# Spanish version of the Psychosis Attachment Measure: adaptation process and psychometric properties

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Artículo original

## SUMMARY

### Introduction

Attachment theory has recently been postulated as a useful framework for enhancing our understanding of the role of psychosocial and environmental factors in relation to the vulnerability, expression, and course of psychosis. In this paper we present the Spanish adaptation and psychometric properties of the Psychosis Attachment Measure (PAM), a 16-item self-report scale specifically designed to measure adult attachment in people with psychosis.

### Method

In study 1, the PAM was adapted into Spanish following the translation/back-translation procedure and was administered to 24 early psychosis patients to evaluate its intelligibility. In study 2, the psychometric properties of the scale were assessed in a sample of 235 university students. The students completed the PAM and the Relationship Questionnaire (RQ) via an Internet website.

### Results

Results from study 1 demonstrated that the Spanish version of the scale is semantically and conceptually equivalent to the original English version and that it is appropriate for use with people experiencing psychotic symptoms. Paralleling the findings from the English version of the instrument, results from study 2 indicated that two factors, conceptually representing anxiety and avoidance, underlie the Spanish version of the PAM. The anxiety and avoidance subscales were found to have adequate levels of internal reliability and to be associated in a theoretically predicted fashion with the four prototypes of adult attachment measured with the RQ.

### Discussion

The good psychometric properties exhibited by the instrument support its use for the assessment of adult attachment styles in the Spanish cultural context and allow for the comparability of findings across cultures. Having a Spanish instrument for assessing attachment in psychosis populations is a relevant contribution that opens up new avenues for research and clinical applications.

**Key words:** PAM, attachment, psychosis, Spanish adaptation, psychometric properties.

## RESUMEN

### Introducción

Recientemente se ha postulado a la teoría del apego como un marco conceptual de gran utilidad para mejorar la comprensión del papel de los factores psicosociales y ambientales en relación con la vulnerabilidad, expresión y curso evolutivo de la psicosis. En este artículo presentamos la adaptación española y las propiedades psicométricas de la *Psychosis Attachment Measure* (PAM), una escala de 16 reactivos diseñada para medir el apego adulto en población con psicosis.

### Método

En el estudio 1, la PAM se adaptó al español siguiendo la metodología de traducción/retrotraducción y se administró a 24 pacientes con psicosis temprana para evaluar su comprensión del instrumento. En el estudio 2 se analizaron sus propiedades psicométricas en una muestra de 235 estudiantes universitarios. Los estudiantes completaron la PAM y el Cuestionario de Relación (RQ) a través de una página de Internet.

### Resultados

Los resultados del estudio 1 demostraron que la adaptación del instrumento es conceptual y semánticamente equivalente a la versión original en inglés y que es apropiada para usarse en personas que presentan síntomas psicóticos. Replicando los hallazgos obtenidos con la medida original, los resultados del estudio 2 indicaron que dos factores, que conceptualmente representan ansiedad y evitación, subyacen a la versión española de la PAM. Las subescalas de ansiedad y evitación mostraron tener una consistencia interna adecuada, así como estar asociadas de forma teóricamente coherente con los cuatro prototipos de apego medidos con el RQ.

### Discusión

La escala presenta unas propiedades psicométricas adecuadas, lo cual apoya su utilización para la evaluación de los estilos de apego adulto en el contexto cultural español y hace posible la comparación de resultados obtenidos en diferentes culturas. Disponer de un instrumento en español para evaluar el apego en población con psicosis es una aportación relevante que abre nuevos panoramas en ámbitos clínicos y de investigación.

**Palabras clave:** PAM, apego, psicosis, adaptación española, propiedades psicométricas.

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# INTRODUCTION

There is mounting evidence supporting the central role of interpersonal relationships in understanding and treating a diverse array of psychiatric disorders.[1] A recent line of work has explored how Bowlby's[2-4] attachment theory can be used in the field of psychosis to enhance our understanding of how psychosocial factors impact on the vulnerability, expression, and course of psychotic disorders.[5-7] Specifically, it has been suggested that attachment theory and research could be useful for elucidating: 1. the developmental pathway through which childhood adversity can lead to psychotic symptoms;[8] 2. the difficulties in interpersonal and social functioning that characterize people with psychosis;[9,10] 3. the way in which attachment relationships contribute to the configuration of different coping styles that affect the course of, and recovery from, the disorder;[11] and 4. the underlying factors that influence treatment adherence, such as the therapeutic alliance.[9,12]

Attachment theory postulates that based on early interactions with significant figures individuals build mental representations or "internal working models" of the self and others.[3] These models are essential in shaping cognitive and affective processes throughout the lifespan and provide the foundation of an individual's attachment style.[13] Attachment styles are distinctive patterns of relational expectations, emotions, cognitions, and behaviors that are shaped by a person's cumulative attachment experiences.[13,14]

Individual differences in attachment may be characterized in terms of security versus insecurity. Interactions with available and sensitively responsive attachment figures promote a secure attachment style, characterized by comfort with closeness, confidence in the availability and trustworthiness of significant others, and the capacity to manage distress in constructive ways.[13,15] In contrast, when attachment figures are not responsive or emotionally available, the sense of security is not achieved, which can lead to the formation of insecure attachment styles.[15]

There is general consensus in the attachment literature about the existence of two independent dimensions regarding attachment insecurity. The two dimensions have been conceptualized from the "attachment behavioral systems" perspective as "anxiety" and "avoidance"[16] and from the "internal working models" perspective as representing the negativity of a person's "model of self" and "model of others".[17] The first dimension, model of self or anxiety, is associated with a negative self-image and reflects a strong desire for closeness as well as a fear of being rejected by significant figures. The second dimension, model of others or avoidance, is associated with a negative view of others and reflects a high need for self-reliance coupled with discomfort with closeness and emotional intimacy with others.[13,16]

Empirical research on the association between attachment and psychosis has provided evidence of a high prevalence of insecure styles in patients diagnosed with schizophrenia-spectrum disorders.[18,19] However, studies in this field have been limited, in part, by various methodological problems related to the difficulty of measuring attachment in people with psychosis with the most widely used measures.[20] Specifically, the use of the Adult Attachment Interview (AAI),[21] which is coded in terms of the coherence of a person's narrative in describing early experiences with attachment figures, has been questioned because the presence of positive symptoms may result in an incoherent discourse, therefore affecting the results of the interview.[22,23] On the other hand, the use of existing self-report instruments, which assess a person's thoughts, feelings, and behaviors in the context of close relationships,[13] has been questioned because they tend to focus on romantic relationships and are thus less suitable for people with psychosis, who are commonly isolated and are less likely to have a romantic partner.[24,25]

Berry et al.[20] developed the Psychosis Attachment Measure (PAM) out of the need to have an instrument of adult attachment designed specifically for use with people with psychosis. The PAM is composed of 16 items that assess the two dimensions of adult attachment, anxiety (eight items) and avoidance (eight items), and it also includes an open-ended question at the end asking respondents to indicate the relationships they were thinking about while answering the scale. The items were derived from existing self-report questionnaires,[16,17] but its adequacy for use in psychosis populations lies in the fact that, unlike most instruments, it is applicable to people who do not currently have, or have never had, a romantic relationship.[9] A further advantage of the PAM is that items are rated on a simple and anchored four-point Likert scale, which is more appropriate for people with psychosis who often experience cognitive difficulties that may complicate understanding wide-ranging scales with insufficient anchor points. The PAM was originally developed and validated in a sample of university students[20] and in subsequent years it has also been shown to have good psychometric properties in clinical samples.[9] In addition, its brevity of application and simplicity of scoring make it a practical tool for use in clinical and research settings.

In the present investigation two studies were carried out: The aim of study 1 was to perform a comprehensive process of cultural adaptation of the PAM into Spanish and to administer it to a group of people with early psychosis. Study 2 aimed to examine the psychometric properties of the Spanish adaptation by assessing its factor structure, criterion validity, and the internal consistency reliability of its subscales.

## STUDY 1

### Overview

There has been a call for researchers to describe in sufficient detail the procedures followed when translating and adapt-

ing attachment instruments from one culture to another.[26] In study 1 we report on the process followed to adapt the PAM into Spanish and describe how we arrived at the final version of the instrument after pre-testing it in a sample of early psychosis patients.

## METHOD

### Adaptation process

The linguistic and cultural adaptation of the PAM was carried out using the translation/back-translation method, which involves various steps that allow for corroboration of the semantic and conceptual equivalence between the original instrument and the generated version (figure 1). During the adaptation process the guidelines of the International Test Commission[27] were followed, as well as the suggestions provided by several authors.[26,28,29]

In the first step, two independent forward translations of the original instrument were made. Following the stipulations of Hambleton[29] to ensure that the translations preserve the nuances of the original items, the translations were carried out by Spanish-speaking persons who were not only familiar with both the target and source culture, but who were also knowledgeable of the constructs assessed by the measure. The two translations were reviewed independently by three additional evaluators, who compared all the items and pointed out those susceptible to improvements. Subsequently, meetings were held between the translators

and reviewers in which adjustments were made to the items with discrepancies and by consensus a first version of the scale was agreed upon.

The preliminary Spanish version was back-translated into English by a bilingual British clinical psychologist with residency in Barcelona, who was blind to the original version of the instrument. This first back-translation was then sent to the principal author of the English PAM (KB), who carried out a comparison between the original and the back-translated items. For this purpose she evaluated the conceptual equivalence (if the same theoretical construct is measured in both cultures) and the semantic equivalence (if the meaning is the same in both cultural contexts) of the items, using a four-category ranking with the following characteristics: The items that show full semantic and conceptual coincidence with the original ones are classified as "Type A". When items show satisfactory conceptual equivalence, but differ in one or more words from the original version, they are labeled as "Type B". Those items that preserve the original meaning but do not show a satisfactory conceptual equivalence are classified as "Type C". Finally, the "Type D" label is assigned to items with no coincidence between the back-translation and the original version.

The items that did not show "Type A" equivalence with respect to the originals were re-examined by the research team. Alternative formulations were proposed until a satisfactory version was accepted through consensus. The modified items were subjected to a new back-translation process and subsequently KB used the same classification system to assess whether the equivalence had improved for the problematic items.

### Pre-testing

In order to evaluate the intelligibility of the measure and refine it prior to assessing its psychometric properties, the generated Spanish version was pre-tested among 24 early psychosis patients linked to the Sant Pere Claver Early Psychosis Program (SPC-EPP), currently being carried out at three specialized Community Mental Health centers in Barcelona.[30] Patients ranged in age from 15 to 31 (M=23.46, SD=4.8) and 58.3% were men. Of these, 8 (33.3%) met DSM-IV criteria for a first episode of a psychotic disorder (FEP)[31] and 16 (66.7%) met criteria for one or more of the Ultra-High Risk for psychosis (UHR) groups based on the Comprehensive Assessment of At Risk Mental States (CAARMS).[32] Patients completed the questionnaire and were later asked about any difficulties in the comprehension of instructions, scale items, and response categories. Once this phase was completed, the research team incorporated the necessary changes and obtained the definitive Spanish version of the instrument.
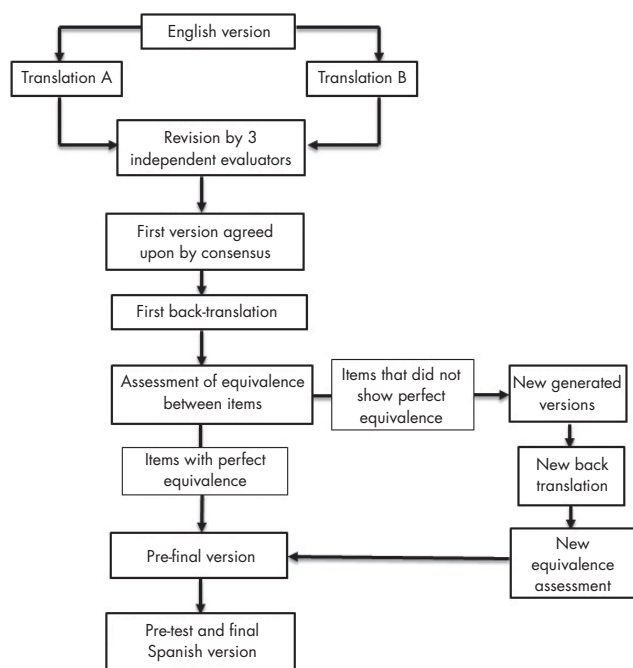


**Figure 1.** Outline of the steps involved in the adaptation process.

## RESULTS

### Adaptation process

The classification of the back-translated items according to their conceptual and semantic equivalence with the original version revealed that of the 16 items, 13 were classified as having "Type A" equivalence (81.25%) and 3 as "Type B" (18.75%). The open-ended question that composes the second part of the scale was rated as "Type A". No items received a "Type C" or "Type D" classification. With the purpose of improving the equivalence of the "Type B" items, the research team asked KB to nuance their meaning and discussed with her the use of certain terms. New Spanish alternatives were generated for these items for which a final version was agreed upon after an iterative process of new back-translation and equivalence assessment. For example, for item 2, it was decided to keep the term "*apoyarme en*" ("lean on") to reflect the English phrase "depend on" because the research team agreed that its linguistic equivalent ("*depender de*") has a more negative connotation in the Spanish cultural context. For item 14, "I worry that if I displease other people, they won't want to know me anymore", the team concluded that the literal Spanish translation of the phrase "won't want to know me anymore" ("*ya no querrán conocerme*") would be unclear to Spanish respondents and as such it was decided to use the wording "*ya no querrán relacionarse conmigo*" ("won't want to have a relationship with me").

### Pre-testing

The 24 early psychosis patients considered the questionnaire to be understandable, well structured, and easy to complete. Taking into account their feedback, the wording of three items (7, 13, and 16) was modified to improve their intelligibility. Also, one patient mentioned being unsure about how to respond to the scale and thus the research team decided to add the phrase "This statement describes me" ("*Esta frase me describe*") on top of the response categories in order to make it more straightforward for respondents.

## DISCUSSION

The adaptation process followed in this study has allowed us to obtain a Spanish version of the PAM that preserves the semantic and conceptual equivalence of the original English version. Furthermore, the results of the pre-test phase showed that the adapted instrument is appropriate for use with people experiencing psychotic symptoms in the Spanish cultural context. Carrying out this type of adaptation avoids the complexity of developing a new instrument and allows for making reference to the values obtained in the process of validation of the original measure. In sum, the present study demonstrated that the Spanish version of the PAM is a highly understandable instrument that shows good equivalence with the English version. This, in turn, guarantees to a considerable extent that the measure preserves the function and validity of the original questionnaire.

## STUDY 2

### Overview

The goal of the second study was to assess the psychometric characteristics of the Spanish version of the PAM. The specific aims were to examine the instrument's underlying factor structure, determine the internal consistency reliability of the anxiety and avoidance subscales, and assess its criterion validity by correlating its subscales with the four attachment prototypes measured by the Relationship Questionnaire (RQ).[17] It was hypothesized that a two-factor structure would underlie the Spanish adaptation of the instrument and that the anxiety and avoidance subscales would exhibit good internal consistency. Furthermore, it was predicted that the anxiety subscale would have a significant positive correlation with the RQ preoccupied prototype, whereas the avoidance subscale would have a significant positive correlation with the RQ dismissing prototype. The two subscales were also expected to show a positive, albeit smaller, association with the RQ fearful prototype (which is composed of high avoidance and high anxiety).

## METHOD

### Participants

Participants were 235 undergraduate and postgraduate students from public universities in Barcelona, who responded to an e-mail (sent out to approximately 360 students) that invited them to go to a web page to take part in a study about the instruments used to assess interpersonal relationships. Students volunteered to participate in the study and were not pre-selected based upon any criteria. Of the participants, 72 (30.6%) were men and 163 (69.4%) were women, with ages ranging from 19 to 55 (M=27.13, SD=5.93). The majority of the sample was composed of psychology students (54.5%).

### Measures

In addition to completing the Spanish version of the PAM, participants were asked to fill out the Relationship Questionnaire (RQ)[17] in its Spanish version.[33] The RQ is based on Bartholomew's[34] attachment model, which conceptualizes four prototypes of adult attachment based on the intersec-

tion of two underlying dimensions, model of self (or anxiety) and model of others (or avoidance). The RQ consists of four paragraphs, each describing a prototype of adult attachment: Secure (low avoidance, low anxiety), Dismissing (high avoidance, low anxiety), Preoccupied (low avoidance, high anxiety), and Fearful (high avoidance, high anxiety). Participants were asked to provide a rating for each description on a 7-point scale ranging from "strongly disagree" to "strongly agree" and to select the statement that best describes the way they approach close relationships. The RQ has been shown to have acceptable reliability and validity.[35,36] The continuous ratings of each attachment prototype were used for analyses.

## RESULTS

### Factor structure

A principal components analysis (PCA) with varimax rotation was performed on the 16 items to determine the underlying factor structure of the Spanish adaptation of the scale. Visual inspection of the scree plot clearly indicated a two-factor solution, consistent with the findings from the English version of the PAM. Therefore we proceeded to perform a second analysis with the extraction components fixed to two. The Kaiser-Meyer-Olkin measure confirmed the sampling adequacy for the analysis (KMO=.81), and Bartlett's Test of Sphericity, $\chi^2$ (120)=1015.90, p<.001, suggested that the correlations among items were sufficiently large for PCA.[37] The results revealed two distinct factors with all items loading substantially onto the expected factor. After rotation, loadings ranged from .52 to .77 and none of the items cross-loaded above .26 onto the other component (Appendix 1). The two factors contributed to 43.13% of the total variance, with the first factor (anxiety) accounting for 22.39% of the variance and the second factor (avoidance) explaining 20.75% of the variance.

### Internal consistency reliability

PAM scores for the anxiety and avoidance dimensions were calculated by averaging the scores for the items that loaded onto the anxiety and avoidance factors. Internal consistency reliability was assessed for the two subscales using Cronbach's Alpha. The coefficients were found to be .81 for the anxiety subscale and .78 for the avoidance subscale, which are comparable to the values reported for the English version of the scale.[9,20,38] The two dimensions were not significantly correlated (r=-.10, p=.14), suggesting that they are indeed distinct constructs.

### Criterion validity

Table 1 displays the association between the PAM subscale scores and the four RQ attachment prototype ratings. Con-

sistent with theoretical predictions, the results revealed that the anxiety dimension was most strongly correlated with the RQ preoccupied prototype (r=.44, p<.001), whereas the avoidance dimension was most strongly correlated with the RQ dismissing prototype (r=.46, p<.001). Note also that both subscale scores were significantly positively correlated with the fearful prototype, which comprises both high avoidance and high anxiety.

## DISCUSSION

Study 2 aimed to analyze the factor structure, internal consistency reliability, and criterion validity of the Spanish version of the PAM in a sample of university students. Results paralleled the findings obtained with the English instrument and suggest that the Spanish version of the scale works well in the Spanish cultural context. Firstly, as in Berry et al.,[9,20,38] the analysis revealed a two-factor structure representing the constructs of attachment anxiety and avoidance. Secondly, we found good levels of internal reliability for the instrument's subscales, with values comparable to those reported for the English PAM. Finally, support for criterion validity was obtained given that both the anxiety and avoidance dimensions were associated in a theoretically predicted fashion with the four prototypes of adult attachment measured by the RQ. Taken together, the findings indicate that the Spanish adaptation of the PAM displays good psychometric properties. Future work is warranted to investigate the psychometric characteristics of the scale with clinical samples as well as to determine its convergent and discriminant validity.

### General discussion

In the current scientific panorama, the field of psychosis is experiencing a considerable growth in the number of multicenter projects and multicultural investigations.[39-41] At the same time, practitioners and researchers addressing psychotic disorders have been increasingly encouraged to incorporate the evaluation of attachment styles in their assessments.[8] This emerging body of work has brought about the need to adapt the relevant assessment instruments so that they can be properly used in populations other than those for which they were designed. In the present research two studies were carried out with the purpose of adapting the PAM for use

**Table 1.** Associations between the PAM subscales and the four RQ prototypes of adult attachment

| PAM subscales | RQ prototypes | | | |
| --- | --- | --- | --- | --- |
| | Secure | Preoccupied | Dismissing | Fearful |
| Anxiety | .01 | .44* | -.25* | .22* |
| Avoidance | -.23* | .09 | .46* | .33* |

Note: RQ = Relationship Questionnaire; PAM = Psychosis Attachment Measure.
* p≤.001

in the Spanish cultural context. The findings demonstrated that the Spanish version of the scale maintains semantic and conceptual equivalence as well as comparable psychometric properties with respect to the English version.

The process of translation and cultural adaptation followed in study 1 allowed to ensure the equivalence and quality of the Spanish version of the scale. It is important to note that a very valuable step in the adaptation process was the examination of its adequacy for use with individuals experiencing psychotic symptoms. We purposely targeted early psychosis patients to pre-test the measure because attachment might be particularly significant in the onset of a psychotic disorder[9] and because in the prodromal and first-episode phases the interpersonal characteristics that impact on treatment engagement and the therapeutic alliance might be more accessible and amenable to intervention.[42]

The analyses performed in study 2 showed that the Spanish PAM has the intended factor structure, indicating that it clearly distinguishes the two insecure dimensions of adult attachment. The measure was also shown to have internally consistent subscales and appropriate concurrent validity with another measure of adult attachment. Overall, the good psychometric properties exhibited by the instrument support its use for the assessment of adult attachment styles and allow for the comparability of findings across cultures.

The current research had some limitations that should be taken into consideration when interpreting the results. The PAM's psychometric properties were tested in a sample of university students with predominantly female participants. Future studies should examine the scale in non-student samples with wider variability in terms of socio-demographic characteristics. Moreover, although the psychometric characteristics of the English version of the scale have been replicated in both clinical and university student samples, research is required with clinical populations in order to expand the validation of the Spanish instrument by relating it to clinical, treatment, and outcome measures. An additional limitation of the present investigation was the use of an Internet-based approach to recruit participants because this method restricts the sample to students who were self-selected. However, from an ethical standpoint, web designs allow research participants to withdraw from the study at any time while keeping their anonymity, so participation can be considered to be less contaminated by motivational confounding.[43]

In closing, the Spanish version of the PAM appears to be a reliable and valid self-report measure of adult attachment. Considering that attachment theory has recently been postulated as a useful framework that may afford valuable insights into the affective, cognitive, and interpersonal components that contribute to the vulnerability, development, and course of psychosis,[6,7] having an instrument for assessing attachment styles in the Spanish population with psychosis is a relevant contribution that opens up new avenues for research and clinical applications.

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Declaration of conflict interest: None

## Appendix A

### Principal components analysis with varimax rotation and scoring procedure

| Item | Factor 1 Anxiety | Factor 2 Avoidance |
|---|---|---|
| **3.** Tiendo a entristecerme, ponerme ansioso/a o enfadarme si otras personas no están ahí cuando las necesito. | **.709** | -.157 |
| **5.** Me preocupa que personas importantes en mi vida no estén presentes en un futuro. | **.593** | .119 |
| **6.** Pido a los demás que me reafirmen que les importo. | **.626** | -.148 |
| **7.** Me afecta mucho que otras personas no aprueben lo que hago. | **.696** | -.090 |
| **10.** Me preocupa que si la gente llega a conocerme mejor, no les voy a gustar. | **.547** | .255 |
| **12.** Me preocupo mucho por mis relaciones con otras personas. | **.681** | -.109 |
| **14.** Me preocupa que si no complazco a los demás ya no querrán relacionarse conmigo. | **.678** | .143 |
| **15.** Me preocupa tener que afrontar solo/a mis problemas y situaciones difíciles. | **.670** | -.196 |
| **1.** Prefiero no mostrar a otras personas mis verdaderos pensamientos y sentimientos. | .002 | **.621** |
| **2.** Me es fácil apoyarme en otras personas cuando tengo problemas o situaciones difíciles. (R) | -.114 | **.768** |
| **4.** Normalmente hablo sobre mis problemas y preocupaciones con otras personas. (R) | -.195 | **.710** |
| **8.** Encuentro difícil aceptar la ayuda de otras personas cuando tengo problemas o dificultades. | .155 | **.618** |
| **9.** Me ayuda acudir a otras personas cuando estoy estresado/a. (R) | -.195 | **.541** |
| **11.** Cuando me siento estresado/a, prefiero estar solo/a a estar acompañado/a por otras personas. | .074 | **.603** |
| **13.** Trato de afrontar por mí mismo/a las situaciones estresantes. | -.170 | **.520** |
| **16.** Me siento incómodo/a cuando otras personas quieren conocerme mejor. | .176 | **.573** |

*Note.* Items rated: 0, not at all *(nada)*; 1, a little *(un poco)*; 2, quite a bit *(bastante)*; 3, very much *(mucho)*. (R) = Reverse items (2, 4, and 9).
Scoring: Anxiety: (3 + 5 + 6 + 7 + 10 + 12 + 14 + 15) / 8; Avoidance: (1 + 2 + 4 + 8 + 9 + 11 + 13 + 16) / 8.