Mireia Rabella[*1,2,3]
Eva Grasa[*1,2,5]
Joan Trujols[1,2]
Ignasi Gich[2,4,5]
Rafael Torrubia[5]
Iluminada Corripio[1,2,5]
Víctor Pérez[2,5,6]
Jordi Riba[1,4]

Validation of a Spanish version of the Schizotypal Personality Questionnaire (SPQ): Psychometric characteristics and underlying factor structure derived from a healthy university student sample

[1] Servei de Psiquiatria, Hospital de la Santa Creu i Sant Pau. Barcelona, Spain
[2] Centro de Investigación Biomédica en Red de Salud Mental, CIBERSAM
[3] Departament de Farmacologia, de Terapèutica i de Toxicologia. Universitat Autònoma de Barcelona, Spain
[4] Centre d'Investigació del Medicament, Institut de Recerca, Servei Farmacologia Clínica, Hospital de la Santa Creu i Sant Pau. Barcelona, Spain
[5] Departament de Psiquiatria i de Medicina Legal. Universitat Autònoma de Barcelona. Barcelona, Spain
[6] Institut de Neuropsiquiatria i Addiccions, Hospital del Mar, IMIM (Hospital del Mar Medical Research Institute), Barcelona, Spain
*These authors participated equally in the study

Objective. The need for early detection, prevention and intervention in psychosis has prompted the study of prodromal and threshold syndromes. One strategy involves the assessment of schizotypy, a personality construct involving unusual perceptual experiences, magical thinking or bizarre behavior. Sensitive measurement instruments could potentially allow detection of signs heralding transition to psychosis in high-risk individuals, or risk of relapse in patients after a first psychotic episode. The Schizotypal Personality Questionnaire (SPQ) is a self-report scale, originally developed for English speakers, that covers the nine DSM-IV criteria for schizotypal personality disorder (SPD). Our aim was to validate a Spanish version of the SPQ and assess its psychometric properties.

Methods. The original SPQ was back-translated and administered to university students (n=250). We assessed the internal consistency, the convergent, discriminant and criterion validity of the instrument, and analyzed its factor structure.

Results. Our version of the SPQ showed good internal consistency, and convergent (O-LIFE), discriminant (P-scale of EPQ) and criterion validity (SCID-II). Factor analyses supported a four-factor structure in fitting SPQ data.

Conclusions. Our Spanish version of the SPQ questionnaire preserved the psychometric properties of the original questionnaire. This adaptation will provide a useful tool for the early detection of prodromal schizophrenia symptoms and clinical relapse in Spanish-speaking populations.

Keywords: Schizotypy, Schizotypal Personality Questionnaire (SPQ), Cross-cultural Adaptation, Factorial Structure

Actas Esp Psiquiatr 2018;46(5):159-73

Correspondence:
Jordi Riba
Grupo de Investigación en Neurofarmacología Humana, IIB-Sant Pau
C/Sant Antoni Maria Claret, 167
08025 Barcelona (Spain)
Tel.: +34 93 556 5518
Fax: +34 93 553 7864
E-mail: jriba@santpau.cat

Validación de una versión española del Cuestionario de Personalidad Esquizotípica (SPQ): Características Psicométricas y estructura factorial en una muestra de estudiantes universitarios sanos

Objetivo. La detección, prevención e intervención precoz en psicosis ha llevado al estudio de los estadios prodrómicos y las experiencias psicóticas (*psychotic experiences, o PE*). La evaluación de la Esquizotipia supone una estrategia para el estudio de la vulnerabilidad a desarrollar psicosis, y representa un constructo de la personalidad que comprende experiencias perceptivas inusuales, pensamiento mágico, o conducta extraña. El desarrollo de instrumentos sensibles para medir estas características puede dar lugar a una mayor detección de los signos de transición a psicosis en personas con alto riesgo a desarrollarla, y del riesgo de recaídas en pacientes después de un primer episodio psicótico. El Cuestionario de Personalidad Esquizotípica *(Schizotypal Personality Questionnaire - SPQ)* es una escala autoadministrada desarrollada originalmente en inglés, que cubre los nueve criterios del DSM-IV para el Trastorno de Personalidad Esquizotípica (TEP). En el presente estudio se pretende realizar

una versión española del SPQ, mediante la traducción del cuestionario, la evaluación de sus propiedades psicométricas, y su validación.

Método. El SPQ original fue traducido al castellano y administrado en una muestra de estudiantes universitarios (n=250). Evaluamos la consistencia interna, validez convergente, validez divergente, y la validez de criterio del instrumento, y analizamos su estructura factorial.

Resultados. Nuestra versión del cuestionario SPQ muestra una buena consistencia interna, validez convergente (O-LIFE), discriminante (escala P del EPQ) y validez de criterio (SCID-II). El análisis factorial da soporte a una estructura de cuatro factores según los datos de bondad de ajuste de la escala.

Conclusiones. Nuestra versión española del cuestionario SPQ preserva las propiedades psicométricas del cuestionario original. Esta adaptación puede ser una herramienta útil para la detección temprana de síntomas prodrómicos de la esquizofrenia, y de recaídas clínicas en población castellano-hablante.

Palabras Clave: Esquizotipia, Cuestionario de Personalidad Esquizotípica (SPQ), Adaptación transcultural, Estructura factorial

INTRODUCTION

Early onset and duration of untreated psychosis (DUP) are predictive of poorer outcomes in people with schizophrenia[1]. Additionally, persisting sub-clinical symptoms in diagnosed patients increase the probability of relapse[2]. Thus, the need for sensitive detection measures of prodromal and postdromal phenomena has prompted research into personality traits potentially linked to psychosis proneness. Schizotypy is a pattern of personality traits that is elevated in individuals at risk of schizophrenia[3]. From a fully-dimensional approach, schizotypy would lie on a continuum within the healthy domain of functioning in the general population[4]. Alternatively, the quasi-dimensional approach[5] places schizotypy in the illness domain of functioning. Individuals scoring high in schizotypy, or meeting criteria for schizotypal personality disorder (SPD), would show attenuated psychotic-like traits such as perceptual distortions, magical thinking, eccentric or odd behaviour, and reduced capacity to develop close relationships[6].

Assessment methods reflect the alternative nosological approaches. The Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE) is an instrument based on the fully-dimensional approach and is designed to quantify schizotypy in the normal population[7]. The Schizotypal Personality Questionnaire (SPQ) is based on the quasi-dimensional approach. The questionnaire provides quantitative measures along a continuum that tap into the nine diagnostic criteria of the SPD set in the DSM[8].

High scores on the SPQ and O-LIFE are thought to reflect the individual's proneness to suffering psychotic disorders such as schizophrenia. As with interview-based assessments[9], several studies have shown these self-report instruments to be a useful indicator of individual risk of schizophrenia[7,10,11]. Furthermore, Burley et al.[12] postulated that "low-level symptoms that endure after initial recovery could indicate a higher risk of subsequent relapse" in individuals with a history of full-blown psychotic episodes. Considering that around 50% of people who have suffered a first psychotic episode will relapse within 18 months, there is a need for sensitive instruments capable of detecting and quantifying these lingering sub-clinical symptoms. Given the absence of reliable indicators of prodromal stages of psychosis, this scale may help earlier detection in patients with a high risk of developing psychosis.

Both the Schizotypal Personality Questionnaire (SPQ)[8] and its short version, the SPQ-B[13], were developed taking into account the quasi-dimensional approach to schizotypy. Items were specifically designed to tap into the nine SPD criteria defined by the DSM-V (14). Since its appearance, the SPQ has been widely used as a self-report tool to diagnose SPD, to assess non-clinical levels of psychotic-like features in healthy populations[15–17], and in relatives of patients with SPD and schizophrenia[18]. Regarding its psychometric characteristics, the SPQ has shown good reliability and validity[8,19], although there have been some inconsistencies in capturing its underlying factor structure[16,20]. The SPQ was initially developed for English-speaking populations and has since been translated into several other languages, such as French[21], Italian[22], Greek[20], Turkish[23] and Chinese[24]. In this paper, after briefly summarizing the development process of an adaptation of the SPQ –the Spanish version of the SPQ authorized by the author of the original instrument and afterwards used in several studies[25], we explored its psychometric properties with regard to internal consistency and validity in a sample of medical students. We also sought to analyze the factor structure of the Spanish version using confirmatory factor analysis, and compare it with previously published factorial solutions.

MATERIALS AND METHODS

Subjects

Study participants were 253 medical students from the Universitat Autònoma of Barcelona (Spain). Only those subjects who responded to all items (n=250) were included in the analyses. Seventy participants were male and 180 fe-

male (age range 18-44 years). Prior to enrolment, written informed consent to participate was obtained. The study was approved by the Clinical Research Ethics Committee of the Hospital de la Santa Creu i Sant Pau (Barcelona, Spain). The study was performed in accordance with the Declaration of Helsinki and its subsequent revisions, as well as with the ICH Good Clinical Practice Guidelines.

Instruments

The following instruments were collectively administered in a classroom situation:

The Schizotypal Personality Questionnaire (SPQ)

The SPQ is a 74-item self-report questionnaire with a "yes/no" response format[8]. Each "yes" answer is scored as 1, and each "no" answer is scored as 0. The SPQ includes nine subscales that reflect the nine diagnostic criteria set for SPD in the DSM-III-R and subsequent revisions: 1) Ideas of reference (9 items); 2) Odd beliefs/magical thinking (7 items); 3) Unusual perceptual experiences (9 items); 4) Paranoid ideation (8 items); 5) Social anxiety (8 items); 6) No close friends (9 items); 7) Constricted affect (8 items); 8) Eccentric/odd behavior (7 items); and 9) Odd speech (9 items). The SPQ yields a total score (range: 0-74) and nine subscale scores, together with scores for each of the following three factors: Cognitive-Perceptual, Interpersonal, and Disorganization[19].

This version of the SPQ was developed according to good practice principles for translating and adapting assessment tools to the cultural context[26,27]. The translation-back translation procedure consisted of three independent translations by three members of the research group (EG, JR, and the Prof. Manel Barbanoj[†]), who all had a good command of English and Spanish, and were familiar with both cultures and with the schizotypy construct. The three translations were compared and a consensus version was obtained for the wording of every item. This Spanish version was translated independently back into English by another group of three translators, with no knowledge of the original questionnaire. Their consensus English version was revised by Professor Adrian Raine, author of the original SPQ, who certified the meaning equivalence between the original and the backtranslated versions (personal communication). The final version is shown in Appendix.

The Oxford-Liverpool Inventory of Feelings and Experiences (O-LIFE)

The O-LIFE is a psychometric instrument designed to measure schizotypy in the normal population[7]. It is also a self-report questionnaire, and includes 159 items with a "yes/no" response format. The questionnaire has a four-factor structure: Unusual Experiences, Cognitive Disorganization, Introvertive Anhedonia and Impulsive Nonconformity. The Spanish version of the O-LIFE, validated in individuals living in the Barcelona area (Spain), was administered. The O-LIFE was used in the present study to assess convergent validity for the Spanish version of the SPQ in a subsample of 158 students (40 participants were male and 118 were female, age range 18-44 years).

The Psychoticism Subscale of the Eysenck Personality Questionnaire (EPQ)

The EPQ[28] includes a Psychoticism (P) subscale that assesses antisocial traits that have been found to herald future psychosis, although it includes features that are not part of the DSM-V diagnostic criteria for SPD. This scale consists of 20 items scored in a "yes/no" format, and was chosen to test discriminant validity.

The Structured Clinical Interview for the DSM-IV Axis II Personality Disorders (SCID-II)

In addition to the instruments described above, those individuals presenting SPQ scores in the top or bottom ten-percent of the distribution were invited to undergo a clinical interview using the SCID-II, a semi-structured interview used to diagnose personality disorders[29]. Interviews were conducted at the outpatient service (Hospital de la Santa Creu i Sant Pau) by a trained psychologist blind to group membership (top or bottom ten-percent) and without knowledge of the SPQ score obtained by the participant in the previous assessment. The SCID-II was used to test criterion validity. Each diagnostic criterion assessed by the SCID-II was measured on a 3-point Likert scale (1=absent, 2=subthreshold, 3=threshold). In order to reach a positive SPD diagnosis, subjects have to score at threshold level in at least 5 of the 9 diagnostic criteria.

Statistical Analysis

Descriptive statistics

Summary statistics for scores on the different subscales of the SPQ and O-LIFE questionnaire were calculated for the whole study sample and for men and women separately. Mean and standard deviations are provided in the results section for total SPQ scores, scores on each of the nine individual subscales and the three factors defined by Raine et

al.[8,19]. Potential gender differences in scores were tested using the Mann-Whitney U test (MWU).

Reliability and Validity

The following psychometric characteristics were studied: a) Reliability was tested assessing internal consistency using Cronbach's alpha coefficient; b) Convergent validity was computed using Spearman's correlation coefficient, by correlating the total score, the scores on each of the nine subscales, and the scores on the three factors obtained for the Spanish version of the SPQ with the scores on the four scales of the O-LIFE; c) Discriminant validity was assessed calculating Spearman's correlation coefficients between the total SPQ score and the scores on the EPQ P-scale; d) Criterion validity was assessed by a chi-square analysis using Yates' correction, and was performed between group allocation (ten-percent high/low cut-off scores on the total SPQ score) and the SPD clinical diagnosis (yes/no) based on the SCID-II.

Analyses were performed using the PASW Statistics 18 (SPSS Inc., Chicago, IL, USA) software. Cronbach's alpha coefficients were interpreted according to the ranges of clinical significance proposed by George and Mallory[30]. Spearman correlation coefficients were appraised using the ranges for interpreting effect size recommended by Rosenthal[31].

Factor structure analysis

In addition to its 9 subscales and total score, the SPQ provides three factors termed Cognitive-Perceptual, Interpersonal and Disorganization[19]. However, the underlying factor structure of schizotypy has been subject to debate, with various models having been proposed (see below). Here we wished to test the factor structure of the Spanish version of the SPQ using Confirmatory Factor Analysis (CFA). Based on prior research, six factor models were evaluated: i) a one-factor model, which assumes that one latent trait underlies all nine subscales of the SPQ; ii) a two-factor model based on the dichotomous distinction between positive (1) and negative (2) schizotypal traits[32]; iii) a *paranoid* three-factor model in which positive schizotypal traits are divided into two factors, cognitive-perceptual (1) and paranoid (3), and negative schizotypal traits make up one negative factor (2)[33]; iv) an *odd* three-factor model, involving positive (1), negative (2) and odd (3) factors[34]; v) a *disorganized* three-factor model, where the nine subscales are distributed in the following three factors: cognitive-perceptual (1), negative (2) and disorganized (3)[19]; and vi) a *paranoid* four-factor model, which postulates that the nine schizotypal traits can be divided into cognitive-perceptual (1), negative (2), disorganized (3) and paranoid (4) factors[20]. The six different models are summarized in Table 1.

In order to provide a baseline to compare these models with, the null-model was fitted. As the traditional chi-square test to assess goodness-of-fit is sensitive to sample sizes, other commonly used tests were also calculated: Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Normed Fit Index (NFI), Akaike Information Criterion (AIC), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), and Standardized Root Mean Square Residual (SRMR). The CFA was performed with LISREL 8[35], using the correlation matrix as the input matrix and the maximum likelihood method of estimation as the parameter estimation method. Goodness-of-fit indices for the CFA were evaluated based on the cut-off values recommended by Browne and Cudeck[36], Hu and Bentler[37], and Mueller and Hancock[38]. The AIC is a comparative measure to compare two models with good fit, where a smaller value indicates a better fit.

RESULTS

Descriptive statistics and Reliability

Table 2 shows descriptive statistics (means, standard deviations and range) for the total SPQ and O-LIFE scores and their respective subscales and factors. Also included in the table are Cronbach's alpha coefficients for the total SPQ, subscales and factor scores.

The final study sample showed a mean total SPQ score of 21.83 (SD=11.78), ranging from 1 to 56. The 10th percentile was 8 and the 90th percentile was 38. Reliability analysis showed a good internal consistency for the total score, with a Cronbach's alpha coefficient of 0.90. Values were acceptable for the nine subscales, ranging between 0.57 and 0.83 and with a mean value of 0.70.

Table 3 shows the above data separated by gender and the results of the between-gender comparisons. As may be seen, males scored significantly lower than females on the social anxiety scale and higher on the eccentric/odd behaviour scale and in the disorganization factor.

Convergent Validity

Table 4 shows Spearman's correlation coefficients between SPQ and O-LIFE factors.

All SPQ factors were positively correlated with O-LIFE except for the following two pairs: a) SPQ cognitive-perceptual vs. O-LIFE introvertive anhedonia; and b) SPQ disorgani-

Table 1 Schematic of the six different factor models tested using Confirmatory Factor analysis of the SPQ. Data from n=250 250 healthy university students. Factor structures predicted by each of the models tested

	FACTOR MODELS															
SPQ	**One-factor**	**Two-factor[a]**		**"Paranoid" three-factor[b]**			**"Odd" three-factor[c]**			**"Disorganized" three-factor[d]**			**"Paranoid" four-factor[e]**			
Subscales	1	1	2	1	2	3	1	2	3	1	2	3	1	2	3	4
IR	1	1	0	0	0	1	1	0	0	1	0	0	0	0	0	1
MT	1	1	0	1	0	0	1	0	0	1	0	0	1	0	0	0
UPE	1	1	0	1	0	0	1	0	0	1	0	0	1	0	0	0
PI	1	1	0	0	0	1	1	0	0	1	1	0	0	1	0	1
SA	1	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1
NCF	1	0	1	0	1	0	0	1	0	0	1	0	0	1	0	0
CA	1	0	1	0	1	0	0	0	1	0	1	0	0	1	0	0
OB	1	1	0	0	1	0	0	0	1	0	0	1	0	0	1	0
OS	1	1	0	0	1	0	0	0	1	0	0	1	0	0	1	0

IR: Ideas of reference; MT: Odd beliefs/magical thinking; UPE: Unusual perceptual experiences; PI: Paranoid ideation; SA: Social anxiety; NCF: No close friends; CA: Constricted affect; OB: Eccentric/odd behavior; OS: Odd speech.

[a]Siever & Gunderson (1983)

[b]Bergman et al. (1996)

[c]Battaglia et al. (1997)

[d]Raine et al. (1994)

[e]Stefanis et al. (2004)

zation vs. O-LIFE introvertive anhedonia. Strong correlations were found between the SPQ cognitive-perceptual and the O-LIFE unusual experiences factors; and between the SPQ interpersonal and the O-LIFE cognitive disorganization factors. The SPQ disorganization factor showed moderate correlations with the O-LIFE unusual experiences and cognitive disorganization factors. The total SPQ score correlated strongly with total O-LIFE score.

Discriminant Validity

Spearman's correlation between the total SPQ score and the EPI P-subscale was weak (*Rho*=0.097) and not statistically significant.

Criterion Validity

The low and high ten-percent cut-off points of the distribution of total SPQ scores were 8 (*n*=26) and 38 (*n*=11), respectively. These two groups of extreme scorers were invited to participate in a meeting with a clinician, who administered the SCID-II structured interview of the DSM-IV-TR. Eleven (out of 26) low scorers and 5 (out of 11) high scorers agreed to be interviewed. The results provided by the blind rater showed that none of the eleven low scorers met the diagnostic criteria for SPD based on the clinical interview. On the other hand, 4 of the 5 high scorers interviewed met the diagnostic criteria for SPD. A chi-square analysis using Yates' correction indicated a significant association between group assignment (low vs. high SPQ scorers) and clinical diagnosis (positive vs. negative) for SPD (X^2 =7.85, *p*=0.001).

Factor structure analysis

CFA was applied using the six different factor models shown in Table 1. Goodness-of-fit indices obtained for each of these six models are presented in Table 5. All six models tested show better fit indices than the null model. The disorganized three-factor and the paranoid four-factor models yielded the best results, with satisfactory GFI, AGFI and AIC

Table 2 Summary data obtained for our Spanish version of the SPQ and the O-LIFE questionnaires. The table includes descriptive statistics and Cronbach's alpha coefficients for each subscale and for the global scores. The study sample comprised 250 healthy university students

SPQ				
SPQ Subscales	Mean	SD	Range	Cronbach's Alpha
IR	2.76	2.13	0-9	0.70
MT	1.43	1.61	0-7	0.67
UPE	1.96	1.82	0-9	0.66
PI	2.28	1.87	0-8	0.70
SA	3.36	2.24	0-8	0.76
NCF	2.23	1.73	0-9	0.65
CA	1.69	1.47	0-8	0.57
OB	1.20	1.84	0-7	0.83
OS	2.64	2.10	0-9	0.68
Global Score	21.83	11.78	1-56	0.90
O-LIFE				
O-LIFE Subscales	Mean	SD	Range	Cronbach's Alpha
UnEx	6.20	5.75	0-26	n.a.
CogDis	8.87	5.50	0-24	n.a.
IntAn	4.78	3.24	1-18	n.a.
ImpNon	7.05	3.28	1-19	n.a.
Global Score	26.90	12.74	6-67	n.a.

SPQ: IR: Ideas of reference; MT: Odd beliefs/magical thinking; UPE: Unusual perceptual experiences; PI: Paranoid ideation; SA: Social anxiety; NCF: No close friends; CA: Constricted affect; OB: Eccentric/odd behavior: OS: Odd speech.
O-LIFE: UnEx: Unusual experiences; CogDis: Cognitive disorganization; IntAn: Introvertive anhedonia; ImpNon: Impulsive Nonconformity. n.a.: not assessed.

indices. In addition, the paranoid four-factor model showed good NFI and RMSEA indices.

Table 6 shows the standardized factor loadings and intra-model factor correlations between the latent factors of the best model obtained, the paranoid four-factor model. All factor loadings were statistically significant (p<0.0001).

DISCUSSION

The purpose of the present study was to develop and validate a Spanish version of the full SPQ questionnaire. We aimed to provide a reliable instrument that enables the detection of sub-clinical psychotic symptoms and facilitates the early detection of disease and the prevention of relapse in this population. Our analysis showed that scores obtained for the Spanish version, administered to a university student sample, are in line with previously published data for other versions of the scale in terms of total mean score, range and percentiles. However, both the American sample assessed by Raine and the Greek sample assessed by Stefanis showed higher scores in positive symptoms[8,20]: Raine: sample 2; ideas of reference: mean=4.33, SD=2.4; unusual perceptual experiences: mean=2.83, SD=2.2; paranoid ideation: mean=3.39, SD=2.4). Stefanis: ideas of reference: mean=4.98, SD=2.10; unusual perceptual experiences: mean=2.61, SD=2.17; paranoid ideation: mean=3.75, SD=2.06).

Compared with our version, the Chinese version showed higher scores in all subscales of the SPQ[24]. Cultural differ-

Table 3 Medians, standard deviations (SD), Mann-Whitney U (MWU) and p values comparing males (n=70) and females (n=180) on the Spanish version of the SPQ scores

	Men		Women			
SPQ	**Median**	**SD**	**Median**	**SD**	**MW U**	**p**
SPQ Subscales						
IR	2.00	2.21	2.00	2.10	5.766.0	0.322
MT	1.00	1.84	1.00	1.49	5.380.0	0.072
UPE	2.00	2.07	1.00	1.72	5.775.0	0.328
PI	2.00	1.72	2.00	1.93	5.866.5	0.427
SA	2.00	1.88	3.00	2.23	3.829.0	**<0.001**
NCF	2.00	1.98	2.00	1.64	6.189.0	0.880
CA	2.00	1.53	1.00	1.44	5.341.0	0.064
OB	1.00	1.86	0.00	1.81	4.761.5	**0.001**
OS	2.00	2.24	2.00	2.05	5.815.0	0.373
SPQ 3 Factor-Model						
Cog	8.00	5.85	7.00	5.62	5.825.5	0.389
Int	9.00	5.23	9.00	5.37	5.734.0	0.298
Dis	4.00	3.41	3.00	3.23	5.137.5	**0.026**
SPQ Global Score	21.50	11.44	19.00	11.97	5.822.0	0.386
O-LIFE						
O-LIFE Subscales						
UnEx	5.00	7.353	4.00	4.954	1.917.500	0.076
CogDis	7.00	5.638	8.00	5.435	2.015.000	0.167
IntAn	5.00	3.639	4.00	3.049	1.961.500	**0.044**
ImpNon	7.00	3.320	7.00	3.263	2.134.500	0.365
Global Score	27.00	14.345	24.50	12.105	2.081.500	0.265

SPQ: IR: Ideas of reference; MT: Odd beliefs/magical thinking; UPE: Unusual perceptual experiences; PI: Paranoid ideation; SA: Social anxiety; NCF: No close friends; CA: Constricted affect; OB: Eccentric/odd behavior: OS: Odd speech. Cog: Cognitive-Perceptual factor; Int: Interpersonal factor; Dis: Disorganization factor.
O-LIFE: UnEx: Unusual experiences; CogDis: Cognitive disorganization; IntAn: Introvertive anhedonia; ImpNon: Impulsive Nonconformity.

ences between different populations could account for this dissimilarity[39].

When examining the relationship between gender and Spanish SPQ scores, the current study supports previous research[40–43]. No differences in total scores were found. Regarding subscale scores, men scored higher than women in the Odd behavior subscale. Thus, as occurs in schizophrenia, behavioral differences in scores often tend to favor women[24].

When comparing social anxiety subscale scores, women scored higher than men. This finding is comparable with previous studies[43,44], and is consistent with other research documenting a greater number of affective symptoms in women with schizophrenia than in men[45,46].

Table 4 Spearman correlation coefficients between SPQ and O-LIFE factors. *p<0.05; **p<0.01

SPQ Factors	O-LIFE Subscales				O-LIFE global
	UnEx	CogDis	IntAn	ImpNon	
Cog	0.65**	0.43**	0.13	0.30**	0.59**
Int	0.26**	0.50**	0.33**	0.16*	0.46**
Dis	0.45**	0.47**	0.13	0.36**	0.54**
SPQ global	0.54**	0.55**	0.25**	0.30**	0.63**

SPQ: Cog: Cognitive-Perceptual factor; Int: Interpersonal factor; Dis: Disorganization factor.
O-LIFE: UnEx: Unusual experiences; CogDis: Cognitive disorganization; IntAn: Introvertive anhedonia; ImpNon: Impulsive Nonconformity. n.a.: not assessed.

Although previous research has revealed gender differences in negative symptomatology[47–49], this finding has not always been confirmed[18-54]. Nevertheless, results in the Spanish version of the SPQ for higher disorganization symptomatology in men are consistent with previous studies[40,43,44]. This study did not find women to score higher on positive schizotypal features than men[43,49], these scores being similar to Miller and Burnes[41], Yu[24] and Raine[8]. In these studies, sex differences in the unusual perceptual experiences subscale were small and inconsistent[50].

Our version shows a degree of internal consistency similar to other adapted versions, such as the translations into French[21] (alpha=0.91; range=0.57-0.76), Italian[22] (alpha=0.90; range=0.57-0.84), Greek[20] (alpha=0.91; range=0.58-0.80), Turkish[44] (alpha=0.91; range=0.66-0.83), and Chinese[24] (alpha=0.91; range=0.52-0.79).

Table 5 Confirmatory Factor Analysis. Goodness-of-fit indices obtained for each the six different factor models tested and the "null" models

Model	χ^2	df	p	GFI[1]	AGFI[2]	NFI[3]	AIC[4]	RMSEA[5] (90% CI)	CFI[6]	SRMR[7]
Null	1034.60	36	<0.001	0.60	0.06	0.47	1052.60	0.391 (0.37-0.41)	0.47	0.28
One-factor	278.55	27	<0.001	0.79	0.65	0.73	339.31	0.203 (0.18-0.22)	0.75	0.124
Two-factor	157.58	26	<0.001	0.87	0.78	0.85	201.38	0.146 (0.13-0.17)	0.87	0.091
Paranoid three-factor	211.09	24	<0.001	0.83	0.68	0.80	276.18	0.188 (0.93-1.32)	0.81	0.110
Odd three-factor	214.58	24	<0.001	0.84	0.70	0.79	255.95	0.178 (0.16-0.20)	0.81	0.114
Disorganized three-factor	117.37	23	<0.001	0.91	0.83	0.89	154.13	0.123 (0.10-0.15)	0.91	0.073
Paranoid four-factor	58.75	19	<0.001	**0.95**	0.88	0.94	**109.50**	0.090 (0.06-0.12)	**0.96**	**0.052**

GFI: Goodness-of-Fit Index; AGFI: Adjusted Goodness-of-Fit Index; NFI: Normed Fit Index; AIC: Akaike Information Criterion; RMSEA: Root Mean Square Error of Approximation; CFI: Comparative Fit Index; SRMR: Standardized Root Mean Square Residual.
Thresholds for close fit: [1,2,3,6] ≥0.95; [4] lower value; [5] ≤0.06; [7] ≤0.08)

We noted some interesting results regarding the SPQ and O-LIFE factors comparison. Similar to previous studies[51,52], these scales measure the same concept of schizotypy. Nevertheless, the moderate correlations found between factors may reflect the different theoretical approaches of each instrument, namely a personality-based conceptualization (O-LIFE) versus a broader clinical perspective (SPQ). Consistent with previous findings[51,52], correspondence between measures of *positive schizotypy* (Cognitive Perceptual, Unusual Experiences) and *disorganized schizotypy* (Disorganization, Cognitive Disorganization) was replicated. However, the association between measures of *negative schizotypy* (Interpersonal and Introversive Anhedonia) is less clear. The SPQ Interpersonal factor correlated significantly with the O-LIFE Introversive Anhedonia subscale (InAn), but also with the O-LIFE Cognitive Disorganization (CoDi). These results are not consistent with the findings reported by Barkus and coworkers[53] but are comparable with those reported by Asai et al.[51]. These authors suggest that the SPQ Interpersonal factor includes two different features, social anxiety (content similar to CoDi) and dysregulation of affect (an aspect measured by InAn). Finally, Impulsive Nonconformity (ImpNon) showed a lack of consistency, as previously reported[54]. Considered a controversial factor, the rationale of including ImpNon in a model of schizotipy will depend on the definition of schizotypy[54,55].

Table 6 Standardized factor loadings and intra-model factor correlations derived from the latent factors of the "paranoid" four-factor model. All factor loadings were statistically significant (p<0.0001)

	"Paranoid" four-factor model			
SPQ Subscales	Cog	Neg	Dis	Par
	(Factor 1)	(Factor 2)	(Factor 3)	(Factor 4)
IR				1.026
MT	0.693			
UPE	0.837			
PI		0.332		0.478
SA		0.456		0.289
NCF		0.760		
CA		0.792		
OB			0.646	
OS			0.620	
	"Paranoid" four-factor model			
Intra-Model Factor Correlations	Cog	Neg	Dis	-
Neg	0.156	-	-	
Dis	0.782	0.556	-	-
Par	0.620	0.145	0.538	-

SPQ: IR: Ideas of reference; MT: Odd beliefs/magical thinking; UPE: Unusual perceptual experiences; PI: Paranoid ideation; SA: Social anxiety; NCF: No close friends; CA: Constricted affect; OB: Eccentric/odd behavior: OS: Odd speech.
"Paranoid" four-factor model: Cog: Cognitive/Perceptual; Neg: Negative; Dis: Disorganized: Par: Paranoid.

Another important issue in the research of schizotypy regards the dimensionality and the number of factors that make up this construct. As previously reported, our results indicate that one- or two-dimensional models of schizotypy are insufficient to completely explain individual differences[19,20,22]. The three-factor model did not yield the best results, as in previous studies involving healthy individuals and versions of the SPQ in several different languages (original version: Wuthrich and Bates[40]; French version: Dumas et al.[21]; Italian version: Fossati et al.[43]. The *paranoid* four-factor model was tested based on the postulated results in recent research[16,17,56]. This structure assumes that schizotypy comprises four factors: negative and disorganized, which would respectively correspond to the Interpersonal and Disorganized factors described by Raine et al.[19]; and cognitive-/perceptual and paranoid, which measure positive schizotypal symptoms. Using this model, better fit indices were yielded because cognitive/perceptual and paranoid components were treated as separate entities. This affords a better explanation of variance in our data. Paranoia could therefore be viewed as an important underlying trait of schizotypy, as previously reported by Stefanis et al.[20]. The four-factor model was better than the other three-factor models explored in the present study. The *paranoid* three-factor model was improved by introducing a disorganization factor that includes odd speech and behavior. Raine's *disorganized* three-factor model and Battaglia's *odd* three-factor model were also improved by dividing positive symptoms into paranoid and cognitive/perceptual factors. In summary, our results from the factorial structure analysis of the SPQ are in line with data from the Greek version[20]. Stefanis et al. (2004) support the multidimensionality of a construct of positive symptoms. Studies in patients with schizophrenia clearly support dividing positive symptomatology into the two dimensions mentioned above[43,57]. This suggests that conceiving a four-factor structure in schizotypy might increase the sensi-

tivity of the SPQ in detecting prodromal symptoms in at-risk populations, and help prevent relapse in patients with psychotic symptomatology.

Some methodological limitations of this study should be recognized. The first was the limited sample size, although it was similar to previous studies (eg,[8,22]). Second, although the use of non-clinical highly-educated samples such as psychology and medical students is common practice in this field of research (eg,[13,22,40]), it does raise doubts as to the generalizability of the results. Third, the imbalance in the gender distribution of the sample (predominance of women) could be a potential source of bias. The relevance of this limiting factor is probably small if we consider the large number of studies that have shown the invariance of the SPQ factor structure between men and women in non-clinical samples (eg,[40,43,58,59]). Finally, the lack of data on the participant's family history of psychiatric disorders, and the lack of "sincerity" items controlling for participants who may have responded randomly or dishonestly, are further limitations that could affect the generalizability of the results.

To conclude, we undertook here the translation and validation of a Spanish version of the full SPQ questionnaire. The adaptation showed good reliability, and convergent and discriminant validity, preserving the psychometric properties of the original questionnaire. We believe the present adaptation will constitute a useful tool for the assessment of sub-clinical psychotic symptoms in native Spanish speakers. This instrument will facilitate early disease detection and relapse prevention in the target population.

ACKNOWLEDGEMENTS

This study was supported in part by Fundació La Marató de TV3 (Spain), Instituto de Salud Carlos III, Centro de Investigación Biomédica en Red de Salud Mental (CIBERSAM), and FEDER funds of the EU and CERCA Programme / Generalitat de Catalunya. The authors would like to thank the volunteers for their participation, and Carolyn Newey and Phil Grayston for assisting with the proof-reading of the manuscript. This study is dedicated to Prof. Manel J. Barbanoj in memoriam.

CONFLICTS OF INTEREST

All authors declare that they have no conflicts of interest.

REFERENCES

1. Penttila M, Jaaskelainen E, Hirvonen N, Isohanni M, Miettunen J. Duration of untreated psychosis as predictor of long-term outcome in schizophrenia: systematic review and meta-analysis. Br J Psychiatry. 2014;205(2):88–94.
2. Barrantes-Vidal N, Grant P, Kwapil TR. The role of schizotypy in the study of the etiology of schizophrenia spectrum disorders. Schizophr Bull. 2015;41(2):S408–16.
3. Barrantes-Vidal N, Gross GM, Sheinbaum T, Mitjavila M, Ballespí S, Kwapil TR. Positive and negative schizotypy are associated with prodromal and schizophrenia-spectrum symptoms. Schizophr Res. 2013;145(1–3):50–5.
4. Claridge G BT. Fully and quasi-dimensional constructions of schizotypy. In: Schizotypal Personality Disorder. Cambridge, UK: Cambridge University Press; 1995. p. 192–216.
5. Lenzenweger MF. Schizotaxia, schizotypy, and schizophrenia: Paul E. Meehl's blueprint for the experimental psychopathology and genetics of schizophrenia. J Abnorm Psychol. 2006 May;115(2):195–200.
6. Raine A. Schizotypal Personality: Neurodevelopmental and Psychosocial Trajectories. Annu Rev Clin Psychol. 2006 Apr; 2(1):291–326.
7. Mason O, Claridge G, Jackson M. New scales for the assessment of schizotypy. Pers Individ Dif. 1995;18(1):7–13.
8. Raine A. The SPQ: a scale for the assessment of schizotypal personality based on DSM-III-R criteria. Schizophr Bull. 1991; 17(4):555–64.
9. DC C, EA M, TM B, AR D, JG K. Correspondence between Psychometric and Clinical High Risk for Psychosis in an Undergraduate Population. 2013;80(4):631–7.
10. Calkins ME, Curtis CE, Grove WM, Iacono WG. Multiple dimensions of schizotypy in first degree biological relatives of schizophrenia patients. Schizophr Bull. 2004;30(2):317–25.
11. Venables PH. Schizoypal status as a developmental stage in studies of risk of schizophrenia. In: Raine A, Lencz T MS, editor. Schizotypal Personality Disorder. Cambridge, UK: Cambridge University Press; 1995. p. 107–31.
12. Burley K, Upthegrove R, Birchwood M, Patterson P, Skeate A. "Schizophrenia postdrome": A study of low-level psychotic experience after remission of first-episode schizophrenia. Early Interv Psychiatry. 2009;3(4):296–9.
13. Raine A, Benishay D. The SPQ-B: A Brief Screening Instrument for Schizotypal Personality Disorder. J Pers Disord. 1995 Dec 1;9(4):346–55.
14. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (5th ed.). American Psychiatric Association, editor. Washington DC; 2013.
15. Noguchi H, Hori H, Kunugi H. Schizotypal traits and cognitive function in healthy adults. Psychiatry Res. 2008 Nov;161(2):162–9.
16. Fonseca-Pedrero E, Fumero A, Paino M, de Miguel A, Ortuño-Sierra J, Lemos-Giráldez S, et al. Schizotypal personality questionnaire: new sources of validity evidence in college students. Psychiatry Res. 2014 Sep;219(1):214–20.
17. Barron D, Swami V, Towell T, Hutchinson G, Morgan KD. Examination of the factor structure of the schizotypal personality questionnaire among British and Trinidadian adults. Biomed Res Int. 2015;2015:12–6.
18. Walter EE, Fernandez F, Snelling M, Barkus E. Genetic consideration of schizotypal traits: A review. Front Psychol. 2016;7.
19. Raine A, Reynolds C, Lencz T, Scerbo A, Triphon N, Kim D. Cognitive-perceptual, interpersonal, and disorganized features of schizotypal personality. Schizophr Bull. 1994;20(1):191–201.
20. Stefanis NC, Smyrnis N, Avramopoulos D, Evdokimidis I,

Ntzoufras I, Stefanis CN. Factorial composition of self-rated schizotypal traits among young males undergoing military training. Schizophr Bull. 2004;30(2):335–50.
21. Dumas P, Bouafia S, Gutknecht C, Saoud M, Dalery J, d'Amato T. [Validation of the French version of the Raine Schizotypal Personality Disorder Questionnaire--categorial and dimensional approach to schizotypal personality traits in a normal student population]. Encephale. 2000;26(5):23–9.
22. Rossi A, Daneluzzo E. Schizotypal dimensions in normals and schizophrenic patients: a comparison with other clinical samples. Vol. 54, Schizophrenia research. Netherlands; 2002. p. 67–75.
23. Lahmar M A, Leila G, Faouzia B, Anwar M. Psychometric properties of the arabic version of the schizotypal personality questionnaire in Tunisian university students. Tunis Med. 2014 May;92(5):318–22.
24. Yu J, Bernardo ABI, Zaroff CM. Chinese version of the Schizotypal Personality Questionnaire: Factor structure replication and invariance across sex. Asia-Pacific Psychiatry. 2016;8(3):226–37.
25. Rabella M, Grasa E, Corripio I, Romero S, Mañanas MÀ, Antonijoan RM, et al. Neurophysiological evidence of impaired self-monitoring in schizotypal personality disorder and its reversal by dopaminergic antagonism. NeuroImage Clin. 2016;11:770–9.
26. Balluerka N, Gorostiaga A, Alonso-Arbiol I, Haranburu M. La adaptación de instrumentos de medida de unas culturas a otras: Una perspectiva práctica. Psicothema. 2007;19(1):124–33.
27. Wild D, Grove A, Martin M, Eremenco S, McElroy S, Verjee-Lorenz A, et al. Principles of Good Practice for the Translation and Cultural Adaptation Process for Patient-Reported Outcomes (PRO) Measures: report of the ISPOR Task Force for Translation and Cultural Adaptation. Value Heal J Int Soc Pharmacoeconomics Outcomes Res. 2005;8(2):94–104.
28. Eysenck SBG, Garcia Sevilla L, Torrubia R, Ávila C OG. Versió catalana de l'Eysenck Personality Questionnaire per a la mesura de la personalitat (Catalan version of the Eysenck Personality Questionnaire). Ann Med. 1992;223–30.
29. First MB. SCID II: Guía del usuario para la entrevista clínica estructurada para los trastornos de la personalidad del eje II del DSM-IV. Entrevista clínica estructurada para los trastornos de la personalidad del eje II del DSM-IV. Cuestionario de personalidad. Masson; 1999.
30. George D, Mallery P. SPSS for Windows Step by Step: Answers to Selected Exercises. A Simple Guid Ref. 2003;63.
31. Rosenthal JA. Qualitative Descriptors of Strength of Association and Effect Size. J Soc Serv Res. 1996 Oct 11;21(4):37–59.
32. Crow TJ. Molecular pathology of schizophrenia: more than one disease process? Br Med J. 1980;280(6207):66–8.
33. Bergman AJ, Harvey PD, Mitropoulou V, Aronson A, Marder D, Silverman J, et al. The factor structure of schizotypal symptoms in a clinical population. Schizophr Bull. 1996;22(3):501–9.
34. Battaglia M, Cavallini MC, Macciardi F, Bellodi L. The structure of DSM-III-R schizotypal personality disorder diagnosed by direct interviews. Schizophr Bull. 1997;23(1):83–92.
35. Jöreskog KG, Sörbom D. LISREL 8: Structural equation modeling with the SIMPLIS command language. Scientific Software International; 1993.
36. Browne MW, Cudeck R. Alternative ways of assessing model fit. Sage Focus Ed. 1993;154:136.
37. Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Struct Equ Model a Multidiscip J. 1999;6(1):1–55.
38. Mueller RO, Hancock GR. Best practices in structural equation modeling. Best Pract Quant methods. 2008;488508.
39. Iwamasa GY, Larrabee AL, Merritt RD. Are personality disorder criteria ethnically biased? A card-sort analysis. Cultur Divers Ethnic Minor Psychol. 2000 Aug;6(3):284–96.
40. Wuthrich VM, Bates TC. Confirmatory factor analysis of the three-factor structure of the schizotypal personality questionnaire and Chapman schizotypy scales. J Pers Assess. 2006 Dec;87(3):292–304.
41. Miller LS, Burns SA. Gender differences in schizotypic features in a large sample of young adults. J Nerv Ment Dis. 1995 Oct;183(10):657–61.
42. Raine A. Sex differences in schizotypal personality in a nonclinical population. J Abnorm Psychol. 1992 May;101(2):361–4.
43. Fossati A, Maffei C, Battaglia M, Bagnato M, Donati D, Donini M, et al. Latent class analysis of DSM-IV schizotypal personality disorder criteria in psychiatric patients. Schizophr Bull. 2001;27(1):59–71.
44. Bora E, Baysan Arabaci L. [Confirmatory factor analysis of schizotypal personality traits in university students]. Turk Psikiyatri Derg. 2009;20(4):339–45.
45. Ochoa S, Usall J, Cobo J, Labad X, Kulkarni J. Gender Differences in Schizophrenia and First-Episode Psychosis: A Comprehensive Literature Review. Schizophr Res Treatment. 2012;2012:1–9.
46. Morgan VA, Castle DJ, Jablensky A V. Do women express and experience psychosis differently from men? Epidemiological evidence from the Australian National Study of Low Prevalence (Psychotic) Disorders. Aust N Z J Psychiatry. 2008;42(1):74–82.
47. Häfner H. Gender differences in schizophrenia. Psychoneuroendocrinology. 2003;28:17–54.
48. Usall J, Haro JM, Ochoa S, Márquez M, Araya S, group N of P with S. Influence of gender on social outcome in schizophrenia. Acta Psychiatr Scand. 2002;106(5):337–42.
49. Bora E, Baysan Arabaci L. Effect of age and gender on schizotypal personality traits in the normal population. Psychiatry Clin Neurosci. 2009;63(5):663–9.
50. Miettunen J, Jääskeläinen E. Sex differences in wisconsin schizotypy scales-a meta-analysis. Schizophr Bull. 2010; 36(2):347–58.
51. Asai T, Sugimori E, Bando N, Tanno Y. The hierarchic structure in schizotypy and the five-factor model of personality. Psychiatry Res. 2011;185(1–2):78–83.
52. Reeder C, Rexhepi-Johansson T, Wykes T. Different components of metacognition and their relationship to psychotic-like experiences. Behav Cogn Psychother. 2010 Jan;38(1):49–57.
53. Barkus E, Stirling J, Hopkins R, McKie S, Lewis S. Cognitive and neural processes in non-clinical auditory hallucinations. Br J Psychiatry Suppl. 2007 Dec;51:s76-81.
54. Cochrane M, Petch I, Pickering AD. Do measures of schizotypal personality provide non-clinical analogues of schizophrenic symptomatology? Psychiatry Res. 2010;176(2–3):150–4.
55. Pickering AD. The neuropsychology of impulsive antisocial sensation seeking personality traits: From dopamine to hippocampal function. In: On the psychobiology of personality: Essays in honor of Marvin Zuckerman. Elsevier, Ltd. Boston; 2004. p. 453–77.

56. Compton MT, Goulding SM, Bakeman R, McClure-Tone EB. Confirmation of a four-factor structure of the Schizotypal Personality Questionnaire among undergraduate students. Schizophr Res. 2009;111(1–3):46–52.
57. Liddle PF, Barnes TR. Syndromes of chronic schizophrenia. Br J Psychiatry. 1990; 157:558–61.
58. Reynolds CA, Raine A, Mellingen K, Venables PH, Mednick SA. Three-factor model of schizotypal personality: invariance across culture, gender, religious affiliation, family adversity, and psychopathology. Schizophr Bull. 2000;26(3):603–18.
59. Badcock JC, Dragović M. Schizotypal personality in mature adults. Pers Individ Dif. 2006;40(1):77–85.

Appendix **Spanish version of Schizotypal Personality Questionnaire.**

CUESTIONARIO DE PERSONALIDAD ESQUIZOTÍPICA (SPQ; RAINE A, 1991)

NOMBRE: _____ HOMBRE: /__/ MUJER: /__/ (marca uno)

FECHA DE NACIMIENTO (DD/MM/AAAA): ___/___/_____ LUGAR DE NACIMIENTO: _____

OCUPACIÓN LABORAL: _____

Por favor, contesta cada pregunta marcando S (Sí) o N (No). Responde a todos los ítems aunque no estés seguro de la respuesta. Una vez finalizado el cuestionario, comprueba que no hayas dejado ningún ítem sin contestar.

1. ¿Sientes a veces que algunas cosas que ves en la tele o lees en los periódicos tienen un significado especial para ti?	S	N
2. A veces evito ir a lugares donde hay mucha gente porque me pongo ansioso.	S	N
3. ¿Has tenido experiencias con fenómenos sobrenaturales?	S	N
4. ¿A menudo has confundido objetos o sombras con personas, o ruidos con voces?	S	N
5. Los demás me consideran algo excéntrico (raro).	S	N
6. Tengo poco interés en llegar a conocer a los demás.	S	N
7. A veces a la gente le cuesta entender lo que digo.	S	N
8. A veces la gente me encuentra desapegado y distante.	S	N
9. Estoy seguro de que se habla de mí a mis espaldas.	S	N
10. Soy consciente de que la gente se fija en mí cuando como fuera o voy al cine.	S	N
11. Me pongo muy nervioso cuando tengo que dar conversación por educación.	S	N
12. ¿Crees en la telepatía (lectura de la mente)?	S	N
13. ¿Has tenido alguna vez la sensación de que hay alguien o alguna fuerza a tu alrededor, aunque no puedas ver a nadie?	S	N
14. A veces la gente hace comentarios sobre mi porte y hábitos poco usuales.	S	N
15. De preferencia soy reservado.	S	N
16. A veces, al hablar, salto con rapidez de un tema a otro.	S	N
17. No expreso muy bien mis verdaderos sentimientos con mi forma de hablar y mirar.	S	N
18. ¿A menudo sientes que los demás la tienen tomada contigo?	S	N
19. ¿Algunas personas sueltan indirectas sobre ti o dicen cosas con doble sentido?	S	N
20. ¿Alguna vez te pones nervioso cuando hay alguien caminando detrás de ti?	S	N
21. ¿A veces tienes la certeza de que los demás se dan cuenta de lo que estás pensando?	S	N
22. ¿Alguna vez, al mirar a otra persona o a ti mismo en un espejo, has visto cómo cambiaba la cara ante tu vista?	S	N
23. A veces los demás piensan que soy algo raro.	S	N
24. Soy bastante callado cuando estoy con gente.	S	N
25. A veces me olvido de lo que estoy intentando decir.	S	N

Appendix **Continuation**		
26. Rara vez me río o sonrío.	S	N
27. ¿Te preocupa a veces que tus amigos o compañeros de trabajo no sean verdaderamente leales o de confianza?	S	N
28. ¿Has notado alguna vez que un hecho u objeto cotidiano pareciera ser una señal especial para ti?	S	N
29. Me pongo ansioso cuando conozco a alguien por primera vez.	S	N
30. ¿Crees en la clarividencia (fuerzas psíquicas, adivinación del porvenir)?	S	N
31. Con frecuencia oigo una voz que dice mis pensamientos en alto.	S	N
32. Algunas personas piensan que soy muy extravagante.	S	N
33. Me resulta difícil la proximidad emocional con otras personas.	S	N
34. A menudo, al hablar, me explayo y divago demasiado.	S	N
35. Mi comunicación no-verbal (sonreír y asentir durante una conversación) es pobre.	S	N
36. Siento que debo estar en guardia, incluso con mis amigos.	S	N
37. ¿Ves a veces significados especiales en anuncios, en escaparates o en la manera en que las cosas están dispuestas a tu alrededor?	S	N
38. ¿A menudo te sientes nervioso cuando estás en un grupo de personas que no conoces muy bien?	S	N
39. ¿Pueden los demás sentir tus sentimientos cuando no están contigo?	S	N
40 ¿Has visto alguna vez cosas que eran invisibles para los demás?	S	N
41. ¿Sientes que no tienes un trato de verdadera confianza con nadie aparte de tus familiares más cercanos, o que no tienes con quien sincerarte o hablar de problemas personales?	S	N
42. Algunas personas me encuentran algo vago y evasivo al conversar.	S	N
43. No sé corresponder muy bien a los gestos y expresiones de cortesía.	S	N
44. ¿A menudo captas amenazas o desaires velados en lo que dicen o hacen los demás?	S	N
45. Cuando vas de compras, ¿sientes que los demás se fijan en ti?	S	N
46. Me siento muy incómodo en situaciones sociales donde participan personas que no conozco muy bien.	S	N
47. ¿Has tenido experiencias con la astrología, visiones del futuro, OVNIS, percepciones extrasensoriales o un sexto sentido?	S	N
48. ¿Las cosas cotidianas parecen extrañamente grandes o pequeñas?	S	N
49. Escribir cartas a los amigos es un esfuerzo que no merece la pena.	S	N
50. A veces utilizo palabras de forma poco habitual.	S	N
51. Tiendo a evitar el contacto visual al conversar con los demás.	S	N
52. ¿Según tu experiencia es mejor no dejar que los demás sepan demasiado de ti?	S	N
53. Cuando ves a otros conversando, ¿a menudo te preguntas si estarán hablando de ti?	S	N
54. Estaría muy ansioso si tuviera que pronunciar un discurso ante un grupo grande de personas.	S	N
55. ¿Alguna vez has sentido que te comunicas telepáticamente con otra persona (leyendo la mente)?	S	N
56. ¿A veces tu sentido del olfato se vuelve excepcionalmente agudo?	S	N
57. En general, procuro no destacar en los eventos sociales.	S	N
58. ¿Cuando mantienes una conversación sueles salirte del tema?	S	N

Appendix	**Continuation**		
59. A menudo siento que los demás la tienen tomada conmigo.		S	N
60. ¿A veces sientes que los demás te están observando?		S	N
61. ¿Alguna vez te sientes repentinamente distraído por sonidos lejanos en los que normalmente no sueles fijarte?		S	N
62. Le concedo poca importancia a tener amigos íntimos.		S	N
63. ¿A veces sientes que la gente está hablando de ti?		S	N
64. ¿A veces tus pensamientos son tan fuertes que casi puedes oírlos?		S	N
65. ¿A menudo tienes que tener cuidado para impedir que se aprovechen de ti?		S	N
66. ¿Sientes que eres incapaz de acercarte a la gente?		S	N
67. Soy una persona rara, peculiar.		S	N
68. No tengo una forma de hablar ni expresiva ni animada.		S	N
69. Me cuesta comunicar con claridad lo que quiero decir.		S	N
70. Tengo algunos hábitos excéntricos (raros).		S	N
71. No estoy nada a gusto al hablar con personas poco conocidas.		S	N
72. Alguna vez la gente comenta que mi conversación es confusa.		S	N
73. Tiendo a reservarme mis sentimientos.		S	N
74. A veces la gente se me queda mirando por mi extraño aspecto.		S	N