

The relationship between the Five-Factor Model of personality and schizotypy

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Resumen

En la literatura clínica se ha explorado la posibilidad de establecer un continuo de personalidad esquizotípica que, junto a marcadores genéticos y neurobiológicos, permitan estudiar el desarrollo de la esquizofrenia de una manera dimensional. La presente investigación tiene como objetivo estudiar la relación entre la esquizotipia, un constructo que describe una serie de rasgos o conductas parecidas a las de la esquizofrenia, y el Modelo de los Cinco Factores de personalidad. Una muestra de 341 participantes de entre 18 y 50 años ($\bar{x}_{edad} = 21,5$, $DT = 3,8$), siendo un 63% mujeres y un 89,7% estudiantes universitarios. Los participantes rellenaron el cuestionario de personalidad NEO-PI-R y el de esquizotipia SPQ-B. Se analizaron los datos mediante una matriz correlación de Spearman, múltiples regresiones por pasos y pruebas t para explorar diferencias de género. Los resultados apoyaron la mayoría de las hipótesis planteadas: todos los factores de personalidad, a excepción de la responsabilidad, predijeron las puntuaciones de esquizotipia. En especial, el neuroticismo junto a la apertura se asociaron a los síntomas positivos, como las distorsiones perceptivas o los delirios; mientras que la introversión se relacionó con los síntomas negativos como la anhedonia social o la falta de respuesta emocional. En el caso de la desorganización cognitiva, la relación más destacable fue con la amabilidad. A pesar de los problemas relacionados con la consistencia interna de dos de las subescalas de esquizotipia, estos hallazgos apoyan que la esquizotipia puede llegar a entenderse como una serie de variaciones desadaptativas de la personalidad. No obstante, la ubicación de este constructo en el marco del Modelo de Cinco Factores necesita más investigación, especialmente desde una aproximación dimensional a la psicopatología.

Palabras claves: esquizotipia, personalidad, modelo de los Cinco Factores, SPQ-B, evaluación

Abstract

In the clinical literature, the possibility of establishing a continuum for a schizotypal personality has been explored together with genetic and neurobiological markers. It could allow to study the development of schizophrenia dimensionally. This study aims to analyze the relationship between schizotypy, a construct that describes a series of traits or behaviors similar to that of schizophrenia, and the Five-Factor Model of personality. A sample of 341 participants aged between 18 and 50 years was used ($\bar{x}_{age} = 21.5$, $SD = 3.8$), of which 63% were women and 89.7% were university students. The participants filled out the personality questionnaire NEO-PI-R and the schizotypy questionnaire SPQ-B. The data was analyzed using a Spearman correlation matrix, multiple stepwise regressions, and t-tests to observe gender differences. The results mainly supported the proposed hypotheses: all personality factors, except for conscientiousness, predicted schizotypy scores. In particular, neuroticism together with openness were associated with positive symptoms, such as perceptual distortions or delusions; while introversion was related to negative symptoms, such as social anhedonia or emotional withdrawal. In the case of cognitive disorganization, the most notable relationship was with agreeableness. Despite problems related to the internal consistency of two of the schizotypy subscales, these findings support that the schizotypy may be understood as a series of maladaptive personality variations. Nonetheless, the location of this construct within the Five-Factor Model framework needs further research, especially from a dimensional approach to psychopathology.

Keywords: schizotypy, personality, Five-Factor Model, SPQ-B, assessment

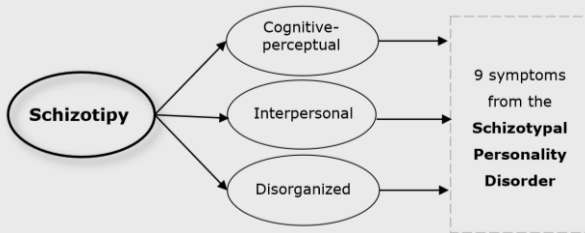


Introduction

The term schizotypy emerges from the schizophrenia literature, which refers to subclinical behaviors that might indicate a schizophrenia spectrum disorder (Kwapil & Barrantes-Vidal, 2014). A possible continuum that lies between normal cognition and psychosis has been proposed (Grant et al., 2018). Thus, schizotypy is viewed as a personality trait that ranges from adaptive behaviors and cognitions to the most maladaptive manifestations. Many schizotypy models were derived from the DSM criteria for schizotypal personality disorder (Kwapil & Barrantes-Vidal, 2014). Although the number of factors is still under discussion, the most replicated model is the three-factor model (Nelson et al., 2013): 1) cognitive-perceptual, 2) interpersonal, and 3) disorganized (see Figure 1).

The Five-Factor Model of personality (FFM) has been useful in the interpretation of the continuum of schizotypy (Edmundson et al., 2011). The advantage of using a personality model is to narrow in a more descriptive and detailed manner how schizotypy may express itself through different personality traits (Trull & Widiger, 2013). This could help in the understanding of the underlying structure of schizotypy.

Figure 1: Three factor model of schizotypy.



Objective: This study aimed to examine the association between the FFM broad dimensions and schizotypy.

Hypothesis: Based on previous findings (Edmundson et al., 2011; Ross et al., 2011; Kemp et al., 2021; Asai, et al. 2018), these were the hypotheses:

H1: + relationship between **O** and **schizotypy**, especially the **cognitive-perceptual factor**.

H2: - relationship between **C** and **schizotypy**, especially the **disorganized factor**.

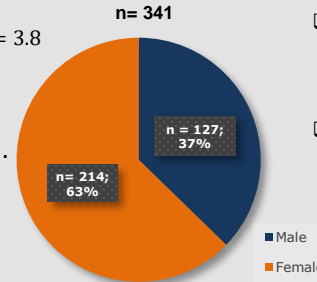
H3: - relationship between **E** and **schizotypy**, especially the **interpersonal factor**.

H4: - relationship between **A** and **schizotypy**, especially the **interpersonal factor**.

H5: + relationship between **N** and the **three factors of schizotypy**.

Participants:

- Exclusion criteria: ($Inf_i \leq 1$).
- Total sample age: $\bar{x} = 21.5, SD = 3.8$
- Age range: 18 to 50 years old.
- Majority students: 89.7%.
- Spanish nationality.
- Convenience sampling method.



Methodology

Instruments:

- NEO PI-R** (Costa & McCrae, 1999): A 240-item personality questionnaire that measures de FFM.
- SPQ-B** (Fonseca-Pedrero, et al., 2009): The Schizotypal Personality Questionnaire Brief is a 22-item self-report questionnaire in a Yes/No answer format.

Procedure:

Participants were asked for their informed consent.

Data analysis:

- Descriptive statistics (mean and SD).
- T-test for gender difference.
- Spearman correlation coefficients.
- Multiple regression analysis (stepwise)

Results

Table 1: Descriptive analyses

	Total Sample		Male		Female		T-test	
	Mean (SD)	Cronbach α / KR-20	Mean (SD)	Mean (SD)	t	d		
Openness	116.67 (18.06)	.728	112.24 (18.16)	119.26 (17.53)	-3.42***	.39		
Conscientiousness	108.63 (20.46)	.849	106.26 (20.06)	110.06 (20.62)	-1.62	.18		
Extraversion	119.13 (18.35)	.764	117.34 (17.88)	120.23 (18.59)	-1.384	.15		
Agreeableness	118.49 (16.14)	.746	111.32 (15.64)	122.66 (14.94)	-6.41***	.74		
Neuroticism	87.69 (20.73)	.827	79.57 (19.06)	92.60 (20.12)	-5.60***	.66		
Cognitive-Perceptual	1.60 (1.51)	.527	1.62 (1.42)	1.58 (1.55)	.252	.03		
Interpersonal	2.65 (2.08)	.723	2.84 (2.02)	2.55 (2.11)	1.23	.14		
Disorganized	1.15 (1.27)	.561	1.41 (1.39)	1.00 (1.17)	2.75**	.32		
Schizotypy (Total)	5.39 (3.66)	.760	5.92 (3.71)	5.09 (3.60)	2.00*	.22		

* $p \leq .05$
** $p \leq .01$
*** $p \leq .001$

Before any regression was performed on the data...

Linear transformation

$$LT(X_i) = \log_{10}(X_i + 1)$$

Table 2: Regression analyses

Predictors	Schizotypy		Cognitive-perceptual		Interpersonal		Disorganized	
	B	ΔR^2	B	ΔR^2	B	ΔR^2	B	ΔR^2
Step 1: Control		.02		.03*		.01		.02
Age	-.108		-.178*		-.035		.011	
Gender	-.085		-.029		-.060		-.143*	
Step 2: NEO-PI R		.32***		.14***		.35***		.20***
Neuroticism	.339***		.327***		.266***		.142*	
Extraversion	-.317***		.009		-.459***		-.087	
Agreeableness	-.174**		-.118		-.099		-.261***	
Openness	.169**		.232***		.020		.203***	
Conscientiousness	.021		.079		.118*		-.206***	

Discussion

As in previous studies, we found a positive relationship between neuroticism and schizotypy (Gross et al., 2018). The fact that neuroticism is the best predictor could be because is one of the main risk factors across psychopathological symptoms (Trull & Widiger, 2013). Extraversion was the second-best predictor, especially for the interpersonal factor as hypothesized, since it represents social anhedonia and emotional withdrawal (Ross et al., 2002). In the case of agreeableness, although the relationship with schizotypy was replicated (Edmunson, et al., 2011), the prediction for the interpersonal factor was not found despite previous findings (Gross et al., 2018). In the case of openness, this trait was a significant predictor of schizotypy, a result that has been found in non-clinical samples (Kemp, et al., 2021; Asai et al., 2002). Also, this trait is related to both cognitive-perceptual and disorganized factors (Kemp et al., 2021), probably due to the unusual thoughts and behaviors expressed by people high in openness. Nevertheless, we expected to find a higher association with schizotypy. Our results indicated that it was the lowest predictor compared to the other four broad personality traits. Conscientiousness was also related to the disorganized factor (Gross et al., 2018), since this factor is characterized by disruption and messy expression of thoughts. It was also associated, to a lesser extent, with the interpersonal factor. However, it did not predict the total score in schizotypy as hypothesized.

We can conclude that most of the expected associations between the FFM and schizotypy were found in the present study. Nonetheless, the location of this construct within the FFM framework needs further research, especially from a dimensional approach to psychopathology.

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