Personality and Individual Differences 79 (2015) 98–103

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

Five-factor model and internalizing and externalizing syndromes: A 5-year prospective study

Laura Mezquita [a], Manuel I. Ibáñez [a,b], Helena Villa [a], Lourdes Fañanás [b,c], Jorge Moya-Higueras [b,d], Generós Ortet [a,b,*]

[a] Department of Basic and Clinical Psychology and Psychobiology, Universitat Jaume I, Av. de Vicent Sos Baynat s/n, 12071 Castelló, Spain
[b] Centre for Biomedical Research Network on Mental Health (CIBERSAM), Instituto de Salud Carlos III, C/Monforte de Lemos 3-5, 28029 Madrid, Spain
[c] Anthropology Unit, Department of Animal Biology, Faculty of Biology, and Biomedicine Institute of the University of Barcelona (IBUB), University of Barcelona, Av. Diagonal 645, 08028 Barcelona, Spain
[d] Department of Pedagogy and Psychology, Universitat de Lleida, Campus de Cappont, Av. Estudi General 4, 25001 Lleida, Spain

ARTICLE INFO

Article history:
Received 27 October 2014
Received in revised form 30 January 2015
Accepted 1 February 2015
Available online 18 February 2015

Keywords:
Internalizing
Externalizing
Personality
Prospective
Five-factor model

ABSTRACT

The main aim of the present research was to study the prospective relationships of the five-factor model of personality and the internalizing and externalizing suprafactors of psychopathology. A sample of 323 young adults completed the NEO-FFI at Time 1 and different scales of symptoms 5 years later. Neuroticism prospectively predicted the internalizing factor, while extraversion, low agreeableness and low conscientiousness predicted the externalizing factor. We found additional paths between introversion and social phobia symptoms, and between low agreeableness and psychopathy symptoms. These relationships remained significant, even when controlling for previous symptoms, except for extraversion. Gender had no moderation effect on the interrelationship between personality and psychopathology factors. The present study extends previous research about personality and psychopathology, and suggests different ways in which they can be related.

1. Introduction

There is strong evidence to indicate that the most prevalent mental disorders tend to co-occur more frequently than expected by chance (Krueger & Markon, 2006a). One hypothesis accounts for these observed comorbidities: apparently distinct mental disorders may be manifestations of common underlying spectra (Eaton, South, & Krueger, 2010). Studies into the structure of mental disorders support this hypothesis (Krueger, 1999b). The resemblance between the hierarchical structure of psychopathology and the hierarchical structure of personality also suggest a link between personality and higher order factors of psychopathology (Krueger & Markon, 2006b).

1.1. Structure of psychopathology

In the first study conducted into patterns of comorbidity among ten common mental disorders in adults, Krueger (1999b) described a hierarchical structure defined by two higher-order internalizing and externalizing latent factors. The bifurcation of the internalizing second-order factor led to two lower level latent factors: anxious-misery/distress (major depressive episode, generalized anxiety disorder (GAD), dysthymia) and fear (social phobia, simple phobia, panic disorder, agoraphobia). The externalizing factor covered alcohol dependence, drug dependence and antisocial personality disorder (APD) (Krueger, 1999b). Despite some minor differences between subsequent studies and the former (e.g., no differentiation of fear and distress factors, Kessler et al., 2011; inclusion of a larger number of disorders, Kotov et al., 2011), the internalizing and externalizing classical suprafactors of psychopathology remained stable over time (Kessler et al., 2011), between age groups (Achenbach & Edelbrock, 1984) and between gender groups (Eaton et al., 2012) when employing clinical *vs.* community samples (Kessler et al., 2011; Miller et al., 2012), and when using symptom scales, symptom counts of psychiatric diagnostic categories or categorical diagnoses (Krueger, Markon, Patrick, Benning, & Kramer, 2007; Markon, 2010).

1.2. Interrelationships between personality and psychopathology

Evidence from different types of studies suggests a certain degree of specificity in the relationship between personality domains and both spectrums of psychopathology. For instance in

* Corresponding author. Tel.: +34 964 72 9687; fax: +34 964 72 9267.
E-mail address: ortet@uji.es (G. Ortet).

http://dx.doi.org/10.1016/j.paid.2015.02.002
0191-8869/

a meta-analysis, Kotov, Gamez, Schmidt, and Watson (2010) compared anxiety, mood and substance use disorder (SUD) to find that all the diagnostic groups were high on neuroticism and low on conscientiousness. However, the effect size of neuroticism was the strongest for mood and anxiety disorders, while SUD related less to neuroticism, but associated more with disinhibition and disagreeableness. Previous works have also related high negative affect, high unconscientious disinhibition and high disagreeable disinhibition to other externalizing symptoms and disorders (i.e., pathological gambling, aggressive behavior and antisocial behavior) in other meta-analyses (MacLaren, Fugelsang, Harrigan, & Dixon, 2011; Malouff, Thorsteinsson, Rooke, & Schutte, 2007).

Although many research works have focused on the study of personality and specific disorders, only a handful of studies have focused specifically on the relationship of personality with the comorbidity factors of mental disorders/symptoms. Such studies are especially important because, rather than representing noise, the comorbidity among common mental disorders indicates personality bases of psychopathology (Krueger & Tackett, 2003). In line with this, Khan, Jacobson, Gardner, Prescott, and Kendler (2005) found that high neuroticism appears to be a broad vulnerability factor for comorbidity between different pairs of internalizing and externalizing disorders, while novelty seeking is modestly important for comorbid pairs of externalizing disorders. Krueger, McGue, and Iacono (2001) reported a relation in both gender groups between low constraint and neuroticism, these being externalizing and internalizing factors respectively, and another relation between introversion and the internalizing factor, but only in women. Miller et al. (2012) pointed out that introversion can distinguish distress (high neuroticism, low extraversion) from the fear (high neuroticism) factor.

Although these cross-sectional studies can be useful for understanding the comorbidity of mental disorders and symptoms, this is a potential confound because responses to different personality inventories can differ depending on their current psychopathological status (Krueger, Caspi, Moffitt, Silva, & McGee, 1996). For this reason, prospective studies are especially recommendable because they allow us to explore the relationship between personality and psychopathology when controlling for previous symptomatology. Along these lines, Krueger (1999a) found a link between high negative emotionality at the age of 18 and affective and anxiety disorders, and with SUD and APD 3 years later when controlling for the corresponding mental disorders at the age of 18, while there is a prospective link between low constraint and SUD/APD. However in Krueger's study, the dependent variables represented a sum of diagnostic criteria for each specific disorder, but not the shared variance between groups of symptoms.

1.3. The present study

Therefore, the present study empirically investigated the relationship between the five-factor model of personality (FFM; John, Naumann, & Soto, 2008) and the suprafactors of internalizing and externalizing symptoms in a 5-year longitudinal design. Specifically, we hypothesized a relation between neuroticism and the internalizing factor, and to a lesser extent, to the externalizing factor. Moreover, we predicted a relation between both disinhibition domains (low agreeableness and low conscientiousness) and the externalizing spectrum 5 years later (Krueger & Markon, 2006b; Krueger et al., 2001). We also expected these relationships to remain significant in both groups of gender, even when controlling for previous symptomatology (Krueger, 1999a; Krueger et al., 1996).

2. Measures and methods

2.1. Participants and procedure

We posted advertisements around the university during 2004–2005 (Time 1, T1), which helped us form an initial sample of 470 young adults. Three hundred and twenty-three of them continued to collaborate 5 years later (Time 2, T2; 31.28% attrition). At T1, 91.90% were undergraduates and their mean age was 21.18 (SD = 2.26) (age range = 18–29 years). At T2, 47.81% were students, 20.63% were employees, 10.63% were unemployed, 7.81% were government employees and 13.12% reported other occupations. Moreover, 57.89% lived with their parents, 6.50% lived alone, 19.50% lived with a partner and 16.11% indicated other living arrangements (e.g., roommates). These 323 participants completed the personality inventory (NEO-FFI) at T1 and T2, and different internalizing (BDI-II, SP, PSWQ, ACQ) and externalizing (APD, LSRP, AUDIT, CPQ, SOGS) scales at T2 (see the Section 2.2 for acronyms).

A subsample of 241 of them (66% females, T1 M_{age} = 20.90, age range = 18–29 years) completed additional scales for internalizing (BDI-II, SP and Anx) and externalizing (APD and AIS-UJI) symptoms at T1 (see the Section 2.2 for acronyms). The participants of this subsample were significantly younger (t = 3.90, p < .001) and there were more women (66% *vs.* 50%; χ^2 = 6.62, p < .05) as compared with those who did not complete the psychopathology scales at T1 (N = 82 of 323). However, we found no significant differences in personality (T1) or psychopathological symptoms (T2) between these groups.

Participation was voluntary and anonymous. At both time points, participants provided informed consent. They received 20 euros at T1 and 40 euros at T2 for participating in the research.

2.2. Measures

2.2.1. Personality

The NEO-FFI (Costa & McCrae, 1999) is a 60-item inventory that assesses the five broad domains of personality: neuroticism (N); extraversion (E); openness to experience (O); agreeableness (A); conscientiousness (C). Participants answered items on a 5-point Likert-type scale that ranged from 0 (strongly disagree) to 4 (strongly agree).

2.2.2. Internalizing symptoms

The Beck Depression Inventory – second edition (BDI-II; Sanz, García-Vera, Espinosa, Fortún, & Vázquez, 2005) comprises 21 items based on the diagnostic criteria of depression of DSM-IV (e.g., hopelessness, guilt or suicidal thoughts). Items include a 4-point scale that ranges from 0 to 3.

The Social Phobia (SP) 5-item scale forms part of the Fear Questionnaire (FQ, Marks & Mathews, 1979). Participants indicate how much they avoid specific situations related to social situations (e.g., "Acting to an audience"). The anchors of each response category rank from 0 (would not avoid it) to 8 (always avoid it).

The Penn State Worry Questionnaire (PSWQ, Nuevo, Montorio, & Ruiz, 2002) is a self-report questionnaire with 16 items that evaluates the intensity and excessive concern about specific content concerns. Its normal use is to act as a screening for GAD. Each response category ranges from 0 (nothing) to 4 (a lot).

The Agoraphobic Cognitions Questionnaire (ACQ, Chambless, Caputo, Bright, & Gallagher, 1984) assesses the frequency of cognitions that participants experience when anxious with 14 items. These cognitions usually relate to panic and agoraphobic disorders (e.g., "I'm going crazy"). It estimates each item on a 5-point scale ranging from 1 (never) to 5 (always).