

Spanish Adaptation of the Inventory of Depression and Anxiety Symptoms (IDAS-II) and a study of its psychometric properties

Emotional disorders such as depression and anxiety constitute a worldwide problem of social, clinical and healthcare relevance, particularly among women (APA, 2013; Kessler et al., 2003; Marcus et al., 2012; Van de Velde et al., 2010). The World Health Organization has indicated an increase in the prevalence of these disorders in recent years, affecting (respectively) 4.4% and 3.6% of the world's population (WHO, 2017). Furthermore, emotional disorders are a determining factor in disability and loss of health. The influence of these disorders on the decrease in quality of life has been estimated to be higher than other diseases (e.g. diabetes, arthritis, or asthma) (Alonso et al., 2004; Grandes et al., 2011).

The last decade has seen the emergence of dimensional diagnostic systems for mental disorders, which have aimed to overcome some of the limitations of categorical systems used by most nosological systems (Dell'Osso and Pini, 2012; Dornbach-Bender et al., 2017; Forbes et al., 2016; Kotov et al., 2017; Kraemer et al., 2004; Krueger and Markon, 2011). Categorical systems base diagnoses on the observation of a set of symptoms in terms of their presence/absence, whilst dimensional systems define the symptoms that make up the disorders as a continuous going from normality to pathology (Barlow et al., 2017; Kotov et al., 2017; Skodol, 2012; Widiger and Samuel, 2005). This allows for distinguishing between different levels of severity on symptoms and thus severity of the disorder (Kraemer et al., 2004; Sanz et al., 2003). Although several authors have pointed out the difficulty of applying dimensional systems in the clinical setting (Kraemer et al., 2004), others have emphasized their advantages (Brown and Barlow, 2009; First, 2005; Kotov et al., 2017; Kotov et al., 2018; Kraemer et al., 2004; Krueger and Markon, 2011). The Diagnostic and Statistical

Manual of Mental Disorders (DSM-5) (APA, 2013) itself has pointed out the need for an increase in empirical studies concerning the dimensional systems.

From a metric perspective, there are several depression and anxiety instruments that provide a dimensional score, such as the Beck Depression Inventory (BDI-II) (Beck et al., 1996), the Beck Anxiety Inventory (BAI) (Beck et al., 1988), and the State-Trait Anxiety Questionnaire (STAI) (Spielberger et al., 1983). Although the usefulness of these tools is unquestionable, some authors have made critical observations regarding these instruments (Joiner et al., 2005). First, the high correlations found between measures of depression and anxiety could bring into question the validity of these instruments for discriminating between the two disorders (Steer et al., 1995; Watson et al., 1995). Further, a lack of correspondence between the content specification of these instruments and the diagnostic criteria included in the diagnostic classifications makes it difficult to fully integrate the diagnosis, intervention, and evaluation of outcomes within the diagnostic classification systems DSM and ICD (Osman et al., 2004; Penley et al., 2003). For this reason, some authors have pointed out the need to develop instruments that allow for better application of dimensional systems in both the scientific and clinical field (Bullis et al., 2019).

The Inventory of Depression and Anxiety Symptoms (IDAS) (Watson et al., 2007) is an instrument composed of 11 scales, developed to evaluate specific symptoms of depression and anxiety. Subsequently, the Expanded Version of the IDAS (IDAS-II) (Watson et al., 2012) was developed with 18 specific symptom scales as well as a General Depression scale (containing items from other IDAS-II scales that gives an overall depression symptom score). The IDAS-II adds the assessment of symptoms of bipolar disorder and other anxiety-based disorders: obsessive-compulsive disorder (OCD), post-traumatic stress disorder (PTSD), social anxiety disorder (SAD) and claustrophobia. The items in both versions assess the symptom dimensions that underlie the DSM diagnoses; as such, they provide dimensional

assessment of each of specific symptoms of depression and anxiety dimensionally. This information is relevant at a clinical and research level, since it allows for identifying the differential impact of each symptom on the patient (Fried and Nesse, 2014, 2015).

In the operational definition of both instruments, the authors developed the scales aiming to assess the specific symptoms that make up the mood and anxiety disorders. This approach is consistent with the Hierarchical Taxonomy of Psychopathology (HiTOP) (Kotov et al., 2017), a model that groups symptoms into categories, that are organized hierarchically, grouping specific symptoms into disorders, spectra and ultimately into higher order factors. In the case of the IDAS-II, its subscales are theoretically framed within the Internalizing spectrum, which includes the sub-factors of Fear, Distress, and Mania.

The psychometric studies conducted with the IDAS-II have shown adequate internal consistency and test-retest correlations (Watson and O'Hara, 2017). Based on discriminant validity evidence, the comparison of normative population scores with those of the clinical population has shown large effect sizes between $d = 0.83$ and $d = 0.93$ for the General Depression and Dysphoria scales. Further, Stasik-O'Brien et al. (2019) examined the clinical utility of the IDAS scales and found sensitivity, specificity, and AUC values to be moderate to adequate for identifying DSM-IV clinical diagnoses. Regarding the internal structure of the IDAS-II, exploratory and confirmatory factor analysis carried out on the 18 IDAS-II scales revealed the presence of three factors (Irak and Albayrak, 2018; Watson et al., 2012): a) The Distress factor of the IDAS-II is made up of scales that evaluate symptoms of major depressive disorder, generalized anxiety disorder, and PTSD, which correspond to the Distress factor of HiTOP; b) The Obsessions/Fear factor of the IDAS-II is made up of scales that evaluate symptoms of SAD, specific phobia, and OCD, which correspond to the Fear factor of HiTOP; and c) the Positive Mood factor of the IDAS-II is made up of scales that assess symptoms of bipolar disorder, which correspond to the Mania factor of HiTOP. This

body of psychometric evidence indicates that the IDAS-II represents one of the instruments for measuring the Internalizing spectrum symptoms that are best framed within the HiTOP model (Kotov et al., 2017). Currently, the IDAS-II is available in its original English version (Watson et al., 2012) and has recently been adapted to Turkish (Irak and Albayrak, 2018). However, a Spanish version is not currently available.

Thus, the objective of the present study is to adapt the IDAS-II to the Spanish context in a student and a community sample. For this, the original instrument will be adapted to the Spanish context following the guidelines of the International Test Commission (ITC, 2017). Results of psychometric properties of the Spanish version of the IDAS-II will be presented. Specifically, estimations of the reliability of the instrument (internal consistency and temporal stability) and a study validity evidence (based on the relationship with other variables and based on the internal structure) will be provided. In terms of reliability, we expect to find both high internal consistency and stability between test-retest scores, in line with previous studies (Irak and Albayrak, 2018; Watson and O'Hara, 2017, Watson et al. al., 2012). In terms of validity, we expect to find strong and positive correlations between the IDAS-II scales and other measures of depression, anxiety, bipolarity, PTSD and OCD (Irak and Albayrak, 2018; Watson and O'Hara, 2017; Watson et al., 2007, 2008, 2012). Finally, it is expected that the internal structure of the Spanish version of the IDAS-II will be composed of three factors similar to the English and Turkish versions of the IDAS-II (Irak and Albayrak, 2018; Watson et al., 2012).

Methods

Participants

The present study used a sample of university students and a community sample. The first sample was composed of 378 undergraduate students from the University of Huelva selected by convenience sampling. Of the student sample, 57.9% were female ($n = 219$), and

the age of the sample ranged between 17 and 49 years ($M = 20.94$, $SD = 3.06$). A subgroup of 100 students from the total sample selected by convenience sampling re-completed the IDAS-II seven days after the first administration of the test, forming the sample for the test-retest reliability analysis.

The community sample consisted of 620 adults, also selected through non-probabilistic procedures; 50.16% were selected by convenience sampling from a group of attendees at adult training workshops in the province of Huelva. The rest of the community sample was selected by snowball sampling, recruited from relatives and acquaintances of university students of the Degree in Psychology at the University of Huelva. In this sample, 51.9% of the participants were male ($n = 322$), and the age of the sample ranged between 18 and 70 years ($M = 42.52$, $SD = 14.32$).

Instruments

The Spanish translation of the IDAS-II was administered; each of its 99 items is answered using a 5-point Likert scale ranging from 1 ("not at all") to 5 ("extremely"). Participants rate the severity of their symptoms during the last two weeks. The IDAS-II is comprised of two broad scales (Dysphoria and General Depression) and 18 specific scales: Lassitude, Insomnia, Suicidality, Appetite Loss, Appetite Gain, Well-Being, Ill Temper, Mania, Euphoria, Panic, Social Anxiety, Claustrophobia, Traumatic Intrusions, Traumatic Avoidance, Checking, Ordering and Cleaning. The Dysphoria scale is non-specific in nature, assessing the shared cognitive and affective symptoms of depression and anxiety disorders. The General Depression scale includes items from the IDAS-II specific scales and gives an overall depression symptom score, thus resembling other traditional measures of depression such as the BDI-II. The 18 specific scales reflect three underlying factors: Distress, Obsessions/Fear, and Positive Mood (Watson et al., 2012).

In order to examine the convergent and discriminant validity of the IDAS-II scales, several additional instruments were administered. Depression symptoms were measured using the Spanish translation of the Beck Depression Inventory-II (BDI-II) (Beck et al., 1996; Sanz et al., 2003). This instrument evaluates the presence and severity of depressive symptomatology during the past two weeks. In the present study, this instrument was found to be internally consistent (Cronbach's $\alpha = .89$ in the student sample and $.90$ in the community sample).

Anxiety symptoms were assessed via the Spanish translation of the Beck Anxiety Inventory (BAI) (Beck and Steer, 1990; Sanz and Navarro, 2003). This instrument evaluates the severity of anxiety symptoms during the past seven days. The BAI demonstrated strong internal consistency in the present study, with a Cronbach's α value of $.91$ in the student sample and $.93$ in the community sample.

The Spanish adaptation of the Hypomania Check List-32 (HCL-32) (Angst et al., 2005; Vieta et al., 2007) was used to measure hypomania symptoms. Reliability analyses revealed that Cronbach's α coefficients ranged from $.77$ in the student sample to $.83$ in the community sample.

The Spanish version of the Post-traumatic Stress Disorder Checklist-Civilian Version (PCL-C) (Orlando and Marshall, 2002; Weathers et al., 1993) was used to measure PTSD symptoms corresponding to criteria B (re-experiencing), C (avoidance), and D (arousal) of the diagnostic criteria for DSM-IV PTSD. In the current study, the instrument had strong internal consistency (Cronbach's $\alpha = .94$ in the student sample and $.93$ in the community sample).

Finally, OCD symptoms were assessed using the Spanish translation of the Obsessive-Compulsive Inventory-Revised (OCI-R) (Foa et al., 2002; Fullana et al., 2005). Its 18 items

measures the severity of OCD symptoms. Evidence of internal consistency was shown by a Cronbach's alpha value of .90 for the community sample and .89 for the student sample.

In addition, a set of questions were included to gather data on socio-demographic variables related to sex, age, educational level, employment and marital status.

Procedure

Before beginning the process of adapting the IDAS-II, the research team requested authorization from the authors of the original IDAS-II and made an assessment on the preconditions established by the International Test Commission (ITC, 2017). This assessment was made by members of the research team and a psychiatrist with experience in patient evaluation and intervention. The adaptation process was carried out considering the linguistic, psychological, and cultural aspects of both the culture of origin and the Spanish culture. Initially, three members of the research team independently translated the IDAS-II items. Agreement rates were then calculated for the resulting translations; 100% agreement was reached for 73 of the 99 items and 66% for the remaining 26 items. The items that showed discrepancies were discussed in order to reach an agreement on wording. Next, the original items in English were presented —along with the proposed translations for all 99 items— to a fluent English-speaking psychiatrist with residence and a professional career path in the United States. This psychiatrist had to select those translation proposals that they considered to be the most conceptually appropriate in terms of their meaning in English. Moreover, an alternative wording could be proposed. The 99 items proposed by the research team were considered appropriate by the psychiatrist. Additionally, minor modifications made by research team were made for certain items (mainly verb forms), which were incorporated into the final 99 items administered.

A psychologist administered the Spanish version of the IDAS-II to the student and community samples and informed the participants about the anonymous and voluntary nature

of their participation in the study. The tests were administered in small groups and lasted between 25 and 40 minutes. The students completed the tests in a classroom at the University of Huelva whereas participants in the community sample completed the tests in rooms set up in the various social service and training centers where they were recruited. This study was approved by the Bioethics Committee of the University of Huelva.

Data Analysis

Descriptive statistics were used to characterize both samples. Item discrimination was conducted by calculating the corrected item-total correlation between each item and its subscale. Internal consistency was measured using Cronbach's alpha coefficient and split-half reliability was measured using the Spearman-Brown coefficient. To estimate the short-term test-retest reliability of the scales, correlations were calculated between participants' scores on the IDAS-II across a one-week interval.

Validity evidence based on the internal structure of the IDAS-II scales was determined through a CFA in both samples. We modeled our analyses on those used in the original development of the IDAS-II (Watson et al., 2012). Preliminary analysis of the data revealed the absence of multivariate normality in both the student sample (Mardia coefficient = 36.34) and the community sample (Mardia coefficient = 63.42). Accordingly, the least squares method with robust estimators was used for CFA. The factorial structure of the IDAS-II was tested, composed of three factors (Distress, Obsessions/Fear, and Positive Mood) encompassed in a second order factor equivalent to the "Internalizing" spectrum of the HiTOP model. The following statistics were used to evaluate the fit of the model: the Satorra-Bentler goodness-of-fit statistic χ^2 , the root mean square error of approximation (RMSEA), the comparative fit index (CFI) (Bentler, 1990), the non-normalized fit index (NNFI) and the Akaike Information Criterion (AIC). According to Hu and Bentler (1999), values of CFI and NNFI $\geq .95$ and RMSEA lower than .06 were regarded as indicators of a good fit. The study of

validity evidence based on the relationship with other variables was conducted by calculating the Pearson correlation coefficient between the scores of the IDAS-II scales and the scores of the other instruments (BDI-II, BAI, HCL-32, PCL-C, and OCI-R).

The analyses were carried out using SPSS (Version 25) and EQS (Version 6.2).

Results

Descriptive analyses of the measurements of the scales and estimation of reliability

Table 1 shows the means and standard deviations of the scores of the scales of the IDAS-II, the mean discrimination index of the items of each scale, the reliability estimated by different procedures, and the test-retest correlations, for both the student and community samples. Discrimination indexes ranged .45 (Lassitude) - .77 (Appetite Loss) for the student sample and .46 (Lassitude) - .71 (Appetite Loss) for the community sample. The values of the alpha coefficients were greater than .70 for all scales, being above .80 for most of the IDAS-II scales in both samples. Spearman-Brown coefficient yielded values higher than .70 for all the scales in both samples. Test-retest correlations ranged between .61 (Traumatic Avoidance) and .89 (Suicidality) for all scales except for Appetite Loss, which showed a value .49.

INSERT TABLE 1

Validity Evidence based on internal structure

Table 2 shows the Pearson correlation coefficients between the subscales of the IDAS-II in both samples. The correlation coefficients in the community sample ranged between -.33 (Well-Being/Dysphoria) and .74 (Panic/Dysphoria). For the student sample, these values ranged from -.48 (Well-Being/Dysphoria) and .69 (Panic/Dysphoria). Higher correlations are observed between the scales of the same factor (e.g., Dysphoria/Suicidality) and lower correlations between the scales of different factors (e.g., Dysphoria/Euphoria).

INSERT TABLE 2

Through CFA, we tested the three factors proposed by the authors: Distress, Obsessions/Fear, and Positive Mood (Watson et al., 2012). According to the HiTOP model (Kotov et al., 2017), a hierarchical structure was hypothesized where these three factors were subsumed under a second order factor (Internalizing spectrum). This structure was evaluated in both the student and community samples [See Fig. 1 and Fig. 2].

INSERT FIGURES 1 AND 2

The results obtained for the model in the student sample were $S-B\chi^2_{(153)} = 4799.38$; $CFI = .997$; $NNFI = 0.997$; $AIC = -205.10$; $RMSEA = .016$ (90% confidence interval [CI : .00, .03]). Fig. 1 shows the values of the standardized loads of the model obtained in the sample of students, which ranged between .28 (Distress/Well-Being) and .85 (Distress/Dysphoria). The values of the loads of the second order factor on the factors of Distress, Obsessions/Fear and Positive Mood were .72, .97, and .78 respectively.

In addition, the results obtained for the model in the community sample were $S-B\chi^2_{(153)} = 11145.50$; $CFI = .971$; $NNFI = 0.967$; $AIC = -156.54$; and $RMSEA = .062$ (90% confidence interval [CI : .06, .07]). Fig. 2 shows the values of the standardized loads obtained in the community sample, which ranged from .14 (Distress/Well-Being) and .91 (Positive Mood/Mania). The values of the loads of the second order factor on the factors of Distress, Obsessions/Fear, and Positive Mood were .86, .92, and .90 respectively.

Validity evidence based on the relationship with other variables

Validity evidence based on the relationship with other variables is shown in Table 3. Convergent and discriminant validity coefficients show favorable evidence of validity in most scales, so that higher correlations are found with the instruments that measure the same constructs. On the other hand, correlations with scales that measure different constructs are lower. For example, the highest correlation found in the community sample ($r = .79$) was observed between the IDAS-II General Depression scale and the total BDI-II score. This trend is similar for the rest of the scales characteristic of depressive symptoms. Among the scales framed within anxiety disorders (Panic, Social Anxiety, Claustrophobia, etc.), the highest correlations are observed with BAI, particularly the Panic Scale ($r = .79$). The scales related to bipolar disorder obtain the lowest correlations, the highest being those obtained with the HCL-32 ($r = .19 / .26$). In the Traumatic Intrusions scale, the highest correlations can be observed with the PCL-C ($r = .42 / .57$). In the case of the Checking, Ordering, and Cleaning scales, the highest correlations are found with the OCI-R. However, there are also some high correlations that were not expected from a theoretical perspective. Thus, for example, the Mania scale shows higher correlations with the BDI-II and with the BAI, compared with the HCL, the latter being the one that, theoretically, would be expected to have the strongest correlations with the Mania scale. The Social Anxiety scale shows high correlations with both the BDI-II and the BAI, although it was expected that the correlation with the first instrument would be lower. The Traumatic Intrusions scale also shows higher correlations with the BDI-II and BAI than with the PCL-C.

INSERT TABLE 3

Discussion

The objective of this study was to adapt the IDAS-II to the Spanish context and to report its psychometric properties in terms of reliability and evidence for validity. The results obtained are equivalent to those reported in previous studies using the English and Turkish versions (Irak and Albayrak, 2018; Watson et al., 2012). We obtained values of internal consistency and temporal stability across a one-week interval higher than those recommended in most scales. The results are congruent with the hypothesized internal structure of the instrument, as well as with the HiTOP model (Kotov et al., 2017). However, evidence of validity based on the relationship with other variables has yielded both favorable and unexpected correlations. In general terms, the Spanish version of the IDAS-II appears to be an adequate instrument for use in the research context, although if it is to be employed in a clinical context it will be necessary to carry out studies that complement these results.

In terms of reliability, the present study suggests an adequate internal consistency of the Spanish adaptation of the IDAS-II. Similar to previous IDAS-II studies (Irak and Albayrak, 2018; Watson et al., 2012), the Cronbach alpha values obtained in both samples exceed .80 for most scales. Moreover, with a greater number of items than the other scales, the General Depression scale demonstrates the highest alpha value. On the other hand, the lowest internal consistency values correspond to the Mania, Checking, and Suicidality scales in the community sample, and the Lassitude, Mania and Appetite Gain scales in the student sample. Irak and Albayrak (2018) found similar results, although unlike their study, none of the alpha coefficients obtained in the present study were lower than .70. With respect to temporal stability, the obtained results appear to confirm that the Spanish adaptation of the IDAS-II presents a level of stability that is comparable to the original version (Watson et al., 2012). The test-retest correlations in the one-week interval were greater than .70 for most of the scales in the sub-sample of 100 students. However, five scales (Lassitude, Insomnia,

Appetite Loss, Ill Temper and Traumatic Avoidance) had test-retest correlations lower than the recommended minimum of .70 (Joiner et al., 2005). The results obtained are consistent with those found in the development of the instrument (Watson and O'Hara, 2017), where again, Dysphoria and Social Anxiety are among the scales that have the highest test-retest correlation coefficients, with Appetite Loss being the one that shows the lowest correlation coefficient. The results provided by these authors also indicate a decrease in the stability values as the time interval between the measurements increases. This decrease may reflect the fact that the IDAS-II is sensitive to change, since it is an instrument for evaluating symptoms rather than stable traits (Nezu et al., 2000; Watson and O'Hara, 2017).

Regarding the internal structure, the results provide empirical evidence consistent with the operational definition of the instrument and the theoretical HiTOP model (Kotov et al., 2017). The correlations between the specific scales of the IDAS-II show congruence with the structure of the instrument, observing higher correlations between scales belonging to the same factor, suggesting that the scales measure related but different constructs. In turn, lower correlations are observed between scales belonging to different disorders, suggesting the capacity of the instrument to evaluate specific symptoms of each disorder. The results of the present study are consistent with those of two previous studies conducted to validate the IDAS and the IDAS-II (Irak and Albayrak, 2018; Watson et al., 2012, 2007). The CFA suggests that the IDAS-II is organized into three factors in both the sample of students and the community sample. In the study of the original instrument (Watson et al., 2012), the results of exploratory factor analysis revealed that the scales of Mania and Social Anxiety showed cross-factorial loads. The present study frames this instrument within the HiTOP model (Watson, 2012; Kotov et al., 2017). Thus, according to the theoretical organization of the model, and considering the content of the scales, the Social Anxiety scale loaded on the Obsessions/Fear factor, and the Mania scale on the Positive Mood factor (Kotov et al., 2017;

Watson et al., 2012). Likewise, the confirmation of the membership of the Well-Being scale in the Distress factor is further evidence of the strong association between low Well-Being and depression (Kotov et al., 2017; Mineka et al., 2002; Watson et al., 2007). Finally, it is worth mentioning that this study shows, for the first time, that the three factors of the IDAS-II are subsumed under a second-order factor, which under the conceptualization of HiTOP reflects the Internalizing spectrum (Kotov et al., 2017).

In terms of evidence based on the relationship with other variables, the results are similar to those found in the studies of the original and Turkish versions of the instrument (Irak and Albayrak, 2018; Watson et al., 2007, 2012). Certain scales show favorable and congruent evidence with the established hypotheses. This is the case for the General Depression, Dysphoria and Well-Being scales, which show higher correlations with BDI-II scores, whilst the Panic scale is correlated with BAI scores and the scales that assess OCD symptoms (Checking, Ordering, and Cleaning) are correlated with the total score of the OCI-R (OCD). Also, in accord with the hypotheses, Euphoria showed the highest correlations with the HCL-32 scores (mania) than with the rest of the instruments, albeit low. This result, also observed in the study by Watson et al. (2012), could be explained in part by the differences between the IDAS-II and the HCL-32 in terms of the time frames used for the evaluation of symptoms. In particular, while the IDAS-II evaluates the symptomatology present during the last two weeks, the HCL-32 evaluates the symptomatology that the person presents during a period of elevated mood, which may have occurred prior to the last two weeks.

Despite this set of favorable evidence, it is worth mentioning that some non-hypothesized results were found in the present study. For instance, the Appetite Loss scale, in line with the study by Watson et al. (2007), shows slightly lower correlations with the BDI-II with respect to the BAI. Further, and in accord with previous studies (Irak and Albayrak, 2018; Watson et al., 2007), the Social Anxiety scale is equally related to the BDI-II and the

BAI. Contrary to our expectations, we found that Mania presented higher correlations with the BDI-II, the BAI, the PCL-C and the OCI-R than with the HCL-32 in both samples, and the PTSD scales showed correlations with the BDI-II and the BAI. These results could be explained in part by the high co-occurrence observed among disorders such as SAD and depression (Brown et al., 2001, Cohen et al., 2017; De Jong et al., 2012) or the comorbidity between the symptoms of PTSD and depression and anxiety (Geng et al., 2019; Price et al., 2019). Another alternative explanation to these results could be linked to the limited discriminative capacity (indicated in the literature) of some of the instruments used as “gold standard” (e.g., Steer et al., 1995; Watson et al., 1995).

From a clinical standpoint, the high comorbidity observed on affective and anxiety disorders, has led some authors focus on the common underlying mechanisms of emotional disorders, rather than on the differences (Barlow, Allen & Choate, 2016). International organizations such as the National Institute of Mental Health (NIMH) have made a call for the development of transdiagnostic diagnostic and intervention systems (Insel et al., 2010; Krueger & Eaton, 2015), which exceed the traditional diagnostic categories and center attention on the dimensions that are common to the disorders. The literature suggests that interventions designed to treat a specific disorder have shown poorer results when addressing comorbid patients (Weisz et al., 2017). In this sense, transdiagnostic therapeutic proposals concentrate, not so much on the specific diagnostic category of a patient, but on the evaluation and intervention of the underlying symptomatic dimensions, common to each of the psychological disorders (Barlow et al., 2017). An example of this type of interventions is the Unified Protocol, which is showing improvements in a high variety of patients with a lower cost (Bullis et al., 2015; García-Escalera et al., 2017; Norton and Paulus, 2016). Transdiagnostic approaches has also shown favorable results on the prevention of anxiety and

depression symptoms in children (Fernández-Martínez, Orgilés, Morales, Espada & Essau, 2020). In this framework, the IDAS-II represents a promising diagnostic tool that can be useful according to these transdiagnostic orientations. On the one hand, the IDAS-II specific scales consider the dimensional evaluation of the symptomatology of multiple symptoms of different disorders simultaneously. On the other hand, the two broad scales, Dysphoria and General Depression, assess the core of the depressive and anxiety disorders and can serve as very efficient standalone measures of general internalizing pathology (Stasik-O'Brien et al., 2018).

Limitations

Although the present study provides evidence of both the reliability and validity of the IDAS-II, some limitations are worth noting. Firstly, the selection of the participants was carried out through accessibility sampling, a fact that limits the generalizability of the results. Secondly, this study was conducted exclusively on student and community samples, and the sample used for the study of temporal stability was limited to 100 university students. Therefore, it is necessary to replicate this study on patient samples in order to obtain evidence of reliability and validity of the IDAS-II on this population. For example, Watson and O'Hara (2017) reported test-retest correlations in the one-week interval above .70 for all scales of the first version of the IDAS in a sample of 250 patients. In this sense, the more stable scores obtained for patient samples compared to community samples could reflect the rigidity or emotional inflexibility observed in patients with depression (Gilbert et al., 2019; Schwartz et al., 2019). It could, therefore, in future studies be desirable to examine the internal consistency using larger and more heterogeneous samples. Thirdly, some of the measures used as *gold-standard* have presented limitations. For example, the HCL-32 was the gold-standard measure for bipolarity scales but showed weaker relationships with the Mania and

Euphoria scales in the work of Watson et al. (2012). In this regard, it would be worth raising the possibility of using another gold-standard measure to validate these scales. However, at the time of the present work, HCL-32 was the only *gold-standard* for bipolarity scales available in Spanish among those already used by Watson et al. (2012) for the development of IDAS-II. Further, some authors have pointed out the limitations of the discriminative capacity of BDI-II and BAI (Steer et al., 1995; Watson et al., 2012). However, the BDI-II and the BAI, besides being among the most widely used instruments in the Spanish context (Muñiz and Fernández-Hermidia, 2010; Sanz, 2014), were also used as *gold-standard* measures in the previous studies conducted to validate the IDAS and IDAS-II (Irak and Albayrak, 2018; Watson et al., 2007). Thus, in spite of its limitations, the use of the BDI-II and BAI allows for the comparability of the results obtained in the present study. Finally, the present study was unable to employ *gold-standard* measures that specifically evaluate Well-Being, Social Anxiety, and Claustrophobia. Future studies should include instruments that evaluate these symptoms in order to test the convergent and discriminant validity of such scales.

Conclusions

This work is the first to adapt the IDAS-II to the Spanish context and examine its psychometric properties, thus providing new researchers and clinical professionals with a version of this instrument that can be used in future studies. In addition, this study is also the first to provide evidence on the correspondence between the internal structure of the IDAS-II and the hierarchical taxonomy of the HiTOP model. This allows for continuity of the research on the symptoms that make up the Internalizing spectrum of the HiTOP model in the Spanish context. In light of the results obtained—and bearing in mind the advantages that this instrument provides compared with those already available in Spanish—the IDAS-II could be a useful tool for the evaluation of the severity of depression, anxiety, and bipolarity symptoms in the Spanish population in transdiagnostic clinical approaches and in a research context.

However, future studies are still required to confirm the psychometric properties of this instrument in other subpopulations such as adolescents and patients, and to show evidence of its usefulness in clinical contexts.

Authors contributions

CDB, OML and ADC has contributed on the conception and design of study. ADC, OML and MSG has contributed on the acquisition of data. ADC, MSG and AJR had participated on the analysis of data. ADC, SSO, CDB had participated on the interpretation of data. ADC, CDB, SSO had drafted the manuscript. All authors have revised the manuscript critically for intellectual content and approved the final version of the manuscript submitted.

Declaration of Competing Interest

The authors declare that there are no conflicts of interest to report.

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Supplementary materials

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Table 1. Analysis of the scales and reliability of the IDAS-II for the student (n = 378) and for the community sample (n = 620)

	<i>M (SD)</i>		<i>Mean item-total corrected r</i>		<i>Cronbach α</i>		<i>Split-halves reliability</i>		<i>Test – retest r (n=100)</i>
	<i>S</i>	<i>C</i>	<i>S</i>	<i>C</i>	<i>S</i>	<i>C</i>	<i>S</i>	<i>C</i>	<i>S</i>
General depression	43.96 (21.56)	42.09 (21.05)	.51	.55	.89	.91	.92	.94	.76**
Dysphoria	21.98 (11.55)	20.82 (11.03)	.57	.63	.86	.89	.88	.90	.78**
Lassitude	14.36 (6.93)	12.66 (6.80)	.45	.46	.72	.75	.74	.77	.66**
Insomnia	13.41 (7.32)	13.31 (7.46)	.63	.70	.85	.89	.90	.90	.62**
Suicidality	7.31 (3.88)	7.27 (3.66)	.64	.50	.82	.72	.88	.77	.89**
Appetite loss	5.06 (2.85)	4.63 (2.64)	.77	.71	.88	.85	.91	.84	.49**
Appetite gain	6.93 (3.72)	6.01 (3.49)	.53	.56	.71	.74	.80	.78	.77**
Well-Being	24.61 (8.66)	23.56 (8.97)	.64	.53	.88	.82	.90	.86	.81**
Ill Temper	9.94 (5.66)	9.90 (5.63)	.63	.64	.83	.84	.82	.84	.68**
Mania	10.34 (6.07)	10.26 (5.79)	.47	.50	.71	.71	.74	.79	.72**
Euphoria	9.60 (5.42)	9.08 (5.11)	.58	.52	.80	.75	.80	.75	.80**
Panic	12.99 (7.35)	13.23 (7.91)	.60	.66	.85	.89	.85	.88	.84**
Social anxiety	11.53 (6.89)	10.53 (6.36)	.58	.56	.82	.80	.84	.82	.84**
Claustrophobia	7.01 (4.39)	7.84 (5.00)	.70	.70	.87	.87	.89	.87	.74**
Traumatic intrusions	6.91 (4.36)	6.71 (4.18)	.70	.70	.86	.86	.88	.87	.76**
Traumatic avoidance	9.38 (5.05)	8.54 (4.73)	.70	.70	.86	.85	.86	.87	.61**
Checking	6.63 (3.55)	6.02 (3.18)	.64	.53	.79	.71	.86	.75	.76**
Ordering	10.25 (5.49)	10.15 (5.47)	.50	.54	.74	.77	.82	.85	.81**
Cleaning	11.71 (7.45)	11.59 (7.31)	.60	.61	.84	.85	.89	.87	.83**

Note: S: Students; C: Community; IDAS = IDAS-II: Inventory of Depression and Anxiety Symptoms-II

Table 2. Pearson's correlations between the IDAS-II scales for the community (n = 620) and for the student sample (n = 378)

Escalas IDAS-II	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 General depression	1	.70**	.65**	.51**	.52**	.34**	-.33**	.68**	.58**	.21**	.74**	.66**	.45**	.66**	.46**	.44**	.29**	.30**
2 Dysphoria	.52**	1	.48**	.32**	.41**	.40**	-.16**	.55**	.49**	.22**	.59**	.52**	.38**	.49**	.35**	.39**	.25**	.26**
3 Lassitude	.49**	.41**	1	.38**	.45**	.26**	-.23**	.48**	.45**	.17**	.62**	.46**	.37**	.50**	.30**	.36**	.24**	.29**
4 Insomnia	.53**	.31**	.29**	1	.27**	.26**	-.19**	.41**	.35**	.24**	.52**	.47**	.35**	.47**	.32**	.33**	.18**	.28**
5 Suicidality	.44**	.32**	.35**	.22**	1	.03	-.13**	.36**	.33**	.18**	.49**	.31**	.35**	.34**	.34**	.31**	.18**	.24**
6 Appetite loss	.29**	.36**	.23**	.22**	-.05	1	.01	.42**	.35**	.25**	.27**	.31**	.19**	.32**	.23**	.30**	.17**	.22**
7 Appetite gain	-.48**	-.22**	-.18**	-.33**	-.17**	.02	1	-.15**	-.02	.39**	-.22**	-.22**	-.10*	-.11**	.03	.03	.17**	.02
8 Well-Being	.63**	.47**	.48**	.47**	.33**	.30**	-.30**	1	.55**	.32**	.62**	.49**	.39**	.53**	.36**	.44**	.29**	.29**
9 Ill Temper	.45**	.37**	.37**	.26**	.23**	.34**	-.02	.41**	1	.47**	.59**	.43**	.45**	.47**	.43**	.55**	.47**	.46**
10 Mania	.05	.16**	.19**	.07	.00	.38**	.46**	.13**	.47**	1	.32**	.23**	.29**	.26**	.42**	.43**	.46**	.39**
11 Euphoria	.69**	.45**	.52**	.54**	.45**	.25**	-.27**	.59**	.44**	.18**	1	.55**	.57**	.62**	.42**	.47**	.29**	.35**
12 Panic	.68**	.37**	.36**	.47**	.30**	.27**	-.33**	.46**	.33**	.03	.54**	1	.47**	.50**	.39**	.43**	.30**	.34**
13 Social anxiety	.40**	.26**	.31**	.31**	.30**	.20**	-.16**	.32**	.35**	.17**	.49**	.45**	1	.38**	.42**	.46**	.35**	.51**
14 Claustrophobia	.62**	.35**	.46**	.58**	.30**	.16**	-.31**	.53**	.33**	.06	.58**	.47**	.36**	1	.51**	.43**	.28**	.28**
15 Traumatic intrusions	.35**	.24**	.26**	.09	.24**	.14**	-.05	.31**	.29**	.23**	.31**	.32**	.28**	.38**	1	.42**	.38**	.40**
16 Traumatic avoidance	.32**	.18**	.23**	.11*	.12*	.27**	.05	.26**	.53**	.39**	.27**	.34**	.35**	.19**	.23**	1	.62**	.54**
17 Checking	.21**	.22**	.14**	.10	.06	.26**	.10*	.21**	.44**	.35**	.15**	.21**	.35**	.12*	.20**	.62**	1	.52**
18 Ordering	.20**	.16**	.15**	.07	.08	.29**	.02	.15**	.32**	.23**	.14**	.24**	.33**	.14**	.26**	.45**	.47**	1

Note: The correlations of the community sample are presented in the upper diagonal; the correlations of the sample of students are presented in the lower diagonal; IDAS-II: Inventory of

Depression and Anxiety Symptoms-II *p<.05; **p<.001.

Table 3. Pearson's correlations between the IDAS-II scale scores and the total BDI-II, BAI, HCL-32, PCL-C and OCI-R scores for the student ($n = 378$) and community sample ($n = 620$)

	BDI-II		BAI		HCL-32		PCL-C		OCI-R	
	S	C	S	C	S	C	S	C	S	C
General depression	.85**	.79**	.71**	.71**	.06	.13**	.49**	.58**	.35**	.47**
Dysphoria	.82**	.78**	.70**	.70**	.07	.13**	.47**	.57**	.38**	.47**
Lassitude	.56**	.58**	.43**	.55**	.17**	.25**	.30**	.52**	.32**	.47**
Insomnia	.53**	.61**	.48**	.58**	.11**	.08	.42**	.47**	.28**	.40**
Suicidality	.60**	.52**	.51**	.42**	-.01	.02	.27**	.34**	.22**	.32**
Appetite loss	.41**	.44**	.42**	.45**	.01	.10*	.28**	.34**	.15**	.29**
Appetite gain	.29**	.36**	.25**	.31**	.20**	.20**	.16**	.38**	.30**	.38**
Well-Being	-.63**	-.42**	-.35**	-.25**	.11**	.10*	-.28**	-.19**	-.10*	-.06*
Ill Temper	.55**	.59**	.50**	.57**	.05	.15**	.33**	.46**	.32**	.49**
Mania	.44**	.50**	.47**	.58**	.22**	.19**	.35**	.45**	.44**	.50**
Euphoria	-.04	.13**	.04	.25**	.26**	.26**	.05	.16**	.18**	.33**
Panic	.64**	.66**	.78**	.79**	.03	.13**	.38**	.51**	.36**	.45**
Social anxiety	.58**	.57**	.55**	.55**	.01	.08	.35**	.47**	.35**	.49**
Claustrophobia	.34**	.47**	.50**	.60**	.05	.06	.28**	.36**	.40**	.48**
Traumatic intrusions	.57**	.59**	.49**	.60**	.00	.09*	.42**	.57**	.20**	.43**
Traumatic avoidance	.30**	.43**	.31**	.42**	.12**	.16**	.41**	.48**	.23**	.43**
Checking	.29**	.39**	.33**	.48**	.07	.07	.26**	.33**	.58**	.59**
Ordering	.25**	.25**	.30**	.30**	.14**	.13**	.23**	.21**	.57**	.51**
Cleaning	.25**	.30**	.24**	.42**	.09*	.08*	.27**	.28**	.57**	.62**

Note: S: Students; C: Community; IDAS-II: Inventory of Depression and Anxiety Symptoms-II; BDI-II: Beck Depression Inventory-II; BAI: Beck Anxiety Inventory; HCL-32: The Hypomania Checklist-32; PCL-C: Post-traumatic Stress Disorder Checklist-Civilian Version; OCI-R: The Obsessive-Compulsive Inventory-Revised.

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

Figure 1. Factorial loading of the model obtained for the student sample (n = 378).

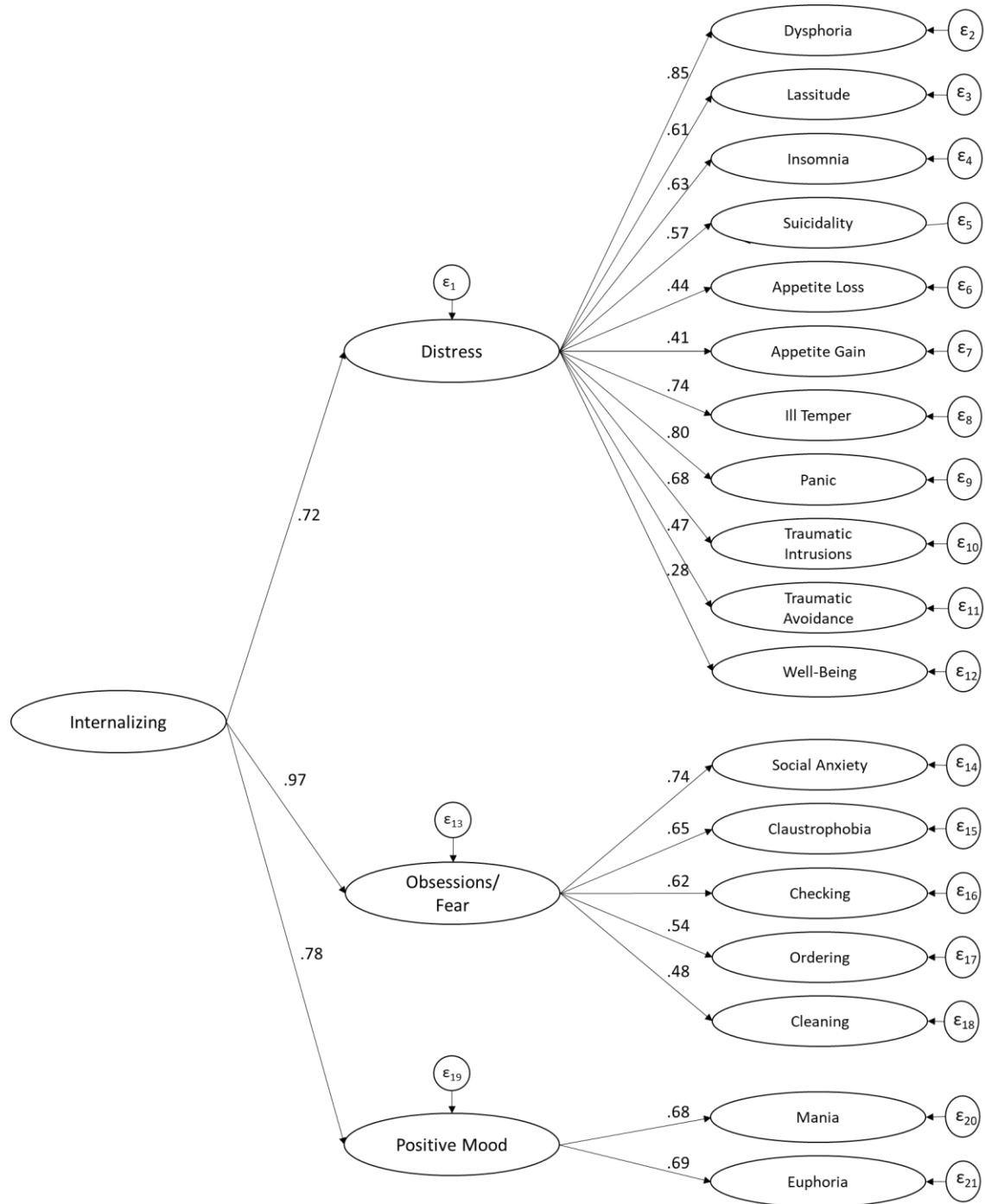


Figure 2. Factorial loading of the model obtained for the community sample ($n = 620$).

