Assessment of "los Pequeños" Big Five: The Spanish Version of the Big Five Personality Trait Short Questionnaire in Adolescents

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Abstract

The major advantage of the Big Five Personality Trait Short Questionnaire (BFPTSQ) over other noncommercial Five-Factor Model (FFM) personality scales is that it targets both adolescents and adults. The aim of the present study was to explore the psychometric properties of this questionnaire in a Spanish, adolescent sample. The main sample was composed of 1,082 participants (M_{age} = 14.16, *SD* = 1.56, age range 12-17 years), 53% girls. The results showed that the expected factor structure was mostly recovered using exploratory structural equation modeling (ESEM). The ESEM presented satisfactory fit indices, as well as metric invariance and partial scalar invariance across genders. Moreover, coefficient alphas and ordinal omegas of all the scales were over .70, and test-retest indices were significant ($p < .001$). Regarding the associations of BFPTSQ with a junior FFM inventory, the correlations with the broad-trait scales ranged from .61 to .72, and 29 out of 30 correlations with the facet scales were significant ($p < .001$). Finally, most of the expected associations between the BFPTSQ scales and the criterion measures (internalizing and externalizing symptom scales, life satisfaction, and academic performance) were confirmed, widely replicating the results found in the development of the original questionnaire. This study supports the construct validity of extraversion, agreeableness, conscientiousness, and emotional stability scales in Spanish speaking adolescents. However, openness did not emerge as a well-defined factor in the present sample. The questionnaire seems to be a useful and readable measure for research and, potentially, for other applications such as clinical use.

Keywords: BFPTSQ, five-factor model, short questionnaire, Spanish version, adolescents.

Public Significance Statement

This study presents the Spanish version of the Big Five Personality Trait Short Questionnaire (BFPTSQ). The results demonstrate the construct validity of the Spanish BFPTSQ in adolescents, although the openness scale did not emerge as a well-defined factor. The BFPTSQ is a noncommercial measure, of wide conceptual breadth, that can be used in both adolescents and adults for research and, potentially, for other applications such as clinical use.

Introduction

Personality traits have generated widespread interest among psychology researchers, applied psychologists, and even laypersons (McCrae, 2018). There are already a plethora of findings supporting the association of personality traits with dozens of life outcomes (Soto, 2019). These include physical and mental health or academic and work performance (Bleidorn et al., 2020; Kuncel et al., 2010; Roberts et al., 2007). Personality traits have also been related to important life areas during childhood and adolescence, such as school performance (Cuadrado et al., 2021; Poropat, 2014), resilience and coping (Oshio et al., 2018) or subjective well-being (Suldo et al., 2015). Problematic outcomes such as antisocial behavior (Durán-Bonavila et al., 2017; Mann et al., 2016), substance use (Ibáñez et al., 2015; Stautz & Cooper, 2013), and psychopathology (Castellanos-Ryan et al., 2016; De Bolle et al., 2016; Etkin et al., 2020) have also been linked to individual differences in personality. Therefore, it is necessary to have sound scales accessible for the measurement of personality traits in this crucial period of development.

In relation to the structure of personality, the Five-Factor Model (FFM), aka Big Five, is one of the most useful frameworks and has a wide consensus as personality taxonomy (John, 2021), not only in adults, but also in adolescents and even children (De Pauw, 2017). The FFM includes the broad traits of openness, extraversion, agreeableness, conscientiousness, and neuroticism (or its positive pole, emotional stability). Openness reflects individual differences in curiosity, fantasy, appreciation of art, and social viewpoints; extraversion represents individual variability in sociability, leadership, activity, sensation seeking, and positive emotionality; agreeableness reveals individual levels in compliance, empathy, cooperation, and altruism; conscientiousness represents individual differences in being meticulous, planning, self-controlled, and

following conventional social norms and rules; and neuroticism refers to variability in the frequency and intensity of experiencing negative emotions such as anxiety, fear, depression, irritability and general self-esteem (McCrae & Costa, 2010).

In the personality assessment field, two traditions can be differentiated. On the one hand, there are validated measures that are copyrighted and proprietary instruments, with the NEO personality inventories (McCrae & Costa, 2010) as the most well-known and employed questionnaires for assessing the FFM. On the other hand, there are open access scales under the FFM framework, including the IPIP questionnaires (Goldberg et al., 2006) or the BFI scales (Soto & John, 2017). Other researchers may have difficulties to revise and refine the first type of questionnaires, as permissions have to be obtained from authors and test publishers, and also fees are usually required in order to use the scales. However, the noncommercial measures facilitate the development and refinement of personality scales (Maples-Keller et al., 2017). In relation to the assessment of adolescent personality, and more specifically, Spanish-speaking youths, the availability of open access FFM instruments is scarce. Accordingly, a Spanish language questionnaire that assesses the five broad traits of the FFM in adolescents would cover this gap and may result in a very useful measurement tool.

Morizot (2014) created the Big Five Personality Trait Short Questionnaire (BFPTSQ) to measure the five broad domains of personality with adequate conceptual breadth. To this end, the author modified the Big Five Inventory (BFI; John et al., 1991) including seven new items tapping into missing relevant primary traits not well represented in the original BFI: sensation seeking, machiavellianism, openness to values, positive emotions, premeditation, vulnerability and angry hostility. Moreover, the language level of various items was attuned in order to make an instrument suitable for both adolescents and adults. There are not many questionnaires that can be used

from 12 years and up. The NEO-PI-3 (McCrae and Costa, 2010) is an example among the commercial inventories. Among the free access scales, the Big Five Inventory-2 (BFI-2; Soto & John, 2017) has started to be examined in adolescents from 14 years (Ober et al., 2020) and different IPIP questionnaires have been used in adolescents (e.g., Czerwiński, 2020; Cupani, 2009). However, as far as we know, no other noncommercial instrument with adequate bandwidth and suitable for adolescents and adults has been developed for Spanish-speaking populations, with the exception of the preliminary adaptation of the IPIP-FFM to a sample of 12-16-year-old Argentinean adolescents (Cupani, 2009).

The use of the same instrument in adolescence and adulthood is desirable as it mends the problem of comparability between different versions of the same measures. This is especially important in longitudinal studies of personality traits (Van Dijk et al., 2020). In this line, the Spanish version of the BFPTSQ presented adequate psychometric properties in an adult sample (Ortet et al., 2017). Results supported the structure found by Morizot (2014) and the scale scores also correlated with the NEO-PI-R, providing evidence of its convergent validity. Findings also indicated criterion-related validity, such as associations between emotional stability and extraversion traits with happiness scores, or between low conscientiousness and alcohol consumption. Moreover, Mezquita et al. (2019) administered the BFPTSQ to Spanish-speaking college students from Argentina and Spain. Their findings supported the measurement invariance of the scale across both countries. Evidence of criterion-related validity was also presented in both countries, indicating that the BFPTSQ could be used to assess the FFM broad domains in two variants of the Spanish language. Due to the simpler wording of the items, this scale seems suitable for Hispanic and Latin American

participants and has been used in investigations in adults from different Spanish-speaking countries (e.g., Cortés, 2018).

In the present research, we explored the construct validity of the Spanish version of the BFPTSQ in adolescents bearing in mind the International Test Commission guidelines for translating and adapting tests (ITC, 2018); and recommendations for translating psychological measures (Ziegler & Bensch, 2013). This study examined the appraisal of factor, convergent and criterion validities; as well as internal consistency and test-retest reliabilities of the scale in adolescents. We hypothesized a five-factor structure in which all items would have significant and salient loadings on their target trait. Moreover, measurement invariance across genders was predicted to be found (Morizot, 2014). We also expected to find adequate Cronbach's alpha and omega indices, and one-month test-retest coefficients. For convergent validity, the FFM broad and narrow traits (using the JS NEO-S) would correlate with the BFPTSQ corresponding broad dimensions. In relation to consequential outcomes, we took into account the recommendations of Ziegler and Bensch (2013), so most of the constructs used for testing the criterion validity of the original BFPTSQ (for a detailed rational of constructs' selection, see Morizot, 2014) were chosen in the present study. Accordingly, it was hypothesized that academic performance would be positively associated with conscientiousness and openness (Poropat, 2014); that life satisfaction would be positively related to emotional stability (low neuroticism) and extraversion (Suldo et al., 2015); that internalizing symptoms would be mainly associated with emotional stability and, to a lesser extent, introversion; and externalizing problems would be chiefly related to low agreeableness and low conscientiousness and, to a lesser extent, extraversion (Etkin et al., 2020).

Method

Participants and Procedure

The sample consisted of 1,082 youngsters (M_{age} = 14.16, *SD* = 1.56, age range 12-17 years), 53% girls, that answered the BFPTSQ. A subsample of 132 adolescents (M_{age} = 14.55, *SD* = 1.71years), 59.1% girls, also completed the questionnaire one month after the first measurement. A second subsample of 362 participants (M_{age} = 14.14, *SD* = 1.53years), 47.8% girls, responded to the rest of the scales. Three public high schools were chosen at convenience by the authors intending to obtain a sample with sociodemographic characteristics that were similar to those of the Spanish adolescent population (i.e., we selected three high schools, one in each neighborhood in a city in eastern Spain, known to have varying socioeconomic levels). The two subsamples were quite small due to time limitation for testing allowed by the high schools. All the attending students voluntarily filled out the questionnaires in the classroom after receiving informed consent from their parents/guardians. The authors' university Deontological Committee approved the study.

Measures

The Spanish version of the *Big Five Personality Trait Short Questionnaire* (BFPTSQ; Ortet et al., 2017), the psychometric properties of which are the main focus of the present study (see Supplemental Material). It is a short, 50-item personality questionnaire, purposely designed for both adolescents and adults (Morizot, 2014), that assesses the broad dimensions in the FFM: openness, extraversion, agreeableness, conscientiousness, and emotional stability (low neuroticism). It is answered on a 5-point Likert-type scale (0 = *Disagree strongly*; 4 = *Agree strongly*).

The *Short form of the Junior Spanish version of the NEO-PI-R* (JS NEO-S; Ortet et al., 2010). This 150-item inventory is the short form of the Spanish adaptation of the NEO-PI-R for adolescents (JS NEO) aged from 12 to 17 years (Ortet et al, 2012). It

comprises statements answered on a 5-point Likert-type scale (0 = *Strongly disagree*; 4 = *Strongly agree*) in order to measure the five higher-order traits in the FFM (neuroticism, extraversion, openness, agreeableness and conscientiousness), as well as the 30 facets (6 facets per broad trait and 5 items per lower-order trait). The reliability and validity data of the instrument can be found in Ortet et al. (2010). Subsequent independent studies have provided more evidence of construct validity of the JS NEO-S (e.g., Romero & Alonso, 2017).

The *Assessment System for Children and Adolescents* (SENA; Fernández-Pinto et al., 2015; Sánchez-Sánchez, 2016). The SENA is a self-report instrument that measures the most common emotional and behavioral symptoms in children and adolescents. Five internalizing (depression - 14 items, anxiety - 10 items, social anxiety - 8 items, somatic complains - 9 items, and posttraumatic symptoms - 11 items) and six externalizing (hyperactivity/impulsivity - 10 items, attention problems - 10 items, aggression -7 items, defiant behavior - 3 items, anger control problems - 8 items, and antisocial behavior - 8 items) scales were selected. The participants responded to a 5-point frequency scale that ranged from 0 (never/almost never) to 4 (always/almost always). The manual (Fernández-Pinto et al., 2015) and Sánchez-Sánchez et al. (2016) summarize reliability and validity evidence of the assessment battery.

The *Alcohol Intake Scale* (AIS; Ibáñez et al., 2015) was used to assess alcohol consumption. Adolescents were asked to indicate the amount of Standard Drink Units (SDUs) drunk in a week by taking into account that beers and glasses of wine are the equivalent to one SDU, and liquors and mixed drinks are the equivalent to two SDUs in Spain (Ministerio de Salud, Servicios Sociales e Igualdad, 2016).

The Spanish version of the *Student's Life Satisfaction Scale* (SLSS; Galindez & Casas, 2010). The SLSS is a brief 7-item questionnaire that measures self-reported life

satisfaction for youths between 8 and 18 years (Huebner et al., 1998). Reliability and validity evidence of the questionnaire is presented in Galindez and Casas (2010).

Academic performance. A single item requested 'What grades did you obtain last school year?' The response format was a 5-point scale that ranged from 0 = Normally failed to 4 = Normally outstanding. In the Spanish educational system, the grades are given in the following range: 0 to 10 points (0 - 4 = Fail; 5 = Sufficient pass; 6 = Pass; 7 - 8 = Mention; 9 - 10 = Outstanding/Honors).

Data Analyses

For structural validity, we used Mplus 5.21 software and conducted analyses using the robust maximum likelihood estimator (MLR). MLR offers adjusted standard errors and statistical fit tests that are robust to nonnormality in the data. We calculated and reported confidence intervals (99%). Two types of models were used: an independent clusters model confirmatory factor analysis (ICM-CFA), and an exploratory structural equation modeling (ESEM). All factor models were estimated with and without a priori correlated uniquenesses (CUs). We specified a priori the 28 CUs proposed by Morizot (2014), although only 21 of them were retained in the original BFPTSQ study as seven were not significant. In the present study, five out of 28 original CUs (for openness, 1-21; for extraversion, 12-42, 27; for conscientiousness, 9r-19r, 4-14) were not statistically significant in the Spanish sample, so they were not retained in the models. Thus, a total of 23 out of 28 original CUs were posited: for openness, 1-21, 11-36, 16-21, 26-41r, 26-46, 1-16, 41r-46; for extraversion, 7r-32r, 2-22r; for agreeableness, 18-23, 8-33, 23-33, 23-43; for conscientiousness, 29-39, 19r-24r, 19r-39, 29-44r, 9r-19r, 4-14; and for emotional stability, 10-35, 10-15r, 5r-25, 5r-45r. As Marsh et al. (2010) indicate, using ex post facto CUs should generally be avoided, but in the case of the FFM measures, many CUs, such as those included in this study,

are theoretically or conceptually defensible. Thus, as indicated in the original version of the BFPTSQ (Morizot, 2014), these CUs are from the same primary trait or subdomain and have similar content but in reversed scoring, or share the same word. A detailed description of the ICM-CFA and ESEM employed is described in Morizot (2014). Various indices were taken into account for the assessment of model fit (West et al., 2012). The chi-square test was estimated, and a nonsignificant index suggests a good fitting model. However, because this test is highly sensitive to large sample sizes, additional fit indices were measured. Values of .90 or above for the comparative fit index (CFI) and Tucker–Lewis index (TLI), of .08 or below for the root mean square error of approximation (RMSEA), and of .10 or below for the standardized root mean square residual (SRMR) imply an acceptable fit of the model (Bentler, 1990; Morizot, 2014). In the case of RMSEA 90% CI, values below .05 for the lower bound and below .08 for the upper bound suggest acceptable fit (MacCallum et al., 1996). The Satorra-Bentler scaled chi-square test (Satorra, 2000) was calculated for the assessment of change in model fit tests. Also, change in CFI, where values below .01 show that the invariance hypothesis should not be rejected, values between .01 and .02 indicate the possibility of non-invariance, and values above .02 suggest the rejection of the invariance hypothesis (Cheung & Rensvold, 2002). Finally, Chen (2007) suggested computing changes in RMSEA, where values below .015 signify that the invariance hypothesis should not be rejected.

It is important to note that the abovementioned fit indices and suggested cutoff scores have not been rigorously established with measures of 50 items or more. Accordingly, their adequacy for assessing model fit in ESEM still needs to be carefully appraised (Marsh et al., 2010; Morin et al., 2013; Morizot, 2014). These suggested

cutoff indices should thus be contemplated as useful, but rough guidelines in an ESEM investigation on the factor structure of the FFM.

The reliability of the scales was tested with the Cronbach's alpha and ordinal omega (Dunn et al., 2014) and calculated with 99% CI using SPSS 26 software and R 3.4.0 software, respectively. One-month test-retest reliability was also calculated using Pearson correlations between Time 1 and Time 2 scores for the five scales. For convergent validity, the BFPTSQ scales were correlated with their corresponding scales from the JS NEO-S; whereas for criterion validity, they were correlated with the consequential outcome measures: Academic performance (scores), SLSS (life satisfaction), SENA (different internalizing and externalizing symptoms), and AIS (alcohol use).

Results

Structural Validity

Table 1 presents the goodness-of-fit statistics from the different factor analytic models. The indices imply that ICM-CFA does not fit the data (M1). The addition of a priori CUs (M1b) improved the fit but still resulted in a poor-fitting model. An ESEM model (M2) significantly improved fit over the ICM-CFA model as indicated by the large $\Delta\chi 2$, ΔCFI, and ΔRMSEA. A model with added a priori CUs (M2b) again improved the fit to the data. This ESEM with CUs presents fit indices in the satisfactory range, with CFI and TLI above .90, as well as RMSEA and SRMR below .06, contrary to the preceding models.

The standardized factor loadings from the ESEM model with CUs (M2b) are shown in Table 2. Most target item loadings were sizable and related to their expected factor. Only 4 (items 31r, 41r, and 46 from openness, and 42 from extraversion) out of 50 target loadings had a value below .30; although, with the exception of 41r (“has few

artistic interests"), were statistically associated with their expected factor as the 99% CI did not include a value of 0. Furthermore, there were 10 (items 7r, 10, 17, 22r, 25, 27, 35, 42, 47, and 48r) sizable cross-loadings (i.e., above .30 and statistically significant) and, unexpectedly, most of them loaded secondarily on the openness factor. Nonetheless, some predicted cross-loadings were also found, like the low self-worth (45r) and irritability (50r) items from emotional stability had a significant association with extraversion and agreeableness respectively.

Table 3 presents the latent factor correlations and their 99% confidence intervals from the ICM-CFA and ESEM models. The factor correlations from ESEM, as expected, are much smaller than those from ICM-CFA. While the absolute factor correlations for ICM-CFA range from .092 (between extraversion and emotional stability) to .577 (between openness and extraversion), for ESEM they range from .002 (between extraversion and emotional stability) to .339 (between agreeableness and conscientiousness). The intercorrelations among the five scales of the Spanish version of the BFPTSQ were similar to the original questionnaire.

In relation to gender invariance tests, the goodness-of-fit statistics (MGs) are shown in Table 1. When fitting the ESEM model with all freely estimated parameters for boys and girls separately, acceptable fit to the data was found (MG1). The fit did not significantly worsen if all factor loadings were constrained to equality (MG2). This result is important, because this kind of test contains many more parameters (i.e., each loading and cross-loading is constrained to equality) than in ICM-CFA. However, constraining intercepts to equality across genders would not imply the possibility of non-invariance (MG3). Actually, the scaled chi-square difference test was significant and the change in CFI was at the upper limit of the cutoff criterion, indicating the possibility of non-invariance. Therefore, we estimated a model with partial invariance

of intercepts (MG3b). Based on modification indices, one item was freed across groups: Girls had higher item intercept for item 47. This model provided an improved fit compared with the model with fully invariant intercepts. Constraining item uniquenesses across genders did not result in a significant worsening in model fit (MG4). Certainly, although the scaled chi-square test was significant, the change in CFI was not significant and the change in RMSEA was, again, small. Constraining the CUs to equality across genders in another model did not result in a worsening of fit (MG5), suggesting that these parameters were not gender-specific. In general, even if the fit indices gradually decreased with the increases in equality constraints (CFI and TLI), the RMSEA continued in the acceptable range for the various models. Finally, when constraining the variances/covariances (MG6) and latent factor means (MG7) across genders, this did not result in a significant decline of fit, even though the chi-square change is much larger for the mean invariance model. These results reasonably indicate that the questionnaire factor structure presents metric invariance (i.e., equal factor loadings), although scalar invariance (i.e., equal intercepts) across genders is not so clear. Table 4 shows the comparisons across genders, indicating that boys obtained higher mean scores in emotional stability and girls in openness. There were no significant gender differences in extraversion, agreeableness and conscientiousness.

Reliability

Table 5 presents the internal consistency and test-retest indices. Cronbach's alphas and ordinal omegas of all the scales were over .70. The test-retest correlations ranged from .718 for agreeableness to .835 for extraversion. Accordingly, the estimates suggest that the questionnaire scale scores had adequate reliability.

Convergent Validity

The overall pattern of correlations between the BFPTSQ and JS NEO-S scales suggested adequate convergent validity (see Table 6). These were higher between broad dimensions (from .605 for extraversion to .719 for conscientiousness) than between the BFPTSQ scales and the corresponding JS NEO-S facet scales. All were clearly significant, with the exception of the correlation between BFPTSQ agreeableness and the modesty facet of the JS NEO-S that, as in the original scale, presented a nonsignificant association.

Criterion Validity

Table 7 presents the point and interval correlation estimates between the BFPTSQ (and the JS NEO-S) and outcome scales. The pattern of associations between the five broad traits and outcome scales generally indicates satisfactory criterion validity. As expected, openness was related to higher academic performance, but also presented significant associations with anxiety (as in the original scale) and posttraumatic symptoms. Extraversion was negatively related to social anxiety, depression, and posttraumatic symptoms, and positively to hyperactivity/impulsivity and alcohol use, as predicted. However, we did not find the hypothesized association with life satisfaction. As in the original scale, agreeableness was related to lower scores on all psychopathology scales and substance use, especially externalizing symptoms, but to higher academic performance. Our results also indicted a significant association with life satisfaction. As expected, and in accordance with the original scale, conscientiousness was the most related trait to academic performance and presented negative associations with all psychopathology scales and positive associations with life satisfaction. Correlations were higher with some externalizing symptoms, such as attention problems and hyperactivity/impulsivity. Our results did not find an expected correlation with alcohol use. Finally, emotional stability was related to lower scores on

all psychopathology scales, but the higher associations were with some internalizing symptoms, such as anxiety, depression and posttraumatic. As hypothesized, emotional stability presented the highest correlation to life satisfaction.

Discussion

The general objective of this study was to explore the construct validity of the Spanish version of the BFPTSQ in adolescents. The concept of construct validity refers to a unifying form of validity that requires considering different complementary sources of information (Messick, 1995; Simms & Watson, 2007). Accordingly, we examined factor, convergent and criterion validities, and reliability of the questionnaire. The results indicated that most of our hypotheses were confirmed, supporting the construct validity of the Spanish BFPTSQ in youths.

Evidence for Internal Structure Validity

The FFM structure was partly recovered in the present sample of Spanish adolescents using ESEM, as openness did not emerge as a well-defined factor in this study. The results on the item-level analyses of the FFM structure obtained in this study replicate other findings reported in adolescents (e.g., Rogers & Glendon, 2018; Soto et al., 2008; Vollrath et al., 2016). Overall, in line with studies on FFM measures, an ESEM model fit the data better than an ICM-CFA and had a similar fit to the original scale (Morizot, 2014) and the Spanish version in adults of the BFPTSQ (Mezquita et al., 2019; Ortet et al., 2017). The ESEM model's fit was acceptable, but it was still far from excellent according to the typical criteria suggested for practical fit indices (Hu & Bentler, 1999). Nonetheless, it is noteworthy that the adequacy of these typical criteria has yet to be demonstrated with ESEM (Morin et al., 2013). The openness factor was problematic, as most cross-loadings were on this factor and two of its items (31r and 41r) had nonsignificant or very low target loadings. These two items also presented the

lowest loadings in the original BFPTSQ (Morizot, 2014). Tackett et al. (2012) claimed that openness embraces the most maturity-based personality characteristics, with more complex manifestations arising as children age, so greater difficulties are expected in measuring this trait. These specific items actually had suitable factor loadings in an adult Spanish sample (Ortet et al., 2017). However, the two items were also problematic in the Spanish and English versions of the BFPTSQ in samples of college students (Mezquita et al., 2019). Accordingly, the rewording or even the removal of these items should be considered in future studies, mainly because the BFPTSQ was developed to offer a useful, valid measure for both adolescence and adulthood. These challenging results in relation to openness are rather usual in the construction of FFM measures in adolescents. Openness is the most controversial and difficult factor to recover during this developmental stage in comparison to the other four factors (Rogers & Glendon, 2018). Soto et al. (2008) also showed that openness is arguably the most problematic factor of the FFM, particularly with early adolescents, in part because many openness items tend to be unfamiliar or more difficult to understand for younger adolescents.

With regards to factor correlations for the five traits, they were obtained with ESEM. These are possibly closer to the true population parameters and supports the discriminant validity among the FFM traits as measured by the BFPTSQ (Morizot, 2014).

Another interesting finding from the factor analyses is the measurement invariance across genders (Morizot, 2014). The results showed full metric invariance, but only partial scalar invariance, of the BFPTSQ across gender groups. When we compared latent mean scores between boys and girls, we found that boys presented significantly higher levels of emotional stability than girls; and in turn girls had a significant higher mean score of openness. Gender differences are expected in all the

five broad domains, with women scoring lower in emotional stability and higher in the other four traits, but men and women differ more demonstrably on neuroticism (Murphy et al., 2021). Furthermore, the results tend to vary more in adolescence, as there seems to be a developmental influence in shaping these differences (De Bolle et al., 2015).

Reliability of Scores

With regard to reliability, the results in Spanish adolescents replicated the suitable Cronbach's alpha coefficients of the original study, and also the ones obtained with Spanish adults (Ortet et al., 2017). These indices were comparable to other short Big Five/FFM questionnaires (McCrae & Costa, 2010; Soto & John, 2017). We also added a new finding, namely acceptable test-retest reliability indices in adolescents that were adequate and similar to other personality measures for adolescents (Ortet et al., 2012).

Convergent Validity Evidence

To provide convergent validity evidence of the BFPTSQ, we related the five domain scales to the FFM broad traits and facets using the JS NEO-S. Overall, the associations with the JS NEO-S suggest satisfactory validity of the BFQTSQ scales in Spanish adolescents. All the correlations between the broad-dimension scales were high, ranging from .605 for extraversion to .719 for conscientiousness. Moreover, the correlations between the BFPTSQ scales and their target JS NEO-S facet scales were generally moderate to high, and twenty-nine out of thirty facet associations were significant. The only facet that showed nonsignificant link was modesty, which was also the lowest correlation in the original scale (Morizot, 2014).

Criterion-Related Validity

Overall, the associations with the outcome measures suggest satisfactory criterion-related validity evidence of the BFPTSQ scales. Replicating the results with

the original scale (Morizot, 2014), academic performance was associated with conscientiousness and, to a lesser degree, openness, the two most important personality traits for academic achievement at all levels of education, from compulsory (Morales-Vives et al., 2020; Poropat, 2009) to tertiary education (Richardson et al., 2012; Vedel, 2014). The students with high scores in conscientiousness are usually more hard-working, persistent, strive for achievement, and are good at organizing their time and regulating their effort, which allows a better performance at school. Having high scores in openness makes students more prone to be creative, more motivated to learn, want to acquire knowledge and are somewhat more intelligent, which seem be the main reasons behind their high academic performance (Morales-Vives et al., 2020; Tetzner et al., 2020).

We also found the usual positive association of emotional stability (low neuroticism) with life satisfaction, the cognitive component of subjective well-being (Gale et al., 2013; Pavot & Diener, 2011), but the expected correlation with extraversion was not replicated. Being more emotionally unstable (high neuroticism) is linked to experiencing negative affect and emotions such as anxiety, depression, or anger, more frequently and intensely and also having difficulties to cope, which would lower life satisfaction. Conversely, key components of extraversion are positive affect, emotions such as joy, cheerfulness or optimism, and social competence, which enhance life satisfaction (Capone et al., 2021; Suldo et al., 2015). Accordingly, our hypotheses were only partly supported. Emotional stability, but also extraversion, are the best predictors of subjective well-being in adults (Steel et al., 2019) and adolescents (Suldo et al., 2015; Weber & Huebner, 2015).

The main results of the original BFPTSQ in adolescents in relation to internalizing and externalizing symptoms were mostly replicated in the present study.

Internalizing behaviors were associated especially with low emotional stability (neuroticism), which is consistent with previous research (Etkin et al., 2020; Jeronimus et al., 2016; Kotov et al., 2010). Neuroticism is postulated as a vulnerability factor that can account for the comorbidity between highly prevalent mental disorders that have anxiety and fear as the core negative emotions (internalizing). The reason is because highly unstable adolescents are more likely to experience negative attention bias and information recall, rumination, increased reactivity, ineffective coping, intolerance of uncertainty, and fear of negative evaluation (Jeronimus et al., 2016). Moreover, and as was also expected, more disagreeable and unconscientious adolescents scored higher on the externalizing behavior scales and, to a lesser extent, low emotional stability (Etkin et al., 20202; Jones et al., 2011; Kotov et al., 2010). Disagreeable adolescents tend to have an interpersonal style composed of aggressivity, distrust, dishonesty, lower empathy, or egocentricity. Low scores in conscientiousness are related to problems with impulse control, a lack of perseverance or difficulty abiding by society's rules. Accordingly, antagonism (low agreeableness) and disinhibition (low conscientiousness) are proposed as predisposition factors for the comorbidity between antisocial behavior, attention problems, or drug use, among other externalizing disorders (Miller et al., 2008).

Limitations and Future Research

As in the original scale, the Spanish BFPTSQ psychometric properties were generally satisfactory in adolescents but had a few limitations. First, the item content of the openness scale should arguably be reviewed in future studies. Second, the factor structure and measurement invariance across genders should be also replicated with reports from informants, such as parents and teachers. Third, only self-report measures were used for the measurement of both personality traits and outcomes, so there was a potential shared method effect in the criterion validity scores. The results of this study

should be replicated using different methods. Fourth, it is noteworthy that Hispanic adolescents who live in the United States and Latin Americans from different countries use variants of Spanish that differ from the Spanish (Castilian) spoken in Spain. However, the BFPTSQ wording is simple, and it has already shown sound evidence of reliability and validity in Argentinian college students (Mezquita et al., 2019). This limitation may be tackled by investigating the item wording and psychometric properties of the BFPTSQ in samples of Hispanic and Latin American adolescents. Despite these limitations, the results of the present study indicate that the BFPTSQ seems a suitable, noncommercial, FFM short measure for Spanish speaking teenagers. Also, it may be an especially useful instrument for personality trait development as it can be used in both adolescents and adults.

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Table 1

Goodness-of-Fit Statistics from the Confirmatory Factor Analytic and Exploratory Structural Equation Models (n = 1,082).

Model	$\chi^2_{S\text{-}B}$ (*df*)	CFI	TLI	RMSEA	90% CI	SRMR	Ref	$\Delta\chi^2_{S\text{-}B}$ (*df*)	ΔCFI	ΔRMSEA
M1: ICM-CFA	7339.292** (1165)	.585	.564	.070	[.068 .072]	.106	-	-	-	-
M1b: ICM-CFA with CUs	5738.157** (1142)	.691	.669	.061	[.059 .063]	.103	M1	1079.248** (23)	.106	-.009
M2: ESEM	3279.870** (985)	.846	.808	.046	[.045 .048]	.037	M1	3573.427** (180)	.261	-.024
M2b: ESEM with CUs	1937.848** (962)	.934	.917	.031	[.029 .033]	.030	M2	1516.335** (23)	.088	-.015
Gender invariance										
MG1: Configural invariance	3043.009** (1924)	.926	.906	.033	[.031 .035]	.035	-	-	-	-
MG2: λ invariant	3339.113** (2149)	.921	.910	.032	[.030 .034]	.043	MG1	249.282 (225)	-.005	-.001
MG3: λ, τ invariant	3551.309** (2194)	.910	.900	.034	[.032 .036]	.046	MG2	208.344** (45)	-.011	.002
MG3b: λ, τ partially invariant	3530.214** (2193)	.912	.901	.034	[.032 .036]	.046	MG2	188.033** (44)	-.009	.002
MG4: λ, τ, δ invariant	3661.150** (2243)	.906	.898	.034	[.032 .036]	.050	MG3b	112.987** (50)	-.006	.000
MG5: λ, τ, δ, CUs invariant	3683.617** (2266)	.906	.899	.034	[.032 .036]	.050	MG4	15.928 (23)	.000	.000
MG6: λ, τ, δ, CUs, ξ/φ invariant	3720.576** (2281)	.905	.898	.034	[.032 .036]	.056	MG5	29.100* (15)	-.001	.000
MG7: λ, τ, δ, CUs, ξ/φ, η invariant	3859.998** (2286)	.896	.889	.036	[.034 .038]	.061	MG6	124.595** (5)	-.009	.002

Note. ICM-CFA = independent clusters model confirmatory factor analysis; ESEM = exploratory structural equation modeling; χ2 = chi square; *df* = degrees of freedom; CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root mean square error of approximation; 99% CI = 99% confidence interval of the RMSEA; SRMR = standardized root mean square residual; Ref = reference model; ΔSχ2 = Satorra–Bentler scaled chi-square difference test; Δdf = change in degrees of freedom; ΔCFI = change in CFI; ΔRMSEA = change in RMSEA; λ = factor loadings; τ = intercepts; δ = uniquenesses; ξ = factor variances; φ = factor covariances; η = factor means. Based on modification indices, item 47 was freed across groups in MG3b.

*$p < .05$. **$p < .001$.

Table 2

Standardized Factor Loadings From the Exploratory Structural Equation Model of the BFPTSQ Items (M2b; n = 1,082).

	Openness		Extraversion		Agreeableness		Conscientiousness		Emotional Stability		
Item	λ	99% CI	λ	99% CI	λ	99% CI	λ	99% CI	λ	99% CI	δ
1	**.327**	[.217, .438]	**.258**	[.174, .342]	.028	[-.070, .126]	**.129**	[.042, .215]	.030	[-.059, .119]	.751
6	**.421**	[.327, .515]	**.186**	[.107, .266]	.070	[-.020, .160]	-.049	[-.134, .036]	**-.150**	[-.232, -.067]	.686
11	**.429**	[.335, .522]	.061	[-.019, .141]	-.010	[-.102, .081]	.245	[-.156, .333]	.050	[-.035, .135]	.727
16	**.325**	[.226, .424]	**.125**	[.039, .211]	.091	[-.007, .189]	-.070	[-.159, .019]	-.033	[-.128, .061]	.836
21	**.328**	[.223, .433]	**.140**	[.053, .227]	.079	[-.018, .176]	.032	[-.057, .120]	-.019	[-.113, .076]	.825
26	**.335**	[.241, .429]	.048	[-.036, .132]	.060	[-.035, .156]	**.110**	[.018, .203]	**-.091**	[-.181, -.001]	.826
31r	**.156**	[.052, .261]	.082	[-.010, .173]	**.186**	[.086, .286]	.049	[-.049, .148]	**-.114**	[-.212, -.016]	.889
36	**.394**	[.295, .493]	.022	[-.058, .103]	**.137**	[.040, .235]	**.243**	[.157, .328]	-.034	[-.121, .053]	.701
41r	-.049	[-.175, .077]	.013	[-.086, .111]	.048	[-.081, .177]	**.187**	[.074, .300]	-.036	[-.150, .077]	.959
46	**.289**	[.193, .384]	-.009	[-.096, .077]	-.021	[-.116, .074]	**.190**	[.098, .281]	**-.098**	[-.192, -.005]	.863
2	**.101**	[.007, .194]	**.594**	[.523, .665]	.063	[-.022, .148]	.070	[.000, .141]	**-.114**	[-.187, -.041]	.559
7r	**-.321**	[-.406, -.235]	**.653**	[.583, .723]	**-.119**	[-.201, -.038]	.060	[-.012, .133]	**.151**	[.080, .221]	.516
12	**.187**	[.095, .278]	**.389**	[.304, .474]	**.178**	[.078, .277]	.052	[-.033, .138]	.041	[-.047, .129]	.696
17	**.318**	[.228, .408]	**.381**	[.297, .465]	**-.165**	[-.259, -.070]	.022	[-.069, .112]	.009	[-.074, .092]	.715
22r	**-.402**	[-.497, -.307]	**.733**	[.660, .805]	-.019	[-.110, .072]	-.010	[-.089, .069]	-.026	[-.098, .046]	.440
27	**.412**	[.333, .491]	**.350**	[.264, .436]	.023	[-.081, .127]	**.118**	[.029, .207]	**.193**	[.106, .280]	.592
32r	**-.298**	[-.389, -.207]	**.727**	[.662, .792]	**-.146**	[-.230, -.061]	.032	[-.039, .102]	**.167**	[.101, .233]	.433
37	**.087**	[.005, .169]	**.663**	[.595, .730]	**.152**	[.067, .237]	-.018	[-.085, .050]	.024	[-.045, .093]	.467
42	**.357**	[.272, .442]	**.263**	[.174, .352]	-.061	[-.160, .039]	-.067	[-.161, .027]	.000	[-.089, .088]	.772
47	**.167**	[.065, .270]	**.430**	[.349, .511]	**.303**	[.207, .400]	**-.179**	[-.259, -.099]	**-.094**	[-.172, -.015]	.608
3r	**-.177**	[-.273, -.082]	**-.240**	[-.322, -.159]	**.352**	[.244, .460]	.058	[-.044, .160]	**.185**	[.100, .270]	.739
8	**.239**	[.144, .334]	.057	[-.021, .136]	**.413**	[.296, .530]	**.126**	[.036, .216]	**-.099**	[-.178, -.019]	.657
13r	**-.153**	[-.259, -.046]	**-.121**	[-.205, -.036]	**.399**	[.287, .511]	**.151**	[.055, .246]	**.165**	[.076, .253]	.712
18	**.195**	[.076, .315]	-.010	[-.096, .076]	**.468**	[.366, .569]	**-.197**	[-.282, -.112]	.042	[-.041, .124]	.743
23	**.144**	[.037, .251]	**.176**	[.092, .260]	**.416**	[.289, .543]	-.068	[-.162, .025]	.015	[-.075, .105]	.734
28r	**-.430**	[-.528, -.331]	**.233**	[.155, .310]	**.421**	[.318, .525]	.004	[-.084, .092]	**.164**	[.078, .251]	.578
33	**.243**	[.133, .354]	**.091**	[.015, .167]	**.535**	[.422, .648]	-.006	[-.087, .076]	-.030	[-.106, .046]	.574
38r	**-.273**	[-.386, -.160]	**-.103**	[-.171, -.036]	**.608**	[.510, .705]	.092	[-.001, .185]	**.143**	[.063, .223]	.509
43	**.180**	[.079, .282]	**.225**	[.154, .296]	**.501**	[.404, .598]	.056	[-.018, .130]	-.073	[-.148, .003]	.547
48r	**-.304**	[-.409, -.198]	**-.189**	[-.268, -.109]	**.497**	[.395, .599]	**.122**	[.028, .216]	.008	[-.076, .091]	.641
4	**.264**	[.176, .352]	**.084**	[.016, .151]	.042	[-.050, .134]	**.585**	[.502, .667]	**-.088**	[-.162, -.014]	.517
9r	**-.251**	[-.352, -.149]	-.014	[-.084, .057]	-.042	[-.132, .048]	**.595**	[.515, .675]	.030	[-.049, .109]	.606
14	**.178**	[.089, .267]	.011	[-.060, .081]	**.143**	[.049, .238]	**.541**	[.457, .624]	**-.140**	[-.216, -.063]	.582
19r	**-.221**	[-.316, -.127]	.049	[-.029, .127]	-.072	[-.159, .015]	**.564**	[.479, .650]	.046	[-.033, .126]	.649
24r	**-.242**	[-.336, -.147]	.014	[-.065, .093]	.010	[-.093, .114]	**.494**	[.404, .589]	**.101**	[.015, .186]	.671
29	**.182**	[.095, .268]	.013	[-.060, .086]	.084	[-.012, .180]	**.535**	[.443, .627]	**-.106**	[-.185, -.026]	.626
34	**.266**	[.169, .363]	**.102**	[.031, .173]	**.096**	[.002, .191]	**.565**	[.479, .651]	-.058	[-.131, .016]	.497
39	**.277**	[.188, .367]	.063	[-.014, .139]	.025	[-.079, .130]	**.497**	[.404, .589]	**-.093**	[-.174, -.011]	.623
44r	-.054	[-.180, .071]	-.069	[-.140, .003]	**-.197**	[-.297, -.097]	**.613**	[.531, .696]	**.201**	[.123, .278]	.577

49r	**-.180**	[-.265, -.094]	**-.250**	[-.326, -.175]	**.191**	[.097, .285]	**.380**	[.297, .462]	**.237**	[.155, .318]	.592
5r	-.003	[-.087, .080]	**.160**	[.085, .234]	-.002	[-.089, .084]	-.002	[-.083, .079]	**.569**	[.490, .647]	.651
10	**.412**	[.307, .517]	-.047	[-.122, .027]	.034	[-.066, .135]	.034	[-.054, .122]	**.572**	[.484, .660]	.595
15r	-.110	[-.194, .027]	.050	[-.016, .115]	.072	[-.004, .149]	-.018	[-.092, .057]	**.637**	[.562, .712]	.539
20r	**-.182**	[-.280, -.085]	-.016	[-.094, .063]	**-.290**	[-.381, -.200]	**-.125**	[-.209, -.040]	**.381**	[.299, .463]	.687
25	**.363**	[.261, .465]	**.098**	[.011, .185]	.038	[-.065, .141]	-.094	[-.189, .001]	**.430**	[.337, .523]	.736
30r	**-.108**	[-.194, -.023]	-.004	[-.074, .066]	**.149**	[.066, .232]	.023	[-.059, .105]	**.566**	[.491, .642]	.594
35	**.405**	[.300, .510]	-.057	[-.139, .024]	.027	[-.080, .133]	.035	[-.062, .131]	**.480**	[.389, .571]	.684
40r	.012	[-.074, .097]	-.017	[-.082, .048]	-.014	[-.093, .064]	.032	[-.048, .113]	**.702**	[.636, .769]	.502
45r	-.024	[-.115, .067]	**.281**	[.199, .363]	.000	[-.093, .094]	**.099**	[.008, .189]	**.427**	[.340, .514]	.703
50r	**-.093**	[-.181, -.005]	-.024	[-.090, .043]	**.246**	[.158, .334]	.056	[-.024, .136]	**.606**	[.531, .681]	.483

Note. Item numbers with an *r* are reverse scored. Shaded entries are the target loading items. 99% CI = 99% confidence interval; λ = factor loadings; δ = uniquenesses. Bold denotes all the significant factor loadings (i.e., the 99% CI does not cross zero).

Table 3

Point and Interval Estimate of Factor Correlation of the BFPTSQ (n = 1,082).

	1. Openness		2. Extraversion		3. Agreeableness		4. Conscientiousness		5. Emotional Stability	
	φ	99% CI	φ	99% CI	φ	99% CI	φ	99% CI	φ	99% CI
1.	-	-	**.577**	[.438, .715]	.112	[-.073, .298]	**.463**	[.317, .610]	-.120	[-.249, .009]
2.	**.223**	[.165, .282]	-	-	.145	[-.045, .335]	**.320**	[.181, .458]	.092	[-.038, .222]
3.	**.179**	[.077, .282]	**.183**	[.099, .268]	-	-	**.433**	[.313, .554]	**.488**	[.381, .595]
4.	.079	[.000, .157]	**.110**	[.027, .193]	**.339**	[.265, .413]	-	-	**.194**	[.050, .338]
5.	**-.230**	[-.306, -.154]	.002	[-.095, .100]	**.128**	[.015, .240]	**.209**	[.124, .294]	-	-

Note. Latent factor correlations from the final exploratory structural equation model (ESEM, M2b) are presented below the diagonal, while latent correlations from the independent clusters model confirmatory factor analysis (ICM-CFA, M1b) are presented above the diagonal.
φ = factor covariance/ correlation; 99% CI = 99% confidence interval. Bold denotes all the significant correlations (i.e., the 99% CI does not cross zero).

Table 4

Means and Standard Deviations for the BFPTSQ, p Values, and Cohen's d Associated with Gender.

	Combined (n = 1,082)		Males (n = 508)		Females (n = 574)		t Test	
Scales	*M*	*SD*	*M*	*SD*	*M*	*SD*	*p*	*d*
Openness	25.22	6.93	24.10	6.94	26.21	6.78	<.001	-.31
Extraversion	27.43	7.12	27.29	7.25	27.56	7.01	ns	-.04
Agreeableness	28.38	6.07	28.46	5.82	28.30	6.29	ns	.03
Conscientiousness	22.25	7.41	21.83	7.13	22.62	7.63	ns	-.23
Emotional Stability	21.37	7.67	23.74	6.93	19.27	7.68	<.001	.61

Note. Cohen's *d* values of .20, .50, and .80 correspond to small, medium, and large effect sizes, respectively (Cohen, 1992).

Table 5

Internal Consistency and Test-Retest Reliability Indices of the BFPTSQ Scales.

	Internal Consistency (n = 1,082)				Test-Retest (n = 132)	
	α	99% CI	Ω	99% CI	*r*	99% CI
1. Openness	.773	[.745, .798]	.743	[.699, .785]	.773*	[.665, .850]
2. Extraversion	.796	[.771, .819]	.803	[.780, .825]	.835*	[.752, .892
3. Agreeableness	.740	[.708, .769]	.727	[.678, .777]	.718*	[.589, .811]
4. Conscientiousness	.779	[.752, .804]	.799	[.768, .830]	.800*	[.702, .868]
5. Emotional Stability	.803	[.779, .825]	.809	[.786, .833]	.752*	[.636, .835]

Note. α = Cronbach's alpha coefficient; Ω = ordinal omega coefficient; 99% CI = 99% confidence interval.

*$p < .001$.

Table 6

Point and Interval Correlation Estimates Between BFPTSQ and JS NEO-S scales (n = 362).

	BFPTSQ Scales	
JS NEO-S Scales	*r*	99% CI
	Openness	
Openness	.620*	[.529, .697]
Fantasy	.216*	[.083, .341]
Aesthetics	.509*	[.402, .603]
Feelings	.408*	[.289, .515]
Actions	.424*	[.306, .529]
Ideas	.427*	[.310, .531]
Values	.198*	[.065, .324]
	Extraversion	
Extraversion	.605*	[.512, .684]
Warmth	.376*	[.254, .486]
Gregariousness	.460*	[.346, .560]
Assertiveness	.486*	[.376, .583]
Activity	.482*	[.371, .579]
Excitement Seeking	.241*	[.109, .364]
Positive Emotions	.410*	[.291, .516]
	Agreeableness	
Agreeableness	.621*	[.530, .698]
Trust	.559*	[.459, .645]
Straightforwardness	.451*	[.336, .552]
Altruism	.555*	[.454, .642]
Compliance	.493*	[.383, .589]
Modesty	.085	[-.051, .218]
Tender-Mindedness	.347*	[.222, .460]
	Conscientiousness	
Conscientiousness	.719*	[.647, .778]
Competence	.605*	[.512, .684]
Order	.574*	[.476, .658]
Dutifulness	.455*	[.341, .556]
Achievement Striving	.576*	[.478, .660]
Self-Discipline	.663*	[.580, .732]
Deliberation	.417*	[.299, .523]
	Emotional Stability	
Neuroticism[a]	.632*	[.543, .707]
Anxiety	.391*	[.270, .500]
Angry Hostility	.466*	[.353, .565]
Depression	.558*	[.457, .644]
Self-Consciousness	.347*	[.222, .460]
Impulsiveness	.366*	[.243, .477]
Vulnerability	.445*	[.330, .547]

Note. Each personality trait is correlated with its corresponding broad domain and facet scales from the JS NEO-S. 99% CI = 99% confidence interval.

a. Because Emotional Stability is simply the opposite pole, all correlations with Neuroticism and its facets from the JS NEO-S are actually negative and are presented in absolute value to simplify the table.

*$p < .001$.

Table 7

*Point and Interval Estimates of Correlations among **BFPTSQ** and JS NEO-S with Outcome Scales (n = 362).*

Outcome Scales	*r*	99% CI	*r*	99% CI
	Openness BFPTSQ		Openness JS NEO-S	
Academic performance	**.201*****	[.068, .327]	**.241*****	[.109, .364]
Life satisfaction	-.038	[-.172, .098]	.010	[-.125, .145]
Internalizing				
Depression	.101	[-.035, .233]	**.160****	[.025, .289]
Anxiety	**.231*****	[.099, .355]	**.298*****	[.170, .416]
Social anxiety	.108*	[-.027, 240]	.121*	[-.014, 252]
Somatic complains	.098	[-.038, .230]	**.152****	[.017, .281]
Posttraumatic symptoms	**.205*****	[.072, .331]	**.196*****	[.063, .323]
Externalizing				
Hyperactivity/impulsivity	.056	[-.080, .190]	.065	[-.071, .198]
Attention problems	.001	[-.134, .136]	.027	[-.108, .161]
Aggression	-.060	[-.194, .076]	**-.191*****	[-.318, -.057]
Defiant behavior	-.005	[-.140, .130]	-.095	[-.227, .041]
Anger control problems	.090	[-.046, 0.222]	-.014	[-.149, 0.121]
Antisocial behavior	.012	[-.123, .147]	-.107*	[-.239, .028]
SDUs	.035	[-.101, .169]	-.079	[-.212, .057]
	Extraversion BFPTSQ		Extraversion JS NEO-S	
Academic performance	.010	[-.125, .145]	.020	[-.115, .155]
Life satisfaction	.086	[-.050, .219]	**.276*****	[.146, .396]
Internalizing				
Depression	**-.193*****	[-.320, -.059]	**-.266*****	[-.387, -.136]
Anxiety	-.083	[-.216, .053]	-.072	[-.205, .064]
Social anxiety	**-.456*****	[-.557, -.342]	**-.369*****	[-.480, -.246]
Somatic complains	-.064	[-.197, .072]	-.040	[-.174, .096]
Posttraumatic symptoms	**-.177****	[-.305, -.043]	**-.145****	[-.275, -.010]
Externalizing				
Hyperactivity/impulsivity	**.160****	[.025, .289]	**.183*****	[.049, .310]
Attention problems	-.009	[-.144, .126]	-.028	[-.162, .107]
Aggression	-.001	[-.136, .134]	.048	[-.088, .182]
Defiant behavior	.019	[-.116, .154]	-.012	[-.147, .123]
Anger control problems	.118*	[-.017, .249]	.087	[-.049, .219]
Antisocial behavior	.003	[-.132, .138]	.059	[-.077, .193]

SDUs	**.153****	[.018, .282]	.102	[-.034, .234]
	Agreeableness BFPTSQ		Agreeableness JS NEO-S	
Academic performance	**.145****	[.010, .275]	**.199*****	[.066, .325]
Life satisfaction	**.278*****	[.149, .398]	**.259*****	[.128, .381]
Internalizing				
Depression	**-.297*****	[-.415, -.169]	**-.242*****	[-.365, -.111]
Anxiety	**-.150****	[-.279, -.015]	-.093	[-.225, .043]
Social anxiety	-.126*	[-.257, .009]	-.053	[-.187, .083]
Somatic complains	**-.168***	[-.296, -.034]	**-.148****	[-.278, -.013]
Posttraumatic symptoms	**-.195*****	[-.322, -.062]	**-.151****	[-.280, -.016]
Externalizing				
Hyperactivity/impulsivity	**-.258*****	[-.380, -.126]	**-.311*****	[-.428, -.184]
Attention problems	**-.257*****	[-.379, -.127]	**-.296*****	[-.415, -.168]
Aggression	**-.434*****	[-.538, -.318]	**-.566*****	[-.651, -.467]
Defiant behavior	**-.377*****	[-.487, -.255]	**-.440*****	[-.543, -.324]
Anger control problems	**-.327*****	[-.443, -.201]	**-.392*****	[-.501, -.271]
Antisocial behavior	**-.324*****	[-.440, -.198]	**-.431*****	[-.535, -.314]
SDUs	**-.138****	[-.268, -.003]	**-.163****	[-.292, -.029]
	Conscientiousness BFPTSQ		Conscientiousness JS NEO-S	
Academic performance	**.371*****	[.248, .482]	**.365*****	[.242, .477]
Life satisfaction	**.249*****	[.118, .372]	**.261*****	[.131, .383]
Internalizing				
Depression	**-.287*****	[-.406, -.158]	**-.284*****	[-.404, -.155]
Anxiety	**-.228*****	[-.352, -.096]	**-.198*****	[-.324, -.065]
Social anxiety	**-.200*****	[-.326, -.067]	**-.178****	[-.306, -.044]
Somatic complains	**-.237*****	[-.361, -.105]	**-.231*****	[-.355, -.099]
Posttraumatic symptoms	**-.233*****	[-.357, -.101]	**-.212*****	[-.337, -.079]
Externalizing				
Hyperactivity/impulsivity	**-.391*****	[-.500, -.270]	**-.433*****	[-.537, -.316]
Attention problems	**-.579*****	[-.662, -.482]	**-.594*****	[-.675, -.499]
Aggression	**-.276*****	[-.396, -.146]	**-.316*****	[-.433, -.189]
Defiant behavior	**-.318*****	[-.434, -.191]	**-.397*****	[-.505, -.277]
Anger control problems	**-.257*****	[-.379, -.126]	**-.269*****	[-.390, -.139]
Antisocial behavior	**-.243*****	[-.366, -.112]	**-.326*****	[-.442, -.200]
SDUs	-.096	[-.228, .040]	-.080	[-.213, .056]
	Emotional Stability BFPTSQ		Neuroticism JS NEO-S	

Academic performance	.048	[-.088, .182]	-.044	[-.178, .092]
Life satisfaction	**.360*****	[.236, .472]	**-.434*****	[-.538, -.318]
Internalizing				
Depression	**-.577*****	[-.661, -.479]	**.646*****	[.560, .718]
Anxiety	**-.627*****	[-.703, -.537]	**.620*****	[.529, .697]
Social anxiety	**-.340*****	[-.454, -.215]	**.537*****	[.433, .627]
Somatic complains	**-.477*****	[-.575, -.365]	**.481*****	[.370, .578]
Posttraumatic symptoms	**-.545*****	[-.633, -.443]	**.583*****	[.370, .578]
Externalizing				
Hyperactivity/impulsivity	**-.334*****	[-.449, -.208]	**.304*****	[.176, .422]
Attention problems	**-.324*****	[-.440, -.198]	**.380*****	[.258, .490]
Aggression	**-.269*****	[-.390, -.139]	**.188*****	[.054, .315]
Defiant behavior	**-.273*****	[-.394, -.143]	**.216*****	[.083, .341]
Anger control problems	**-.458*****	[-.559, -.344]	**.380*****	[.258, .490]
Antisocial behavior	**-.235*****	[-.359, -.103]	**.149****	[.014, .278]
SDUs	-.125*	[-.256, .010]	.002	[-.133, .137]

Note. SDUs = Standard Drink Units. Bold denotes all the significant correlations (i.e., the 99% CI does not cross zero).
**p* < .05. ***p* < .01. ****p* < .001.