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Brief assessment of schizotypal traits: A multinational study

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ABSTRACT

The Schizotypal Personality Questionnaire-Brief (SPQ-B) was developed with the aim of examining variations in healthy trait schizotypy, as well as latent vulnerability to psychotic-spectrum disorders. No previous study has studied the cross-cultural validity of the SPQ-B in a large cross-national sample. The main goal of the present study was to analyze the reliability and the internal structure of SPQ-B scores in a multinational sample of 28,426 participants recruited from 14 countries. The mean age was 22.63 years (SD = 7.08; range 16–68 years), 37.7% (n = 10,711) were men. The omega coefficients were high, ranging from 0.86 to 0.92 for the

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total sample. Confirmatory factor analysis revealed that SPQ-B items were grouped either in a theoretical structure of three first-order factors (Cognitive-Perceptual, Interpersonal, and Disorganized) or in a bifactor model (three first-order factors plus a general factor of schizotypal personality). In addition, the results supported configural but not strong measurement invariance of SPQ-B scores across samples. These findings provide new information about the factor structure of schizotypal personality, and support the validity and utility of the SPQ-B, a brief and easy tool for assessing self-reported schizotypal traits, in cross-national research. Theoretical and clinical implications for diagnostic systems, psychosis models, and cross-national mental health strategies are derived from these results.

1. Introduction

In the past two decades, the early and reliable identification of individuals potentially at-risk for psychotic-spectrum disorders, based on psychometric indices, has become a focus of extensive and expanding research and debate (Addington et al., 2015; Fonseca-Pedrero et al., 2016b; Fusar-Poli et al., 2014; Kline and Schiffman, 2014; Mason, 2015). The identification of specific subgroups of individuals at high risk for psychotic-spectrum disorders may help us to elucidate both risks factors and protective factors, as well as etiological mechanisms and developmental pathways that mitigate, delay, or even prevent the onset of clinically significant psychotic disorders (Barrantes-Vidal et al., 2015).

Schizotypal traits are considered to be a phenotypic-indicator of schizotypy (Meehl, 1962), a latent personality organization reflecting a putative liability for schizophrenia-spectrum disorders (Barrantes-Vidal et al., 2015; Fonseca Pedrero and Debbané, 2017; Lenzenweger, 2010). Schizotypal traits encompass anomalies and deficits across cognitive (e.g., paranoid ideation, ideas of reference), social/emotional (e.g., anhedonia, no close friends), and behavioral (e.g., odd behavior and language) systems (Cohen et al., 2015; Fonseca-Pedrero et al., 2017). Previous findings support the notion of assumed phenomenological, temporal, and etiological continuity between the subclinical and clinical psychosis phenotype and lend validity to the concept of schizotypal traits (Cohen et al., 2015; Ettinger et al., 2014; Linscott and van Os, 2013).

Several measurement instruments allow clinicians and researchers to document the presence, frequency, and severity of schizotypal traits (Fonseca-Pedrero et al., 2016b; Mason, 2015). These tools have been developed with the aim of examining variation in healthy trait schizotypy, as well as latent vulnerability to psychotic-spectrum disorders, in both clinical and non-clinical populations (e.g., general population, clinical, and genetic high risk samples). The Schizotypal Personality Questionnaire (SPQ) (Raine, 1991), in its brief version (SPQ-B) (Raine and Benishay, 1995), or its brief revised version (SPQ-BR) (Cohen et al., 2010), measure a broad range of psychotic-like traits– originally nine identified subordinate traits based on the operational definition of Schizotypal Personality Disorder (SPD) (American Psychiatric Association, 1987), and is among the more widely-used measured of this type.

The SPQ-B has been used with patients and relatives of patients with schizophrenia-spectrum disorders (Compton et al., 2007; Moreno-Izco et al., 2015), adolescents (Fonseca-Pedrero et al., 2009), twins (Ericson et al., 2011), outpatients (Axelrod et al., 2001), and college students (Compton et al., 2009a; Fonseca-Pedrero et al., 2011; Mata et al., 2005; Raine and Benishay, 1995). The psychometric properties of the SPQ-B have been examined previously. For instance, the reliability of scores and several sources of evidence of validity have been demonstrated (e.g., Fonseca-Pedrero et al., 2016b; Mason, 2015). Moreover, translations of the measure have been validated in several countries (e.g., France, China, Spain, Turkey, Switzerland) (e.g., Aycicegi et al., 2005; Ma et al., 2015; Ortuño-Sierra et al., 2013).

Examination of the SPQ-B factor structure has yielded factorial solutions of two (Aycicegi et al., 2005), three (Compton et al., 2009a; Fonseca-Pedrero et al., 2011, 2009; Ma et al., 2015; Mata et al., 2005; Ortuño-Sierra et al., 2013; Tran et al., 2015), and four factors (Cohen et al., 2010; Fonseca-Pedrero et al., 2010). The three-factor model characterized by Cognitive-Perceptual (e.g., hallucinations, ideas of reference, magical thinking or paranoid ideation), Interpersonal (e.g., blunted affect, social anxiety or lack of close friends), and Disorganized (e.g., odd behavior and speech) dimensions has been widely replicated across studies. However, although the underlying structure of schizotypal personality, as assessed via the SPQ-B, has been analyzed, previous research has produced some contradictory results. These mixed findings are partially explained by variations in sampling method (random, convenience), sample characteristics (clinical, non-clinical, and country), and the data-analytic approach employed (exploratory vs. confirmatory factor analysis).

To the best of our knowledge, no previous studies have validated the psychometric quality of SPQ-B scores across multiple countries. For instance, we have little information about the factorial structure of SPQ-B scores and its possible variation across countries, particularly non-Western countries. Moreover, as previous studies have demonstrated with the SPQ, alternative models (e.g., Barron et al., 2017; Preti et al., 2015) may better explain the latent structure of SPQ-B scores. Thus, it is important to gather new information about the validity of this tool through cross-cultural research and collaborative multinational studies. Furthermore, and despite the globalization of psychosis research, no previous study has analyzed the psychometric quality of psychosis risk screeners in multinational samples.

The purpose of the present study was to analyze the psychometric properties of SPQ-B scores in a large sample recruited from 14 countries. Derived from this main goal are the following specific objectives: a) to estimate the reliability of SPQ-B scores across countries; b) to study the internal structure of SPQ-B scores across countries; and c) to analyze the measurement invariance of SPQ-B scores across countries. We hypothesized that the three-factor model of the SPQ-B would have adequate goodness-of-fit indices across samples. Moreover, we hypothesized that new measurement models, such as a bifactor model, would fit adequately. In addition, we further hypothesized that SPQ-B scores would show configural measurement invariance across samples.

2. Method

2.1. Participants

Participants were gathered from 24 sites across 14 countries (Australia, Austria, Belgium, Canada, China, Germany, Greece, Italy, Mauritius, New Zealand, Spain, Tunisia, United States of America, and United Kingdom). Partial data from the present study has been published elsewhere (Fonseca-Pedrero et al., 2017). The overall sample consisted of 28,426 participants. The mean age was 22.63 years (SD = 7.08; range 16–68 years). A total of 14.5% (n = 4113) of participants did not provide age. Participants were 10,711 males (37.7%) and 17,208 females (60.5%); 507 (1.8%) did not specify gender. Thus, 27,919 (98.2%) participants reported gender and 22,888 (80.52%) reported age. In this study, we considered information at country level and not at research level. Information about the age, gender, and other

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