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Abstract

Objective:

To examine the psychometric properties of the Spanish version of the Valuing Questionnaire (VQ) in Colombian clinical and nonclinical samples.

Method:

The VQ was administered to a total sample of 1820 participants, which included undergraduates (*N* = 762), general population (*N* = 724), and a clinical sample (*N* = 334). The questionnaire packages included measures of experiential avoidance, cognitive fusion, mindfulness, life satisfaction, and psychological difficulties.

Results:

Across the different samples, internal consistency was good (global Cronbach's alpha of .83 for Progress and .82 for Obstruction). Measurement invariance was found across samples and gender, and the two-factor model obtained a good fit to the data. The latent means of Progress and Obstruction of the clinical sample were lower and higher, respectively, than the latent means of the nonclinical samples. Correlations with other variables were in the expected direction.

Conclusion:

The Spanish version of the VQ showed good psychometric properties.

Key words: Valuing Questionnaire; Acceptance and commitment therapy; Values; Psychological flexibility.

Psychometric properties of the Spanish version of the Valuing Questionnaire in Colombian clinical and nonclinical samples

During the last decade, there has been an increasing interest in the empirical analysis of values in clinical and health psychology (e.g., Serowik et al., 2018). Valued living has shown to have a wide range of psychological benefits. For example, the meta-analysis conducted by Epton et al. (2015) found that affirming one's personal values increases acceptance of potentially threatening health information, promotes intentions to change, and fosters adaptive behavior. Valued living has also been associated with life satisfaction, increased vitality, and psychological wellbeing (e.g., Gloster et al., 2017; Serowik et al., 2018; Wilson et al., 2010). Conversely, values inaction has been associated with adverse outcomes such as mental health difficulties and low quality of life (McCracken & Yang, 2006; Michelson et al., 2011; Smout et al., 2014).

The advance in the abovementioned research has been actively facilitated by the design of self-report measures of values. Serowik et al. (2018) found that several conceptualizations of values have guided the development of self-reports. These approaches share the main characteristics and tend to converge with the acceptance and commitment therapy conceptualization of values.

Acceptance and commitment therapy (ACT; Hayes et al., 1999) is a psychological intervention aiming to promote psychological flexibility, which is suggested to be the primary psychological factor involved in mental health (Hayes et al., 2006). In middle-level terms, psychological flexibility is defined as "the ability to contact the present moment more fully as a conscious human being, and to change or persist in behavior when doing so serves valued ends" (Hayes et al., 2006, p. 7). Six interrelated processes are thought to promote psychological flexibility: cognitive defusion, contact with the present moment,

acceptance, self-as-context, values, and committed action. Among them, values are the compass of the individual displaying a pattern of behavior characterized by psychological flexibility. In other words, the first four processes mentioned above (i.e., cognitive defusion, contact with the present moment, acceptance, self-as-context) are not ends in themselves. However, they are in the service of promoting values-based actions.

According to the review by Serowik et al. (2018), the most influential ACT-based definition of values was proposed by Wilson (2009): "values are freely chosen, verbally constructed consequences for ongoing dynamic, evolving patterns of activity, which establish predominant reinforcers for that activity that are intrinsic in engagement in the valued behavioral pattern itself" (p. 64). This conceptualization contains some key components. First, values are experienced by the individual as their own rather than an imposition by another person or group. Second, values are highly abstract positive reinforcers that are at the top of a hierarchy containing less abstract reinforcers, such as goals or more tangible reinforcers (Barnes-Holmes et al., 2004; Gil-Luciano et al., 2019; Luciano et al., 2012). In this regard, values are verbal rules that specify highly distant and abstract consequences that cannot be directly achieved. However, these rules establish intrinsic reinforcement for behavior directed to the accomplishment of goals that symbolically draw the individual closer to his or her values. Third, the specific behaviors that would serve an individual's values frequently vary over time and across situations. Indeed, values themselves often change, at least to some extent, as the individual moves towards them.

As ACT developed and expanded (e.g., Hacker et al., 2016; Twohig & Levin, 2017), multiple self-report measures of the interrelated processes have been designed, including values (Newsome et al., 2019). Several systematic reviews have been published

regarding the measurement of values (Barrett et al., 2019; Reilly et al., 2019; Serowik et al., 2018). Specifically, Barrett et al. (2019) found 17 instruments that were subjected to published validation studies.

Values instruments can be grouped according to their scope and procedure. Regarding the scope, some instruments evaluate valued living in general (e.g., Valuing Questionnaire, VQ, Smout et al., 2014; Valued Living Questionnaire, VLQ, Wilson et al., 2010; Values Bull's-Eye Survey, BVES; Lundgren et al., 2012), whereas others focus on specific problems (e.g., Chronic Pain Values Inventory, CPVI, McCracken & Yang, 2006; Valued Living Questionnaire Adapted to Caregiving, VLQ-AC, Romero-Moreno et al., 2017). Concerning the procedure, some instruments divide life into broad domains, and participants are requested to rate them, as well as the consistency of their behavior according to their values. Examples of these instruments are the Valued Living Questionnaire (VLQ; Wilson et al., 2010), the Values Bull's-Eye Survey (BVES; Lundgren et al., 2012), and the Personal Values Questionnaire (PVQ; Ciarrochi et al., 2010). Other instruments do not specify life domains but measure overall valued living. Examples of these instruments are the VQ, the Engaged Living Scale (ELS; Trompetter et al., 2013), and the values subscale of the Multidimensional Psychological Flexibility Inventory (MPFI; Rolffs et al., 2018).

The aforementioned types of values instruments have some advantages and disadvantages. For instance, values instruments that explore life domains provide information that can help the ACT therapist when working in values clarification. However, this type of instrument is usually long and might be difficult to score and interpret in clinical trials or survey research. Contrarily, instruments measuring general valued living do not provide such fine-grained information but are usually short, and their scoring and

interpretation are straight forward. An additional advantage of this type of instrument is that a crucial role of valued living is to choose the most pertinent life domain to attend to in a given moment. For instance, an individual might spend weeks acting only towards one value because it is the most valued way of behaving during that period (e.g., studying when exams are near). Ultimately, the preference for one type of values instrument will probably depend on the context in which they are going to be administered.

The available values instruments differ in their psychometric quality. The most recent systematic reviews on this topic indicate that the VQ is probably the most psychometrically robust instrument (i.e., Barrett et al., 2019; Reilly et al., 2019). Smout et al. (2014) designed the VQ as a short self-report measure of overall valued living during the last week. The VQ items were rated by principal authors of ACT as representative of the values construct in this therapy. The VQ comprises ten items that can be completed without prior exposure to ACT. Barrett et al. (2019) found that there is high-quality evidence of the internal consistency and structural validity according to the COSMIN manual for systematic reviews of Patient-Reported Outcome Measures (PROMs; Mokkink et al., 2018). The VQ obtained good internal consistencies in clinical and nonclinical samples and a robust two-factor structure: Progress and Obstruction. The former was defined as the "enactment of values, including clear awareness of what is personally meaningful, and perseverance" (Smout et al., 2014, p. 166). In contrast, Obstruction was defined as "disruption of valued living due to avoidance of unwanted experiences and distraction from values (Smout et al., 2014, p. 166)." Additionally, Smout et al. (2014) showed that the VQ was measurement invariant across clinical and nonclinical samples.

The VQ subscales correlate in theoretically coherent ways with other instruments. Specifically, scores on Progress strongly correlate with measures of life satisfaction,

positive affect, and purpose in life. In contrast, scores on Obstruction strongly correlate with depressive symptoms, negative affect, and experiential avoidance. The brevity of the VQ facilitates its administration weekly to track clients' progress. Indeed, the VQ is being increasingly used in clinical trials (e.g., Levin et al., 2020; O'Connor et al., 2020; Ong et al., 2019). In this regard, Reilly et al. (2019) found that the VQ was the values instrument that showed the highest treatment sensitivity.

A limitation of the VQ is that its psychometric properties have been scarcely analyzed in languages other than English. To our best knowledge, only two psychometric studies have been published that analyzed the validity of the VQ in the context of chronic pain in Portuguese and Swedish (Carvalho et al., 2018; Rikardsson et al., 2019). Additionally, no values measure has been developed or tested in Spanish. This hinders the conduction of studies assessing values and valued living in Spanish-speaking countries. Consequently, the current study aimed to explore the psychometric properties of a Spanish version of the VQ. In so doing, we recruited three Colombian samples with a total of 1820 participants.

Method

Participants

Sample 1. This sample consisted of 762 undergraduates (62% females), with an age range from 18 to 63 years (M = 21.16, SD = 3.76). Participants were recruited in seven universities in Bogotá. Most of them were Psychology students (46%). Other studies included Engineering, Medicine, Business, Law, Theology, Communication, and Philosophy. Of the total sample, 4.3% were currently receiving psychological or psychiatric treatment, while 26% of participants had received treatment in the past. Lastly, only 2.9% of the sample was on some kind of psychotropic treatment.

Sample 2. This sample comprised a total of 724 individuals (74.4% females, age range = 18 to 88 years, *M* = 26.11, *SD* = 8.93). The participants' educational level was distributed as follows: 17.8% completed compulsory education (i.e., primary studies), high school, or vocational training (i.e., mid-level study graduates), 63.8% were undergraduate students or college graduates, and 18.4% were completing or had a postgraduate degree. They all had Colombian nationality and answered an online survey that was shared through social media. 8.4% of the participants reported being on psychological or psychiatric treatment, and 45% had received treatment in the past. Only 5.4% of the sample was on psychotropic treatment.

Sample 3. This sample comprised a total of 334 individuals (66.8% females, age range = 18 to 67 years, *M* = 28.59, *SD* = 11.09). Participants were being evaluated in the clinical psychology center of a Colombian university that provides inexpensive psychological intervention to the general population. All participants were suffering from clinical levels of mental health difficulties. Only 6 % of the sample was on some kind of psychotropic treatment.

Instruments

The Valuing Questionnaire (VQ) is a self-report questionnaire consisting of 10 items that, through a 7-point Likert-type scale (6 = *completely true*; 0 = *not at all true*), measures the extent of personal values enactment during the last week (Smout et al., 2014). The VQ assesses valued living in everyday language without referring to specific life domains. The VQ has two, 5-item factors that have shown good internal consistency both in clinical and nonclinical samples: Progress and Obstruction.

The Acceptance and Action Questionnaire – II (AAQ-II) is a questionnaire consisting of 7 items that, through a 7-point Likert-type scale (7= *always true*; 1 = *never*

true), measures experiential avoidance (Bond et al., 2011). Experiential avoidance is one of the six middle-level terms that are part of psychological inflexibility. It can be defined as deliberate efforts to avoid or escape from discomfiting private experiences. The Spanish version of the AAQ-II was adapted by Ruiz et al., (2013). In a Colombian sample, the AAQ-II showed excellent internal consistency (alpha of .90) and a one-factor structure (Ruiz, Suárez-Falcón, Cárdenas-Sierra, et al., 2016). Strong positive correlations were expected between Obstruction and AAQ-II, whereas medium negative correlations were expected with Progress.

The Cognitive Fusion Questionnaire (CFQ) is a 7-item questionnaire that, through a 7-point Likert-type scale (7 = *always true*; 1 = *never true*), measures cognitive fusion (Gillanders et al., 2014). Cognitive fusion is another ACT middle-level term and can be defined as the tendency to act according to the content of ongoing private experiences without realizing that they are only transitory events. The Spanish version of the CFQ was adapted by Ruiz, Suárez-Falcón, et al. (2017). In a Colombian sample, the CFQ showed a one-factor structure and excellent internal consistency (alpha of .92). As with the AAQ-II, strong positive correlations were expected between CFQ scores and Obstruction, whereas medium negative correlations were expected with Progress.

The Mindful Attention Awareness Scale (MAAS) is a scale that, through 15 items and a 6-point Likert-type scale (6 = *almost never*; 1 = *almost always*), measures the extent to which individuals are aware of the present moment experience (MAAS; Brown & Ryan, 2003). The Spanish version of the MAAS was adapted by Soler et al. (2012). In a Colombian Sample, the MAAS has shown a one-factor structure and excellent internal consistency (alpha of .92) (Ruiz, Suárez-Falcón, & Riaño-Hernández, 2016). Medium correlations were expected between the MAAS and VQ.

The Satisfaction with Life Survey (SWLS) is a survey consisting of 5 items that, through a 7-point Likert-type scale (7 = *strongly agree*; 1 = *strongly disagree*), evaluates the subjective global perception of the individual's quality of life (Diener, Emmons, Larsen, & Griffin, 1985). The Spanish version of the SWLS was adapted by Atienza et al. (2000). In a Colombian sample, the SWLS has shown a one-factor structure and good internal consistency (alpha of .89) (Ruiz et al., 2019). It was expected to find strong positive correlations between the SWLS and VQ-Progress, and medium negative correlations were expected with VQ-Obstruction.

The General Health Questionnaire – 12 (GHQ-12) is a widely used questionnaire that, through 12 items and a 4-point Likert-type scale, assesses psychological disorders (Goldberg & Williams, 1988). For this study, we opted to use the Likert scoring method, which consists of a score ranging from 0 to 3. The Spanish version of the GHQ-12 was adapted by Rocha et al. (2011). In Colombian samples, the GHQ-12 has shown a one-factor structure and excellent internal consistency (alpha of .90) (Ruiz, García-Beltrán, et al., 2017). It was expected to find medium to strong positive correlations between the GHQ-12 and the VQ.

The Depression, Anxiety, and Stress Scales – 21 (DASS-21) is a questionnaire that, through 21 items and a 4-point Likert-type scale (3 = *applied to me very much, or most of the time*; 0 = *did not apply to me at all*), evaluates three negative emotional states: depression, anxiety, and stress (Lovibond & Lovibond, 1995). The Spanish version of the DASS-21 was adapted by Daza et al. (2002). In a Colombian sample, the DASS-21 has shown a hierarchical factor structure with a second-order factor representing a general indicator of mental health difficulties and good internal consistency for all the subscales

(Ruiz, García-Martín, et al., 2017). Medium to strong correlations were expected between the DASS-21 subscales and the VQ.

Procedure

The institutional Ethics Committee of the University approved the procedure of this study. Firstly, we obtained the approval for translating the VQ from the corresponding author of the article in which the instrument was first presented. Secondly, we translated the VQ into Spanish according to the guidelines of the International Test Commission for adapting instruments across cultures (Muñiz et al., 2013). Specifically, an iterative procedure was implemented with two independent forward translations, conducted by bilingual individuals, that were revised by a committee consisting of the two translators and two experts in ACT. As suggested by Muñiz et al., we then conducted a small pilot test to explore the item comprehension with five Colombian people. They did not show difficulties in understanding the items. The items' translation is presented in Table 1.

The VQ was then administered within a questionnaire package to the samples previously described. Although the sample size for conducting confirmatory factor analyses depends on several characteristics of the model, we followed the general guideline provided by Cudeck et al. (2001) of recruiting at least 200 participants for each sample. Due to the characteristics of the clinical psychology center in which Sample 3 was recruited, we needed one year to obtain at least this number of participants. The recruitment of Samples 1 and 2 was extended for the same time with the idea of obtaining as many participants as possible.

Individuals in Sample 1 answered the questionnaire package at the beginning of a regular class. Individuals in Sample 2 answered an anonymous internet survey distributed through the institutional and researchers' social media. The researchers asked their contacts

to share the publication of the survey to reach more people. The publication of the research was not posted in specific groups (e.g., students' or mental health groups). Finally, individuals in Sample 3 were recruited among the adult patients who reported that the reason for consultation was the presence of depression and/or anxiety symptoms. These participants were invited to respond to the questionnaire package during a clinical evaluation interview at the start of the intervention. In all cases, participants provided written consent before presenting the questionnaire package.

Participants in Sample 1 responded to all the self-reports listed above (i.e., VQ, AAQ-II, CFQ, MAAS, SWLS, GHQ-12, and DASS-21). To avoid participants' burden, individuals in Sample 2 responded to all self-reports except the MAAS and GHQ-12. Also, due to time constraints in the clinical assessment, participants in Sample 3 did not respond to the MAAS and SWLS. In order to characterize the samples, the following demographic information was included in all questionnaire packages: age, education level, and gender. We also asked participants about past and current experiences of psychological/psychiatric treatment to establish the difference between the nonclinical and clinical samples. Once the participants completed the study, the aims of the study were debriefed, and they were thanked for their participation. Participants received no compensation for their participation.

Data analysis

We examined the datasets searching for missing values before conducting the data analyses. Only four values of the VQ were missing (one for Items 1, 2, 3, and 7, respectively). The matching response pattern method of LISREL© was used to impute the data (version 8.71, Jöreskog & Sörbom, 1999). This imputation method substitutes the

missing values according to a case or cases that showed a similar response pattern across the ten items of the VQ.

Firstly, SPSS 25© was used to compute the corrected item-total correlations for each subscale. This was performed to find items that should be eliminated due to a low discrimination index (i.e., values lower than .20). Furthermore, Cronbach's alpha was used to analyze the internal consistency of VQ-Progress and VQ-Obstruction.

Secondly, we analyzed the dimensionality of the VQ through confirmatory factor analyses (CFAs) using LISREL© 8.71 with the overall sample. Due to the lack of multivariate normality in the data (multivariate Mardias' test of skewness and kurtosis = 2103.08; $p < .001$), we adopted the robust maximum likelihood (MLR) estimation method with the covariance matrix and the asymptotic variance-covariance matrix. Due to their highly similar content, previous CFAs of the VQ found a method effect in responses to Items 5 and 7 (Smout et al., 2014). Consequently, we compared the fit of a two-factor model where the error terms between these items were allowed to correlate versus a two-factor model with no error correlations. Additional to the Satorra-Bentler chi-square, five goodness-of-fit indexes were computed. The first one was the root mean square error of approximation (RMSEA). RMSEA values lower than 0.08 indicate an acceptable fit, while values below 0.05 a good fit (Hu & Bentler, 1999). The second and third indexes were the comparative fit index (CFI) and the non-normed fit index (NNFI). For both indexes, values higher than .90 indicate acceptable-fitting models and above .95 a good fit to the data. The fourth index was the standardized root mean square residual (SRMR). SRMR values below 0.08 indicate a good fit, and values below 0.05 a very good fit (Hu & Bentler, 1999). Lastly, the fifth index was the expected cross-validation index (ECVI), which was used to compare the two alternative models commented above (lower values suggest a better fit to

the model). After selecting the most appropriate factor model, we computed CFAs for each sample separately.

Thirdly, the measurement invariance across gender and samples was analyzed. Consequently, additional CFAs were computed to test for metric, scalar, and strict invariances, as suggested by the guidelines of both Jöreskog (2005) and Millsap and Yun-Tein (2004). Metric invariance was met if the factor loadings were invariant across samples and gender, scalar invariance was obtained if the item intercepts were equivalent, and strict invariance was met if the variance of error of the items was also equivalent. The multiple group baseline model, the metric invariance model, and the scalar invariance model were compared to analyze the relative fit of these progressively restraining models. The multiple-group baseline model permits the unstandardized factor loadings to be different across groups. The metric invariance model was nested within the former model and assumed equality of factor loadings across groups. Next, the scalar invariance model was nested within the metric invariance one and was analyzed by imposing the item intercepts and the factor loadings to be equal across groups. Lastly, the strict invariance model was nested within the scalar invariance one and also assumed the variance of errors (i.e., indicator residuals) to be equal across groups. The RMSEA, CFI, and NNFI indexes of the previous models were compared. The more restrictive model was chosen if the criteria suggested by Cheung and Rensvold (2002) and Chen (2007) were met: (a) the difference in RMSEA (ΔRMSEA) was below .01 and (b) the differences in CFI (ΔCFI) and NNFI (ΔNNFI) were equivalent to or higher than $-.01$.

Fourthly, if we established at least scalar invariance across gender and clinical and nonclinical samples, we compared the latent mean differences across these subgroups. In so doing, we set the mean of one subgroup at zero and freely estimated the other subgroup

mean. The subgroups would have a different latent mean if the estimated mean of the latter subgroup were significantly different from zero (Wang & Wang, 2012).

Lastly, convergent construct validity was calculated using Pearson correlations between the VQ subscales and other scales. The guidelines provided by Lenhard and Lenhard (2016) were used to interpret the correlations: *r* between .10 and .20, small correlation; *r* between .21 and .36, medium correlation; and *r* > .37, strong correlation.

Results

Psychometric quality of the items

Table 1 displays the corrected item-total correlations of the VQ. For the Progress subscale, they ranged in Sample 1 from .44 to .68, in Sample 2 from .48 to .75, and in Sample 3 from .57 to .71. Regarding the Obstruction subscale, the range of corrected item-total correlations for Sample 1 was from .53 to .59, in Sample 2 from .52 to .70, and in Sample 3 from .52 to .71. Overall, the results suggest that all items of the VQ show at least an adequate level of discrimination index.

INSERT TABLE 1 ABOUT HERE

Table 2 indicates that Cronbach's alphas of the Progress subscale obtained scores ranging from .81 for Sample 1 to .85 in Samples 2 and 3, with an overall alpha of .83. The alphas for the Obstruction subscale obtained scores ranging from .78 for Sample 1 to .84 in Sample 2, with an overall alpha of .82.

INSERT TABLE 2 ABOUT HERE

Confirmatory factor analysis

Table 3 presents the results of the CFAs conducted on the overall sample to analyze the fit of the two-factor models. Scores on the goodness-of-fit indexes for the two-factor model were acceptable for the RMSEA (RMSEA = 0.061, 90% CI [0.054, 0.068]), and

good for the SRMR (0.051), CFI (0.98) as well as the NNFI (0.97). Goodness-of-fit indexes were not improved by allowing error terms in Items 5 and 7 to correlate. Indeed, the ECVI values were the same, and modification indexes did not recommend estimating the parameters of the correlation between error terms for Items 5 and 7. In conclusion, the two-factor model was chosen due to its greater parsimony. Figure 1 depicts the results of the completely standardized solution of the two-factor model.

INSERT TABLE 3 ABOUT HERE

INSERT FIGURE 1 ABOUT HERE

The two-factor model also showed good fit for each sample. Specifically, the RMSEA values were acceptable (Sample 1: RMSEA = 0.058, 90% CI [0.047, 0.069]; Sample 2: RMSEA = 0.077, 90% CI [0.066, 0.088]; Sample 3: RMSEA = 0.063, 90% CI [0.045, 0.081]), whereas the values of CFI (0.97, 0.98, and 0.98), NNFI (0.97 for all samples), and SRMR (0.056, 0.059, and 0.055) were good.

Measurement invariance

Table 4 presents the results of the analysis of measurement invariance. The measurement invariance of the VQ was supported at all levels (i.e., metric, scalar, and strict) across gender and clinical and nonclinical samples since changes in RMSEA, CFI, and NNFI were below 0.01. The goodness-of-fit of the two-factor model found in the subsample of males and females were good (males: RMSEA = 0.055, 90% CI [0.042, 0.069], CFI = 0.98, NNFI = 0.98, SRMR = 0.057; females: RMSEA = 0.062, 90% CI [0.053, 0.070], CFI = 0.98, NNFI = 0.97, SRMR = 0.051). The fit of the two-factor model for the nonclinical samples (i.e., Samples 1 and 2 merged) was also good (RMSEA = 0.062, 90% CI [0.055, 0.070], CFI = 0.98, NNFI = 0.97, SRMR = 0.053).

INSERT TABLE 4 ABOUT HERE

Latent means differences

Given that the VQ showed measurement invariance across gender and clinical and nonclinical samples, we compared the latent mean differences across these subgroups. Regarding gender, we selected males as the reference group. The results showed that females scored higher in Progress than males, but the difference was not statistically significant (ΔM = 0.10, SE = 0.05, p = .072). With respect to Obstruction, there were no statistically significant differences across the subgroups neither (ΔM = -0.02, SE = 0.08, p = .820).

Regarding the clinical status, we selected the nonclinical subgroup as the reference one. The results showed that the clinical subgroup scored statistically significantly lower in Progress (ΔM = -0.39, SE = 0.06, $p < .001$) and higher in Obstruction (ΔM = 0.85, SE = 0.10, $p < .001$) than the nonclinical subgroup.

Convergent construct validity

The VQ subscales showed correlations in the expected directions and size with the other assessed constructs (see Table 5). Progress showed medium to strong negative correlations with the subscales of the DASS-21 (depression, anxiety, and stress symptoms) as well as psychological distress (GHQ-12). Conversely, Progress showed strong positive correlations with mindfulness (MAAS) and life satisfaction (SWLS). Regarding the correlations with the ACT processes, Progress showed medium to strong negative correlations with cognitive fusion (CFQ) and experiential avoidance (AAQ-II).

As expected, the opposite pattern of correlations was found for Obstruction. It showed strong positive correlations with depression, anxiety, psychological distress, and stress. Obstruction showed medium to strong positive correlations with mindfulness and

life satisfaction. Lastly, Obstruction showed strong positive correlations with cognitive fusion and experiential avoidance.

INSERT TABLE 5 ABOUT HERE

Discussion

The VQ has been one of the most used and psychometrically robust instruments to measure valued living according to the ACT model (e.g., Barrett et al., 2019; Reilly et al., 2019). However, to our knowledge, the VQ has not been translated into Spanish. Accordingly, this study translated the VQ into Spanish and analyzed its psychometric properties and factor structure in three samples with a total of 1820 participants.

The results of the current study showed that the Spanish version of the VQ demonstrated good psychometric properties in Colombian samples. Specifically, the internal consistency of Progress and Obstruction was adequate across samples, and all items showed appropriate discriminating power. The VQ showed construct validity to the extent that the confirmatory factor analysis demonstrated that the two-factor solution showed a good fit to the data. The evidence of measurement invariance is also relevant because it justifies comparing scores across gender and clinical and nonclinical samples (Greiff & Scherer, 2018).

The evidence of measurement invariance across samples permitted analyzing the discriminant validity of the VQ. As expected, the clinical sample obtained a higher latent mean on Obstruction and a lower latent mean on Progress than the nonclinical samples. The VQ also demonstrated convergent construct validity due to the correlations obtained with other related instruments. Specifically, Progress showed positive correlations with mindfulness and life satisfaction, and it was negatively correlated with mental health

difficulties, experiential avoidance, and cognitive fusion. As expected, the opposite pattern of correlations was found between Obstruction and the constructs mentioned above.

Interestingly, the correlations in Samples 2 (i.e., general population) were stronger than in the other samples. This might indicate that valued living is more associated with other ACT constructs and clinical and health outcomes in the general population than specific populations (e.g., undergraduates and clinical participants). However, these results should be taken with precaution because the stronger correlations found in this sample might be due to the greater heterogeneity and variability in scores (Glass & Hopkins, 1996).

According to the systematic review by Reilly et al. (2019), the VQ was the general measure of valued living that showed higher treatment sensitivity (i.e., 60% of the studies reported improvements following ACT interventions). Although we did not test treatment sensitivity in this study, it is worth mentioning that this Spanish version of the VQ has shown to be sensitive to brief ACT interventions in multiple studies conducted in Colombia (e.g., Dereix-Calonge et al., 2019; Ruiz et al., 2018, 2020; Ruiz, Luciano, et al., 2020). Thus, there is preliminary empirical evidence to indicate that this Spanish version of the VQ is sensitive to treatment effects.

It is important to mention some limitations of the current study. First, the functioning of the VQ was tested in a sample of clinical participants with emotional disorders, which limits the generalizability of the results to participants suffering from other types of psychological disorders. Further studies should analyze the psychometric properties of the VQ in individuals suffering from other disorders (e.g., psychosis, health conditions, etc.). Second, we did not obtain formal diagnoses of the clinical participants. Third, we only analyzed the correlations of the VQ with other self-reports. This might have inflated the correlations obtained. Fourthly, the mean age of participants in all samples was

relatively low. This was expected for Sample 1 as it was composed of undergraduates. The low mean age in Sample 2 might be related to the higher use of the Internet and social media of younger people in Colombia, whereas for Sample 3 might be due to the characteristics of the university clinical psychology center in which participants were recruited. Further studies should analyze the psychometric properties of the VQ in samples of older participants. Lastly, most of the participants in this study were living in Bogotá (Colombia) and, thus, the results obtained might not be generalizable to the entire country or other Spanish-speaking populations. Subsequent studies should analyze the psychometric properties of the VQ in other Colombian regions and Spanish-speaking countries.

Conclusion

This study has shown that the Spanish version of the VQ obtained a two-factor structure that is invariant across gender and clinical and nonclinical samples. The VQ also showed good psychometric properties. Accordingly, the VQ appears to be an adequate measure of valued living in Colombian clinical and nonclinical samples, where no validated measures of values existed. The good functioning of the VQ in nonclinical samples would likely make this useful for the purposes of survey studies, while its soundness in clinical samples highlights its utility for clinical research analyzing the efficacy of ACT and other therapeutic models. Further studies should analyze the psychometric properties of the VQ in samples of older participants, in more diverse clinical samples, and other Spanish-speaking countries.

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Table 1

Item Description and Corrected Item-Total Correlations in each Sample

Item number and description	Corrected item-total correlations		
	Sample 1	Sample 2	Sample 3
1. Pasé un montón de tiempo pensando sobre el pasado o el futuro en vez de dedicarme a actividades que eran importantes para mí [I spent a lot of time thinking about the past or future, rather than being engaged in activities that mattered to me]. OBSTRUCTION	.54	.69	.68
2. Estuve básicamente en "piloto automático" la mayor parte del tiempo [I was basically on "auto-pilot" most of the time]. OBSTRUCTION	.59	.70	.71
3. Trabajé para conseguir mis metas incluso cuando no me sentía motivado [I worked toward my goals even if I didn't feel motivated to]. PROGRESS	.44	.48	.57
4. Estuve orgulloso de cómo viví mi vida [I was proud about how I lived my life]. PROGRESS	.64	.71	.69
5. Hice progresos en las áreas de mi vida que más me importan [I made progress in the areas of my life I care most about]. PROGRESS	.68	.75	.71
6. Los pensamientos, sentimientos y recuerdos difíciles se interpusieron en el camino de lo que quería hacer. [Difficult thoughts, feelings or memories got in the way of what I really wanted to do]. OBSTRUCTION	.53	.65	.57
7. Continué mejorando en ser el tipo de persona que deseo ser [I continued to get better at being the kind of person I want to be]. PROGRESS	.67	.73	-65
8. Cuando las cosas no fueron según lo planeado, me di por vencido fácilmente [When things didn't go according to plan, I gave up easily]. OBSTRUCTION	.53	.52	.52
9. Me sentí como si tuviera un propósito en la vida [I felt like I had a purpose in life]. PROGRESS	.61	.64	.67
10. Parecía como si estuviera comportándome de manera mecánica en vez de centrarme en lo que era importante para mí [It seemed like I was just "going through the motions" rather than focusing on what was important to me]. OBSTRUCTION	.59	.70	.68

Table 2

Cronbach's Alphas and Descriptive Data across Samples

	Sample 1: Undergraduates (*N* = 762)	Sample 2: Online (*N* = 724)	Sample 3: Clinical (*N* = 334)	Overall Sample (*N* =1820)
		PROGRESS		
Alpha	.81	.85	.85	.83
95% CI	[.79, .83]	[.83, .86]	[.82. .87]	[.82, .85]
M Total	20.14	19.50	17.28	19.36
(*SD*)	(7.24)	(6.43)	(6.98)	(6.95)
M Men	19.86	18.67	16.10	18.78
(*SD*)	(7.69)	(6.56)	(7.59)	(7.47)
M Women	20.30	19.78	17.87	19.63
(*SD*)	(6.94)	(6.37)	(6.61)	(6.69)
		OBSTRUCTION		
Alpha	.78	.84	.83	.82
95% CI	[.75, 80]	[.83, .86]	[.80, .86]	[.81, .83]
M Total	10.91	11.70	15.25	12.02
(*SD*)	(7.30)	(6.88)	(7.53)	(7.34)
M Men	10.52	12.60	15.23	12.05
(*SD*)	(7.18)	(6.62)	(8.21)	(7.44)
M Women	11.08	11.46	15.19	11.98
(*SD*)	(7.32)	(6.97)	(7.21)	(7.30)

Table 3

Goodness-of-Fit Indexes of the Two-Factor Model and the Two-Factor Model with Error Terms Allowed to Correlate for Items 5 and 7 in the Overall Sample (N = 1820)

Goodness-of-fit indicators	Two-factor model	Two-factor model with error terms allowed to correlate (items 5 and 7)
RMSEA [90% CI]	0.061 [0.054, 0.068]	0.062 [0.055, 0.069]
CFI	0.98	0.98
NNFI	0.97	0.97
ECVI [90% CI]	0.167 [0.141, 0.197]	0.167 [0.141, 0.198]
SRMR	0.051	0.051
S-Bχ^2 (*df*)	261.60(34)	260.01(33)

Note. CFI = comparative fit index; *df* = Degrees of freedom; NNFI = non-normed fit index; ECVI = expected cross-validation index; RMSEA = root mean square error of approximation; *S-B*χ^2 = Satorra-Bentler chi-square test; SRMR = standardized root mean square residual.

Table 4

Measurement Invariance across Samples and Gender

Model	RMSEA	ΔRMSEA	CFI	ΔCFI	NNFI	ΔNNFI
Measurement invariance across samples						
MG Baseline model	0.066		0.977		0.969	
Metric invariance	0.060	0.006	0.976	-0.001	0.971	0.002
Scalar invariance	0.060	0.000	0.973	-0.003	0.971	0.000
Strict invariance	0.057	0.003	0.973	0.000	0.974	0.003
Measurement invariance across gender						
MG Baseline model	0.060		0.980		0.973	
Metric invariance	0.057	0.003	0.979	-0.001	0.976	0.002
Scalar invariance	0.056	0.001	0.978	-0.001	0.976	0.000
Strict invariance	0.052	0.004	0.979	0.001	0.979	0.003

Table 5

Pearson Correlations between the VQ Scores and Other Relevant Self-Report Measures

Measure	S	*N*	*r* with Progress	*r* with Obstruction
AAQ-II (Experiential avoidance)	1	762	-.22*	.43*
	2	724	-.48*	.69*
	3	334	-.27*	.72*
	Ov	1820	-.36*	.62*
CFQ (Cognitive fusion)	1	762	-.19*	.48*
	2	724	-.46*	.71*
	3	334	-.26*	.72*
	Ov	1820	-.33*	.64*
DASS-21 – Depression	1	762	-.33*	.48*
	2	724	-.50*	.70*
	3	334	-.45*	.62*
	Ov	1820	-.44*	.61*
DASS-21 – Anxiety	1	762	-.21*	.38*
	2	724	-.35*	.58*
	3	334	-.20*	.53*
	Ov	1820	-.28*	-50*
DASS-21 – Stress	1	762	-.15*	.39*
	2	724	-.37*	.59*
	3	334	-.26*	.63*
	Ov	1820	-.27*	.53*
SWLS (Life satisfaction)	1	762	.49*	-.27*
	2	724	.64*	-.50*
	Ov	1486	.56*	-.38*
GHQ-12 (Mental health)	1	762	-.32*	.44*
	3	334	-.45*	.61*
	Ov	1096	-.41*	.54*
MAAS (Mindfulness)	1	762	.36*	-.29*

Note. AAQ-II: Acceptance and Action Questionnaire – II; DASS: Depression, Anxiety, and Stress Scales – 21; GHQ-12: General Health Questionnaire – 12; MAAS: Mindful Attention Awareness Scale; Ov = Overall sample; S = Sample; SWLS: Satisfaction with Life Scale. *$p < .01$

Figure 1. Completely standardized solution for the two-factor model of the Valuing Questionnaire.