ total scores to identify women with high scores on pregnancy-related anxiety. The reliability of the instrument in this sample was excellent (α = .97).

Procedure

The sample was recruited in the first trimester of pregnancy at the obstetric consultations of the hospital of reference for women from September 2015 to December 2016. Participants were first informed verbally and in writing about the objective and the methodology of the study, and their cooperation was requested. Once informed consent was signed, individual administration of the different questionnaires was carried out. The average evaluation time was 30 minutes. Participants did not get any type of incentive for their participation. The study was approved by the Clinical Research Ethics Committee of Galicia and authorized by the management of University Hospital Complex of Ourense, Spain.

The PRAQ was translated into Spanish using the method of translation (English-Spanish) and back-translation (Spanish-English) for being the method that is considered the most complete and that guarantees the highest quality in the translation process. Firstly, the original version was translated into Spanish by four Spanish native speakers that are proficient in English. From these translations, three assessors measured the semantic equivalence of the different versions and a first version of the questionnaire was designed. This version was back-translated into English. Finally, the questionnaire was tested in a pilot study carried out with 11 pregnant women to verify that they understood all the items. No items were eliminated or significantly changed during the translation process.

Analysis

Data analysis was carried out with statistical packages SPSS v22 and STATA v14., with a p-value of $< .05$ considered significant.

Firstly, a descriptive analysis of the sample was carried out. Quantitative variables were expressed as an average. The distribution of frequencies was used to analyze categorical variables. The construct validity of the PRAQ scale was assessed using factorial analysis. Particularly, Kaiser-Meyer-Olkin (KMO) tests of sampling adequacy (Kaiser´s criteria: All factors whose eigenvalues ≥ 1 were extracted) and Bartlett´s sphericity test were performed to prove that it was feasible. Then, factorial analysis was carried out calculating the rotated principal component matrix using the Varimax method.

Additionally, Cronbach´s alpha was calculated to determine the reliability of the five PRAQ scales, and concurrent validity coefficients using the Pearson correlation.

To interpret the Cronbach's alpha, the criteria of George and Mallery (1995) were followed. According to this, a Cronbach's alpha less than 0.5 shows a level

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of not acceptable reliability; a value between 0.5 and 0.6 could be considered as a poor level; a value between 0.6 and 0.7 would be weak; between 0.7 and 0.8 would be considered acceptable; a value between 0.8 and 0.9 could be qualified as a good level, and a value greater than 0.9 would be excellent.

To interpret the Pearson correlation, coefficient the criteria of Sote (2005) were followed. Thus, values of *r* less than or equal to 0.1 would indicate absence of correlation or a very weak level of correlation; values less than 0.3 would indicate a weak correlation level; values lower than 0.5 would indicate a moderate level of correlation and values of 0.5 or more would indicate a strong correlation level.

Finally, to establish the cut-off point of the PRAQ, the percentiles of the scale were calculated. The 85th percentile was used to identify those women with high pregnancy-specific anxiety.

Results

Construct validity

The analysis revealed a Kaiser–Meyer–Olkin (KMO) Index of .952 and a statistically significant Bartlett's test ($p < .001$). Thus, the conditions for factor analysis of the PRAQ were favorable given the size of the sample ($N = 367$).

The results of the exploratory factor analysis of this scale, following the Kaiser's criteria, indicate a model composed of 10 factors. However, the "scree plot" suggests that the greatest part of the variance is explained by three - five factors (Figure 1). Using the same sample, a confirmatory factor analysis composed of five factors was performed, just like with the original scale, as it explains 53.1% of the variance of the scale. The criterion used to retain the items in each factor was a score in the factorial load equal or greater than .30. Particularly, this confirmatory factor analysis (Table 1) indicates that factor would be composed of Items 4, 15, 18, 31, 33, 34, 38–40, 42–44, 46 and 48–55; Factor 2 would be composed of Items 5–9, 11, 21, 22 and 45; Factor 3 would be composed of 23–30 and 32; Factor 4 would be composed of Items 10, 12–14, 19, 20 and 35–37; and, finally, Factor 5 would be composed of Items 1–3, 16, 17, 41 and 47.

Concurrent validity

The concurrent validity of the PRAQ was evaluated by correlating the PRAQ measures with the STAI and the EPDS (Table 2). Concerning the concurrent validity of

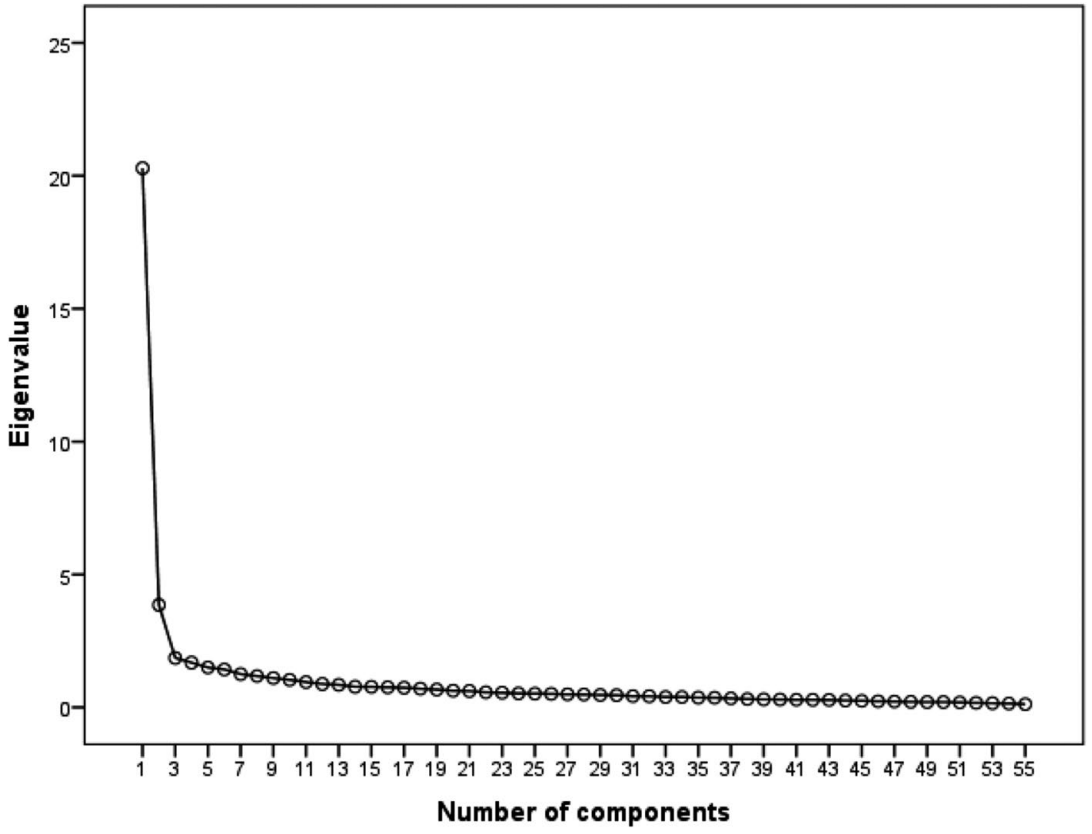

Figure 1. Scree Plot

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Table 1. *Structure Matrix Correlations of the Confirmatory Factor Analysis for the PRAQ*

PRAQ Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
4. Me preocupa sufrir una crisis nerviosa	**.327**	.200	.213	.225	.309
15. Me preocupa que mi cuerpo no recupere su figura habitual después del embarazo	**.458**	.037	.111	.248	.326
18. Tengo miedo de la soledad y del aislamiento de los demás.	**.375**	.202	.351	.100	.308
31. Estoy preocupada por mi aspecto físico poco atractivo	**.578**	.042	.294	.108	.274
33. Me preocupa la fidelidad de mi pareja.	**.524**	.082	.405	.119	.139
34. Temo a los hospitales y todo lo que tenga que ver con ellos.	**.468**	.116	.135	.453	–.054
38. Me preocupa que mi pareja no sea capaz de arreglárselas bien en casa mientras esté ingresada.	**.553**	.094	.365	.116	.083
39. En realidad, mi pareja está menos implicada en el embarazo de lo que esperaba.	**.578**	.124	.084	.016	–.006
40. Estoy un poco preocupada porque nuestro bebé pueda no ser guapo y temo la reacción de los demás.	**.689**	.135	.012	.072	–.009
42. A veces me preocupa que convertirme en madre me cambie mucho y, por ejemplo, me haga sentir mayor.	**.689**	.094	.057	.148	.277
43. Me pregunto si mi pareja será un buen padre o si asumirá suficientemente sus responsabilidades	**.598**	.110	.190	.042	.138
44. Me preocupa haber ganado tanto peso.	**.564**	.045	.216	.238	.223
46. Temo que mi pareja no me preste suficiente atención una vez haya nacido el bebé.	**.657**	.187	.228	–.032	.254
48. Me culpo por no ser siempre estricta con la dieta que me prescribieron	**.369**	.245	.307	.129	.344
49. Estuve triste o me sentí mal por algo que ocurrió en el embarazo y me pregunto si le habrá afectado al bebé.	**.474**	.193	.337	.041	.343
50. Me preocupa que mi hijo pueda ser un niño difícil.	**.503**	.322	.194	.195	.346
51. Me preocupa el hecho de estar demasiado ocupada con el niño/a y que mi pareja pueda sentir que no le dedico suficiente tiempo	**.473**	.188	.300	.144	.378
52. Me preocupa no estar en una habitación individual en la maternidad y no llevarme bien con mi compañera de habitación.	**.616**	.098	.138	.139	.055
53. Me preocupa que tengamos que renunciar a muchas cosas por el bebé.	**.680**	.031	.069	.256	.204
54. Me preocupa que la habitación del bebé y la casa no estén completamente preparadas cuando tenga que ir al hospital.	**.585**	.097	.138	.167	.238
55. Estoy empezando a cansarme de llevar ropa premamá	**.610**	–.005	.115	.223	.125
5. Tengo miedo de que mi bebé sufra algún daño cerebral o discapacidad mental.	.117	**.825**	.013	.178	.211
6. Temo que los movimientos del feto o la ausencia de ellos sean anormales.	.147	**.706**	.203	.153	.259
7. Tengo miedo de que mi bebé muera después de nacer.	.088	**.729**	.249	.175	.142
8. Aunque conozco los avances médicos en relación al parto temo que pueda morir durante el mismo.	.122	**.652**	.310	.247	.037
9. Temo que mi feto tenga alguna malformación	.083	**.816**	.121	.157	.176
11. Tengo miedo a la muerte y a la pérdida de un ser querido.	.071	**.426**	.286	.355	.204
21. Temo que mi bebé no esté sano.	.123	**.791**	.121	.199	.212
22. Temo a una enfermedad física o psíquica a largo plazo.	.138	**.566**	.383	.312	.036
45. Me preocupa el hecho de que algo que haya comido o bebido pueda dañar al bebé.	.182	**.521**	.248	.169	.228
23. Me preocupan los cambios en mi apetito sexual y los efectos que tengan en mi pareja	.225	.209	**.487**	.237	.462
24. Me preocupan algunos síntomas que tengo y su significado.	.210	.194	**.476**	.246	.405
25. Me preocupan mis cambios repentinos de humor.	.255	.111	**.598**	.217	.417
26. Me da miedo mi propia muerte y verla como un posible fin de la existencia.	.272	.351	**.540**	.274	–.046
27. Me preocupa convertirme en una persona demasiado centrada en mí misma.	.290	.234	**.661**	.165	.111
28. Me preocupa mi irritabilidad.	.281	.225	**.632**	.177	.242

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Table 1 *(Continued)*

PRAQ Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
29. Temo que demasiada actividad física pueda causar que el cordón se enrede alrededor del cuello del feto.	.257	.346	**.609**	.160	.059
30. Temo conducir demasiado rápido	.335	.199	**.464**	.097	.133
32. Temo que el coito pueda hacer daño al feto.	.200	.117	**.365**	.331	.317
10. Me da miedo el dolor durante la dilatación y el parto.	.197	.195	–.033	**.678**	.208
12. Temo que el feto no se coloque bien, y pueda ser necesario practicar una cesárea.	.128	.111	.327	**.612**	.290
13. Tengo miedo que el parto tenga lugar en casa.	.122	.230	.404	**.484**	.087
14. Temo no darme cuenta del comienzo del parto y no saber cuándo debo ir al hospital.	.110	.160	.366	**.546**	.264
19. Me preocupa que la dilatación y el parto sean complicados o no estén dentro de la normalidad.	.154	.492	.198	**.546**	.318
20. Aunque estoy informada y preparada en relación al parto temo tener comportamientos inadecuados durante el mismo y que pueda perder el control.	.185	.413	.320	**.536**	.258
35. Tengo miedo al parto, porque nunca he pasado por ello y me da miedo lo desconocido.	.178	.366	.063	**.728**	.080
36. Me preocupa que pueda gritar y perder el control durante el parto.	.325	.305	.258	**.656**	.105
37. Me da miedo perder mucha sangre durante el parto.	.225	.430	.361	**.584**	.005
1. Estoy preocupada por la crianza de mi hijo y mi habilidad como madre.	.151	.429	–.074	.115	**.542**
2. Me preocupan las fantasías que tengo sobre mi bebé.	.219	.291	.182	–.004	**.455**
3. Estoy preocupada por la dependencia emocional que tengo de las personas que me son cercanas.	.192	.125	.125	.154	**.592**
16. Me preocupa no ser capaz de dar el pecho.	.178	.166	.179	.363	**.447**
17. Me preocupa la falta de dinero para cubrir mis necesidades.	.245	.218	.252	.229	**.427**
41. Estoy un poco preocupada porque tengo poca experiencia con niños pequeños y tengo miedo de sentirme insegura cuando tenga que cuidar al bebé.	.298	.196	–.085	.330	**.400**
47. Me preocupa el hecho de no ser capaz de dar a nuestro hijo lo que necesite cuando vuelva al trabajo después de la baja por maternidad	.272	.252	.239	.100	**.530**

Note: Factor 1 = Concern for changes in oneself and in relationships; Factor 2 = Fear for the integrity of the baby; Factor 3 = Feelings about oneself; Factor 4 = Fear of childbirth; Factor 5 = Concerns about the future and ability as a mother.

the total PRAQ, strong correlation with the STAI-trait (r = .50) and moderate correlation with the EPDS (r = .46), and the STAI-state (r = .46) were found. Likewise, regarding the correlation among the different factors that conform the PRAQ and EPDS, the STAI-state and STAI-trait ranged from .34 to .50.

On the other hand, there is good concurrent validity among the overall scale and its different factors, as the correlation ranges from .82 to .88. The correlation of the factors with each other ranges from .53 to .75.

Reliability

Internal consistency was calculated via Cronbach's alpha for every factor and the sum of the factors. In this sample, both the reliability of the total PRAQ scale (α = .97) and of factors 1, 2, 3 and 4 of that scale (α = .93, .91, .89 and .91, respectively) was excellent. In this regard, the reliability of factor 5 was acceptable (α = .78).

The analysis of the homogeneity of each of the items it was found that most of items present correlation with the total scale with values ranging from .43 to .74. Only item 39 presents inferior correlation (r = .38). Likewise, after performing this analysis in relation to each factor, Factors 2, 3 and 4 presented greater homogeneity among their items, as it ranges from .54 to .80. Factor 5 presented inferior homogeneity ranging from .47 to .57, while the homogeneity of Factor 1 ranges from .47 to .70.

Pregnancy-related anxiety vs general anxiety

A proportion of 19.1% (n = 70) of women had high scores on pregnancy-related anxiety with a cut-off point of 234 or more (85th percentile of the PRAQ total scores). With a cut-off point of 32 or more for the STAI, 9.3% of women (n = 34) would have general anxiety. Finally, 4.4% of women (n = 16) would have both types

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Table 2. *Correlations of the PRAQ and EPDS, and STAI*

Pearson Correlation	EPDS	State Anxiety	Trait Anxiety	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Total PRAQ
EPDS	1	.63**	.69**	.46**	.38**	.40**	.34**	.37**	.46**
State Anxiety		1	.71**	.47**	.37**	.41**	.36**	.34**	.46**
Trait Anxiety			1	.50**	.41**	.44**	.38**	.43**	.50**
Factor 1				1	.53**	.75**	.64**	.70**	.87**
Factor 2					1	.67**	.72**	.64**	.81**
Factor 3						1	.73**	.67**	.88**
Factor 4							1	.66**	.86**
Factor 5								1	.82**

Note: Factor 1 = Concern for changes in oneself and in relationships; Factor 2 = Fear for the integrity of the baby; Factor 3 = Feelings about oneself; Factor 4 = Fear of childbirth; Factor 5 = Concerns about the future and ability as a mother.
** $p < .001$

of anxiety, general and pregnancy-specific. The difference in prevalence between pregnancy-related anxiety and general anxiety was statistically significant ($\chi^2 = 19{,}012$ $p < .001$, Cramer V = .228).

Discussion

The objective of this study was to adapt the PRAQ scale to a sample of Spanish pregnant women and analyze its psychometric properties. The results indicate that the Spanish version of the PRAQ used in our study present satisfactory psychometric properties.

Concerning the construct validity, the data extracted from the exploratory factorial analysis suggested a scale composed of 10 factors. However, after analyzing the percentage of the variance explained and considering the parsimony and interpretability criteria, we decided to carry out the confirmatory analysis with a five -factor model that explained 53.1% of the variance. Additionally, this model would match the one proposed by the author of the original scale (van den Bergh, 1990). However, the grouping of the items within the subscales differs from the one proposed by the author. The greater discordance would be located in Factors 1 and 4, which are referred to as "concern for oneself and the partner relationship during pregnancy" and "fear for changes", respectively, by van den Bergh. Most items from these two factors have been grouped between Factor 1 "concern for changes in oneself and in relationships" and Factor 3 "feelings about oneself", but in a different way than they appear in the original model. Factor 5, which could be referred to as "concerns about the future and the ability as a mother" maintains certain equivalence with Factor 5, which the author refers to as "concern about future mother-child, father-child relationship and partner relationship". However, in our case, only items related to future mother-child relationships would be grouped in this factor. The fact that these discordant elements make reference to concerns influenced by cultural rules, as well as fears linked to mother-father-partner-child relationships suggests that these discrepancies could be related to sociocultural differences existing between both countries. Also, it may be that pregnancy anxiety is a rather diffuse concept which makes it difficult to formulate the questions in such a way that the content is recognizable for pregnant women (Huizink et al., 2004). In contrast to this, we have found the principal similarities in Factors 2 and 3, which the author refers to as "fear for the integrity of the baby" and "fear of delivery". Both of them could be compared to the Factors 2 and 4 found in this research and that group the concerns related to the well-being of the fetus and the newborn and to childbirth, respectively. The items included in these factors refer to very specific fears that are universally expressed by women during pregnancy and they may be less influenced by cultural issues. An example of universality of these factors is that, even using a reduced version of the scale in population coming from a different country (Finland), equivalence with both factors is detected, as Huizink et al. (2015) indicate that two of the factors that conform the reduced scale are "fear of giving birth" and "worries about bearing a physically or mentally handicapped child", which are factors that are similar to the ones considered in this study and the ones proposed in the original Dutch scale.

Concerning the three additional items, we propose reducing them to only one with three response choices, as the answers to such items are selective. This would make the scale simpler and more practical, leaving the following statement: "Until now, how do you think your pregnancy has been compared with other women´s? The answer choices would be: "More or less like most women", "Much better and pleasant than I expected" and "Much worse and harder than I imagined".

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In terms of concurrent validity, the results obtained show moderate correlations among the total PRAQ scale, the EPDS, and the STAI. Note that when we evaluate anxiety, we are also evaluating symptoms related to depression and vice versa due to the elevated comorbidity between them (Ross et al., 2003). An overlap between depression and anxiety symptoms has been recognized and the evaluation instruments STAI and EPDS do not evaluate only anxiety or depression, respectively (Tendais et al., 2014). Likewise, in relation to anxiety, this data would be congruent with the data found by Huizink et al. (2004) and Saisto, Salmela-Aro, Nurmi, and Halmesmäki (2001), who discovered that only about 8.0–27.0% of the variance of pregnancy anxiety was explained by general anxiety, concluding that both general anxiety and pregnancy-related anxiety should be taken into account as distinct, i.e., complementary and non-exclusive entities.

On the other hand, concerning intra-scale correlations, note that the factors that correlated with each other the most were "fear of giving birth" and "fear for the integrity of the baby", as they are conceptually related. Likewise, this latter fear is the one that presented the greatest relation to the total PRAQ.

The reliability of the total PRAQ scale (α = .97), and Factors 1, 2, 3 and 4 (α = .93, .91, .89 and .91, respectively) was excellent. Factor 5 showed acceptable reliability (α = .78). This shows that it is an instrument that presents good internal consistency both at the general level and in its subscales.

Regarding the prevalence obtained with the PRAQ, there is no established cut-off point for this measure, so we used the 85th percentile of the PRAQ's total scores to identify women with high scores on pregnancy-related anxiety. In the current study, the top 15% were identified using a cut-off score of 234 or more. With this cut-off point, the prevalence of pregnancy-related anxiety was 19.1%, which is a statistically significant difference compared to the prevalence obtained with the STAI (9.3%) with a cut-off point of 32 or more. This fact would corroborate two hypotheses proposed by Huizink et al. (2004); on the one hand, the data about pregnancy anxiety prevalence obtained with general anxiety scales could be underscoring the real number of women with high anxiety levels during pregnancy; on the other hand, it would be confirmed that general anxiety and pregnancy-related anxiety could be different entities.

Given this data, it is important to bear in mind that the STAI and PRAQ scales, being both self-report questionnaires, may be offering overestimated prevalence data. Matthey and Ross-Hamid (2012) concluded that half the women scoring high on self-report mood measures (i.e., EDS and HADS-A) during their first hospital visit in pregnancy are likely to have transient distress for predictable reasons and they no longer scored high when they were evaluated two weeks later.

This study has some limitations. The elevated number of items that conforms the PRAQ scale involved inferior initial receptivity of pregnant women to participate in the study, as well as greater complexity in the analysis and later interpretation of the results. These results suggest that the PRAQ could be benefited by a reduction of number of items. In this study we have chosen the validation of the original version of 55 items as a necessary step for the validation in the future of more abbreviated versions adapted to the Spanish population. Furthermore, the obtained sample is circumscribed to only one province in Spain and to the first trimester of pregnancy. Likewise, the representation of the sample could be improved by taking a wider territory for the sample, and future studies should use the PRAQ in the three trimesters to see which is more suitable, since the concerns faced by pregnant women may be different in each trimester (Matthey & Ross-Hamid, 2012) and the trajectory of the prevalence of anxiety varies throughout pregnancy (Figueiredo & Conde, 2011).

On the other hand, the sample used in this study only includes nulliparous women and therefore the results cannot be generalized to all pregnant women. This is because the PRAQ is not designed for its use in parous women because one item of the questionnaire "I am afraid of the labor, because I have never been through it before, I am afraid of the unknown" is not relevant for women who gave birth (Huizink et al. 2015).

Finally, we need to be cautious when considering the cut-off point used, since the ideal would be to have a clinical interview. Findings must be replicated using a clinical interview.

In spite of these limitations, this study adds important literature value, as it is the first study that uses the PRAQ in Spain to evaluate pregnancy-related anxiety.

We consider that test validation should be a continuous process, which raises the need to study more in depth the psychometric properties of the PRAQ applied in different moments during pregnancy, as well as propose more reduced versions that facilitate its use. The fact of existing discrepancies between the original model and the proposed model in this study does not represent any loss of discriminative power, but there may be cultural differences among the populations that affect item interpretation.

On the other hand, it would be important to study whether pregnancy-related anxiety could be predictor of maternal postpartum depression and anxiety, just like in the case of general anxiety (Míguez et al., 2017). Its detecting during pregnancy would be a great

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opportunity to initiate a possible intervention and prevent its appearance and postpartum consequences. In this context, it would also be important to determine whether pregnancy-specific anxiety could be a more effective predictor of adverse maternal and infant perinatal outcomes than general anxiety measures, as suggested by Dunkel Schetter and Tanner (2012) and Reck et al. (2013), which would require longitudinal designs.

In conclusion, the Spanish adaptation of the PRAQ scale would be composed of 55 items that would be divided into five factors (Factor 1: Concern for changes in oneself and in relationships; Factor 2: Fear for the integrity of the baby; Factor 3: Feelings about oneself; Factor 4: Fear of childbirth; Factor 5: Concerns about the future and ability as a mother), and one last comparison item with three excluding response alternatives. The psychometric properties of the PRAQ analyzed in this study indicate that it could be an adequate scale to measure pregnancy-specific anxiety in Spain.

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