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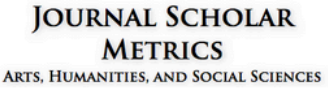

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Psychometric properties of the Inventory of Interpersonal Problems-64 in Colombia

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Abstract

The present study aimed to analyze the *Inventory of Interpersonal Problems-64* (IIP-64) reliability and validity in an incidental online community sample of 701 participants living in Colombia. The internal consistency of the scales was estimated by two methods, Cronbach's alpha and McDonald's Omega, with acceptable to good results. Evidence of construct validity was analyzed using principal component analysis (PCA) and its plotting in a Cartesian plane. The PCA and the graphical analysis results indicate that the instrument has two main dimensions that allow the derivation of the eight theoretical scales of the octagonal circumplex model of interpersonal behavior. The descriptive values of the scales and quartiles were also estimated for their reference to the Colombian population. It is concluded that, with some minor considerations, the instrument is valid and reliable in the Colombian population.

Key words: interpersonal problems, interpersonal behavior, reliability, validity, scale rating.

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Novelty and Significance

What is already known about the topic?

- The Inventory of interpersonal problems (IIP-64) is the main measure for difficulties in interpersonal functioning and has been translated into many languages with acceptable to good results.

What this paper adds?

- To our knowledge, this is the first study reporting psychometric properties for the IIP-64 in Colombia and Latin America.
- Using a large community sample, this study yielded acceptable to good psychometric properties for a Spanish version of the IIP-64.
- We found robust evidence sporting the circumplex structure and, therefore, the construct validity of the IIP-64 in Spanish.

Interpersonal problems have been associated with multiple psychiatric symptoms (Horowitz & Vitkus, 1986), generalized anxiety disorder (Millstein, Orsillo, Hayes-Skelton, & Roemer, 2015), depression (Huh, Kim, Yu, & Chae, 2014), eating disorders (McEvoy, Burgess, & Nathan, 2013), psychoactive substance use (Doumas, Blasey, & Mitchell, 2007), and are the hallmark of personality disorders (Pincus, 2018). The assessment of interpersonal problems is needed in clinical psychology and ideally should be available for all countries and languages.

In clinical practice, identifying and describing the style of problematic interpersonal behavior is helpful for the process of establishing therapeutic goals, formulation, and treatment planning. In the research field, valid and reliable instruments to assess interpersonal behavior are desirable for understanding personality styles and disorders.

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Such instruments are also crucial for assessing and investigating problems involving characterological elements, such as in dysthymia and chronic depression. Finally, the assessment and measurement of interpersonal problems is an excellent outcome measure for psychological treatments in general (Horowitz, Baer, Ureño, & Villaseñor, 1988).

The most widely used instrument to assess interpersonal problems is the Inventory of Interpersonal Problems (IIP). The initial version of the IIP (Horowitz *et alia*, 1988) consisted of 127 items that intended to identify a broad spectrum of problems grouped into six subscales labeled (a) difficulty being assertive, (b) difficulty being sociable, (c) difficulty being intimate, (d) difficulty being submissive, (e) too responsible, and (e) too controlling. The IIP was constructed in a symptomatic format, inspired by the Derogatis Symptom Checklist–90 (SCL-90; Derogatis, 1977) to identify clients' relational difficulties in psychological therapy and measure the impact of psychological interventions on these problems (Horowitz *et alia*, 1988).

The IIP-64 (Alden, Wiggins, & Pincus, 1990) is the most widely used instrument for measuring and investigating interpersonal difficulties. It was derived from the initial version of the IIP (IIP-127; Horowitz *et alia*, 1998), reducing it to sixty-four items grouped into eight scales, with eight items each. The IIP-64 is theoretically based on an octagonal circumplex model of interpersonal behavior (Leary, 1957; Wiggins *et alia*, 1988). On a Cartesian plane, octagonal circumplex scales are derived by rotating the principal axes counterclockwise every 45 degrees from the principal dimensions of Affiliation (love) and Power (status, dominance). The degree of similarity between the scales derived from interpersonal behavior is understood from their proximity in the circumplex space. The opposition between scales is inferred from polarity (Felipe Castaño & Ávila Espada, 2005).

Vittengl, Clark, and Jarrett (2003) examined the circumplex structure of the IIP-64 before and after a 20-session intensive cognitive therapy for depression with a sample of 118 outpatients. The authors hypothesized that the IIP-64 would be sensitive to changes reflected in decreased scores on the total scale after treatment, which is an indicator of interpersonal distress, but that the dimensions of Affiliation and Power would remain relatively stable after treatment. Principal component analysis (PCA) showed that the circumplex structure remained relatively stable from pretreatment to posttreatment. Scores on the Affiliation and Power dimensions showed no change, but there was a change in the total interpersonal distress score. Correlations of pretreatment and posttreatment scores yielded an r of .84 for Affiliation, r of .79 for Power, while interpersonal distress yielded an r of .55. Given that test-retest correlations are frequently used to evaluate the stability of a measure, the above coefficients indicate that, after treatment, the general factor of interpersonal distress is the one that changes the most with the intervention received and, therefore, is more sensitive to treatment than the Affiliation and Power dimensions.

In a replication of this previous research, but with a larger sample of participants with various diagnoses, the psychometric properties, sensitivity to change, and stability in the structure of the German version of the IIP-64 were analyzed in a Swiss sample of 393 participants (Holtforth *et alia*, 2006). Results yielded Cronbach's alpha coefficients (α) from direct scale scores ranging from .71 to .85 at pretreatment and from .73 to .88 at posttreatment. The PCA with orthogonal rotation and using the least-squares difference method yielded three factors that were named Distress, Affiliation, and Power. The same procedure was repeated using a principal axis factor analysis with Procrustes rotation to ensure full orthogonality.

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The general interpersonal distress factor was represented by loading positively on all subscales in a first factor with standardized coefficients between .60 and .66. Thus, the identification of a general interpersonal distress factor was replicated in the PCA of the direct subscale scores. In another parallel PCA, but this time using the individualized scores, they were able to identify the two orthogonal dimensions of Affiliation (love) and Power (status, dominance). Thus, evidence supports the existence of a general interpersonal distress factor and two orthogonal dimensions of Affiliation and Power in the IIP-64. In addition, the general distress factor was the most sensitive to treatment with a medium to large effect size (d= 0.69), followed by the Power dimensions with a small effect (d= 0.32). Affiliation showed a very small effect size (d= 0.09) and changed the least with therapy.

Salazar, Marti, Soriano, Beltran, and Adam (2010) conducted a psychometric study of a Spanish version of the IIP-64. This study showed an adequate overall internal consistency of the instrument with a Cronbach's alpha of .92. Regarding the specific scales, the internal consistency ranged from .71 for the Intrusive/Needy scale to .88 for the Socially Inhibited scale. However, with a sample size of 256 participants between outpatients and controls, the sample can be considered relatively small for an instrumental study. Furthermore, the exploratory factor analysis (EFA) showed mixed scales where some items were not placed in the scale to which they should theoretically belong. Therefore, inconclusive results were obtained regarding the structure and factorial validity of the instrument.

Considering the above and given some particular variations in language use between Spain and Colombia, in this study, we proceeded to translate the instrument from English to Spanish to adapt the test and analyze the evidence of validity and reliability of the IIP-64 in the Colombian population.

Method

Participants

A total of 729 participants were recruited through online advertisements and responded to the questionnaire package. Because they did not meet the inclusion criteria of being over 18 years of age and being Colombian (or residing in Colombia), 28 records were eliminated from the database for a final total of 701 participants: 387 women (55.2%). There were two missing data regarding sex (0.3%). The sample's age ranged from 18 to 76 years, with a mean of 34 years (SD= 13.67). The respondents' most frequent place of residence was Bogotá DC, with 388 participants (55.3%), and the remaining percentage corresponded to other cities in the country.

Measures

Inventory of Interpersonal Problems-64 (IIP-64; Alden *et alia*, 1990). The IIP-64 is a self-report questionnaire consisting of 64 items presented on a 5-point Likert-type scale (0= not at all; 4= extremely). This instrument evaluates the recent difficulties that the person has experienced in his or her relationships with others based on two main factors: Affiliation and Power. It has eight subscales distributed in an orthogonal circumplex model. In its English construction, the IIP-64 obtained α coefficients ranging from .72 to .85 (Alden *et alia*, 1990). The Spanish adaptation reported α coefficients ranging from .71 to .88 (Salazar *et alia*, 2010).

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General Health Questionnaire-12 (GHQ-12; Goldberg & Williams, 1988; Spanish version by Rocha *et alia*, 2011). The GHQ-12 assesses emotional symptoms common in psychiatric disorders. It contains twelve items, six items expressed positively, and six items expressed negatively. The overall score is an indicator of perceived psychological distress (i.e., the higher the score, the greater the psychological distress). The scale has a cut-off point of 12 and allows screening for the identification of mental and behavioral disorders. The Colombian validation yielded a coefficient α of .90 and a unidimensional structure (Ruiz *et alia*, 2017). This measure was expected to yield moderate to high correlations with general interpersonal distress.

Satisfaction with Life Scale (SWLS; Diener, 1984; Spanish version by Ruiz *et alia*, 2019). This scale consists of five items that are responded to on a 7-point Likert-type scale (1= strongly disagree; 7= strongly agree) and aims to measure the construct of life satisfaction. The latter is conceived as the global evaluation made by the person on the current quality of life, taking as a standard his or her desired ideal quality of life (Diener, 1984). The validation in Colombia was carried out by Ruiz *et alia* (2019) and yielded a coefficient α of .89 and a unidimensional structure. The correlations of life satisfaction were expected to be negative and moderate to high with the different scales of interpersonal problems and with total interpersonal distress.

Valuing Questionnaire (VQ; Smout, Davies, Burns, & Christie, 2014; Spanish version by Ruiz *et alia*, 2022). The VQ measures how consistent the person acted with her values during the last week. The respondents evaluate whether their behavior brought them closer to or further away from their values. The instrument consists of ten items in Likert format with seven response options (0= not at all true; 6= completely true). The authors found a two-factor structure reflecting the behavioral processes of Obstruction (α= .87) and Progress toward values (α= .87). The psychometric properties study in Colombia also showed a two-factor structure and alphas of .83 and .82 for the Progress and Obstruction subscales, respectively (Ruiz *et alia*, 2022). The Obstruction factor was expected to yield moderate to high correlations with interpersonal distress, while the Progress factor was expected to negatively correlate with interpersonal distress.

Procedure

The translation of the IIP-64 was carried out from its original English version (Alden *et alia*, 1990; Horowitz *et alia*, 2003) by three bilingual psychologists with experience in instrument adaptations. They followed the international guidelines for cross-cultural adaptation of psychological tests (Muñiz *et alia*, 2013). Specifically, three slightly different versions of the inventory were obtained in Spanish. Three meetings were held to discuss the differences and unify the translation of the instrument to achieve the best possible translation adjusted to the linguistic and semantic uses of Spanish in Colombia. The resulting unified version was the one used in the present research and was uploaded on the Internet to a form's application together with the other abovementioned psychological instruments. The online form and the corresponding link were shared and disseminated on social networks, mainly Facebook and WhatsApp.

Regarding sampling, strictly speaking, it can be stated that the sample collection strategy was non-probabilistic of the "accidental" type (Otzen & Manterola, 2017). However, its extensive dissemination on social platforms brings it closer to a snowball sampling that allows the diversity of characteristics represented in the sample to be broad. Regarding the sample size for conducting principal component analysis, the recommendation of having a sample of at least 300 participants was followed (Catena, Ramos, & Trujillo, 2003). This criterion was more than doubled in the final sample.

Data Analysis

Statistical analyses were performed using Jamovi 2.0 and JASP 0.16.1. We kept the different methods of analysis and the reporting of psychometric data as comparable as

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possible with the two foundational studies of the IIP-64: the construction of the circumplex scales (Alden *et alia*, 1990) and the corresponding U.S. national standardization of the IIP-64 (Horowitz *et alia*, 2000).

The internal consistency of the scales was analyzed using Cronbach's alpha (α) and McDonald's omega coefficient (ω) with the direct scores of the items. Values above .20 were selected to consider the item-total discrimination index as acceptable (Díaz & Leyva, 2013; Ebel & Frisbie, 1986).

The theoretical expectation of an octagonal circumplex model indicates that, in a counterclockwise direction, the following condition p1>p2>p3>p4 should be met (Monsen *et alia*, 2006), where p1 represents the correlation with the neighboring subscale of just one octant away, p2 represents the correlation with the subscale two octants away, p3 the correlation with the scale three octants away and p4 represents the opposite scale in the circumplex model (Felipe Castaño & Ávila Espada, 2005).

According to the analysis plan, the next step in the analysis of the instrument is to verify its octagonal circumplex structure. For this purpose, the authors of the IIP-64 (Alden *et alia*, 1990; Horowitz *et alia*, 2003) recommended using individualized scores in the analyses to consider each person's tendency to express greater or lesser interpersonal distress. Thus, the scores of each item are expressed in terms of deviations from the intra-subject mean. In this research, starting from the intra-subject mean and standard deviation concerning the 64 items, each item was expressed as enneatypes with a *M* of 5 and a *SD* of 2. The individualized scores for each subscale were obtained from the simple sum of the individualized items, divided by eight, which is the number of items of each octagonal scale. After this procedure, a Principal Component Analysis (PCA) was performed and plotted in a cartesian plane.

RESULTS

The analysis of the overall reliability of the IIP-64 yielded the same value for Cronbach's α and Mcdonald's ω coefficients (.931). Descriptive data for the subscales and the total scale of the IIP-64 are presented in Table 1.

Table 1. Descriptive data of the scales of the IIP-64.

	M	*Med*	*SD*	*Min.*	*Max.*	*25th*	*50th*	*75th*
Domineering/Controlling	7.62	7	4.50	0	28	4	7	10
Vindictive/Self-Centered	7.66	7	4.54	0	26	4	7	10
Cold/Distant	8.71	7	5.92	0	26	4	7	13
Socially Inhibited	9.48	9	5.63	0	31	5	9	13
Non-assertive	10.5	10	5.76	0	26	6	10	15
Overly Accommodating	10.1	10	4.87	0	26	7	10	13
Self-sacrificing	12	12	4.73	1	31	9	12	15
Intrusive/Needy	8.28	8	4.87	0	24	5	8	12
IIP-64 Total Score	74.4	73	29.7	11		52	73	94

Notes: *M*= Mean; *Med*= Median; *Min*.= Minimun; *Max*.= Maximun; *25th*= 25th percentile; *50th*= 50th percentile; *75th*= 75th percentile.

The internal consistency coefficients for each subscale are presented in Table 2. The subscales with lower coefficients were Vindictive/Self-Centered (α= .691, ω= .675), Self-Sacrificing (α= .677, ω= .686), and Intrusive-Needy (α= .696, ω= .694), whereas the

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Table 2. Internal Consistency of the IIP-64.

Subscale	Elements	Cronbach's α	McDonald's ω
Domineering/Controlling	8	.708	.721
Vindictive/Self-Centered	8	.691	.675
Cold/Distant	8	.815	.825
Socially Inhibited	8	.793	.791
Non-assertive	8	.785	.795
Overly Accommodating	8	.700	.701
Self-sacrificing	8	.677	.686
Intrusive/Needy	8	.696	.694
IIP-64 Full Scale	64	.931	.931

subscales with the highest coefficients were Nonassertive (α= .785, ω= .795), Socially Inhibited (α= .793, ω= .791), and Cold/Distant (α= .815, ω= .825). Next, we will list the items that showed poor item-total discrimination index.

The item-total discrimination index for item 44 was r= .01 (p= .797), which belongs to the Domineering/Controlling subscale. This value was below the minimum desired value of .20 and was not statistically significant, suggesting that the item does not discriminate appropriately. If we remove item 44 from the analysis, the α and ω coefficients rise to .766. The item-total discrimination index for item 13 (Nonassertive subscale) was low but statistically significant with an r= .164 (and p <.001). Eliminating item 13 yields a coefficient α of .814 and a coefficient ω of .817. Lastly, the item-total discrimination index for item 28 (Self-Sacrificing subscale) was low, but significant with an r= .186 (p= .001). When item 28 was removed from the analysis, the coefficient α of the subscale rose to .688, and a coefficient ω of .701 was obtained.

Based on the previous scale reliability results, the overall scale reliability was reanalyzed without the three items that showed low item-total discrimination indexes (items 13, 28, and 44). There was no increase in internal consistency (α= .933, ω= .932).

We computed the correlations coefficients between the subscales using the raw scores to verify the theoretical circular pattern of correlations that a circumplex model should display. This circular correlation pattern can be observed in the heat map presented below, which contains the Pearson's r coefficient correlations between the octant scales of the IIP-64 (see Figure 1). All the subscales fulfilled the condition p1>p2>p3>p4 showing a circular correlation pattern between the octant scales. For instance, the Domineering subscale results show correlations with the other octagonal scales following the aforementioned correlation pattern. In this case, p1 corresponds to the correlation with the adjacent subscale, which is Vindictive p1= .20; p2 corresponds to the correlation with the subscale Cold/Distant, which is two octants away, p2= -.13; p3 corresponds to the correlation with the subscale Socially Inhibited which is three octants away, p3= -.28; and, finally, p4 corresponds to the opposite subscale which is Nonassertive, p4= -.47. Recalling that in the case of negative values, the further to the left of 0 as the origin, the lower the values, then the condition .20>-.13>-.28>-.47 is fulfilled, evidencing a pattern of circular correlations for this scale.

The principal components analysis (PCA) based on eigenvalue equal to or greater than one, with varimax rotation and using the individualized scores of the eight subscales (with their eight items) yielded two factors: the first factor, which was labeled Affiliation, had an eigenvalue of 2.378 and explained 29.3% of the variance; and the

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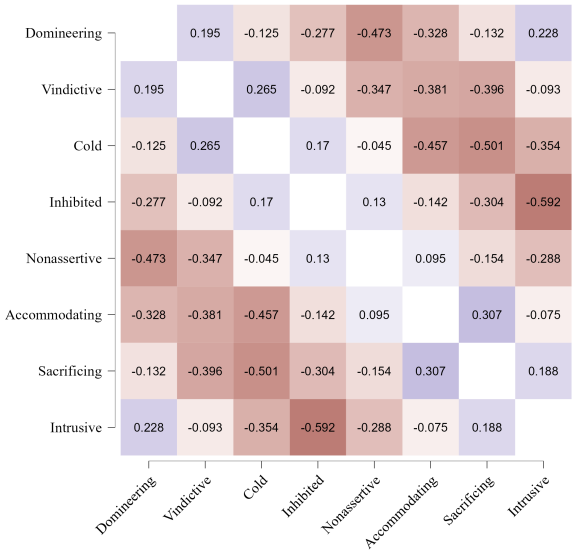

Figure 1. Heat map of Pearson's *r* correlations between the IIP-64 octant scales.

second factor, which was labeled Power, had an eigenvalue of 2.140 and explained 27.2% of the variance. These two factors explained 56.5% of the variance. The factors proved to be effectively orthogonal with a correlation $r = 0.00$. Plotting the interpersonal scales from these two factors on a two-dimensional plane effectively yielded the circumplex orthogonal space that theoretically supports the test (see Figure 2).

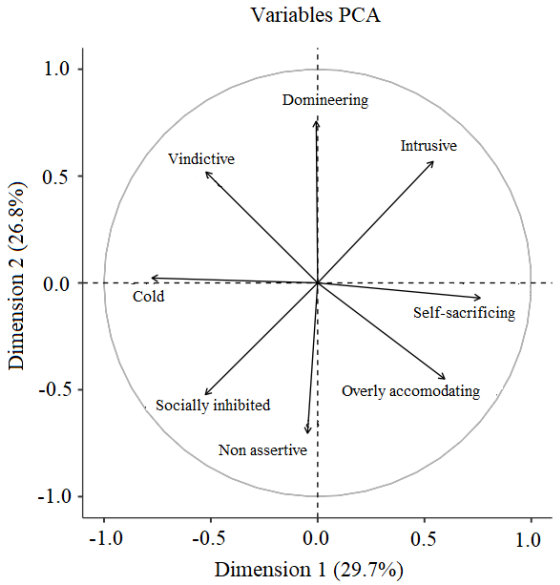

Figure 2. A plot of the octant scales in the circumplex space according to the Principal Component Analysis.

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Table 3 shows the factor loadings of the octant scales. The PCA solution was not rotated. Factor loadings below .10 have been suppressed, and blank values indicate that the scale in question is orthogonal to the axis with the value suppressed according to this criterion. The components and factor loadings are presented unrotated because, in a circumplex model, the correlations of the octagonal scales with the principal axes of the Cartesian plane are expected to correspond to values close to .7, .5, -.5, and -.7. (Wilson, Revelle, Stroud, & Durbin, 2013). The results obtained approximated such a pattern.

Table 3. Principal Component Analysis and Factor Loadings of the Octant Scales

	Component		
	Affiliation	Power	Uniqueness
Domineering		.756	.428
Vindictive	-.523	.519	.458
Cold	-.776		.398
Socially Inhibited	-.525	-.523	.451
Nonassertive		-.704	.503
Overly Accommodating	.595	-.449	.444
Self-Sacrificing	.761		.416
Intrusive	.540	.568	.385

Notes: No rotation was conducted. Values less than .10 were suppressed.

The same PCA was performed again, but this time without the three items that affected the reliability of the Domineering/Controlling, Nonassertive, and Intrusive/Needy subscales. However, it was observed that the circumplex structure of the test was altered, distorting the distribution, angles, and vectors of the circumplex scales. Even when only item 44, which seems to be the least discriminating, is removed, the circumplex structure of the IIP-64 is distorted. For this reason, it was concluded that these three items, namely 44, 13, and 28, are relevant for the construct validity of the test so that the slight sacrifice in the reliability of the respective scales would be justified. Moreover, as evidenced in previous analyses, removing the three items does not improve the overall reliability of the IIP-64.

Table 4 shows that the correlations of the IIP-64 with the related measures were consistent with what was previously expected. The correlations of the IIP-64 subscales with the GHQ-12 were positive and statistically significant. The correlation of the

Table 4. Correlations between the scales of the IIP-64 with the GHQ-12, the SWLS, and the VQ.

	GHQ-12	SWLS	VQ-Ob	VQ-Pr
Domineering/Controlling	. 182*	-. 138*	. 244*	-. 159*
Vindictive/Self-Centered	. 202*	-. 168*	. 243*	-. 202*
Cold/Distant	. 203*	-. 221*	. 274*	-. 201*
Socially Inhibited	. 383*	-. 318*	. 298*	-. 260*
Non-assertive	. 368*	-. 290*	. 376*	-. 265*
Overly Accommodating	. 380*	-. 292*	. 275*	-. 247*
Self-sacrificing	. 342*	-. 209*	. 214*	-. 192*
Intrusive/Needy	. 180*	-. 171*	. 247*	-. 174*
IIP-64 Total	. 390*	-. 317*	. 378*	-. 296*

Note: *= significant correlations with $p < .01$.

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total score of the IIP-64 with the GHQ-12 was the strongest (.39). The correlations of the IIP-64 with the SWLS were negative and statistically significant, which would indicate that the greater the interpersonal problems, the lower the satisfaction with life. The correlation of the IIP-64 total scale with life satisfaction was also inverse and of moderate size with a correlation coefficient of r= -.317.

The correlations of the IIP-64 subscales with the VQ-Obstruction were positive and statistically significant, indicating that the greater the interpersonal problems, the higher the difficulty in moving in the direction of important life goals. The correlation of the IIP-64 total score with VQ-Obstruction was moderate, with an r= .378. On the other hand, consistent with the expectations, the correlations of the IIP-64 total and each subscale with the VQ-Progress scale were negative and statistically significant.

At a more detailed level, the correlations between interpersonal problems and psychological distress were higher for Socially Inhibited, Overly Accommodating, Nonassertive, and Self-Sacrificing. Furthermore, the interpersonal problem that showed the highest negative correlation with life satisfaction was Socially Inhibited. Lastly, the interpersonal problem that showed the highest correlations with VQ-Progress (negative) and VQ-Obstruction (positive) was Nonassertive.

Discussion

The general objective of the present study was to analyze the reliability and validity of the translated Spanish version of the IIP-64 in an accidental sample of 701 adult participants in Colombia. For this purpose, an instrumental design was carried out. The reliability was analyzed using Cronbach's α and McDonald's ω coefficients, and validity was explored by analyzing the circumplex structure using PCA and computing the correlations of the IIP-64 with other related measures.

Regarding the reliability of the instrument, it is acceptable to good. The results of the internal consistency of the scales estimated using Cronbach's α coefficients were in the range between .68 and .82. Comparing these values with the foundational study of the IIP-64 (Alden *et alia*, 1990), the lower end of the internal consistency range is four hundredths lower, and the upper end is three hundredths lower. These α coefficient results are also slightly lower relative to the findings of Holtforth *et alia* (2006) and Salazar *et alia* (2010). However, the overall Cronbach's α coefficient in this study was slightly higher than in Salazar *et alia* (2010). The overall performance of the IIP-64 as a measure of interpersonal distress and interpersonal problems with a total alpha coefficient of .93 can be categorized as excellent (George & Mallery, 2019).

Unlike previous studies, this research also estimated the test's internal consistency using McDonald's ω with acceptable to good results, ranging from .68 to .83. The behavior of this reliability estimate was very similar to Cronbach's α, providing additional convergent information on the internal consistency of the scales. Items 44, 13, and 28 seem to decrease the internal consistency of their respective scales, namely Domineering/Controlling, Non-Assertive, and Self-Sacrificing. However, removing these items did not increase the overall alpha and affected the circumplex structure of the instrument and, therefore, its construct validity. For this reason, it is concluded that, in this sample, the complete scale balances validity and reliability. It is precisely this set of items that show the best psychometric performance.

Regarding the construct validity of the instrument, the behavior of the circumplex structure was observed to be comparable to the foundational study of the IIP-64 (Alden

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et alia, 1990) and to the study of national standardization in the United States (Horowitz *et alia*, 2000). The IIP-64 evidenced a reasonable approximation to an octagonal distribution in Cartesian space in terms of location, angles, and vectors of the scales. This distribution in the circumplex two-dimensional space is superior to the structure reported in the dimensional scaling of the previous Spanish version of the IIP-64 (Salazar *et alia*, 2010), thus overcoming possible reservations regarding construct validity. Concerning convergent construct validity, and taking as reference instruments already validated in Colombia, the correlations between the constructs were also consistent with theoretical expectations.

Some limitations of the current study are worth mentioning. Firstly, the psychometric properties of the IIP-64 were only analyzed in a general community sample. The absence of a clinical sample may have influenced the slightly lower values of the internal consistency coefficients. Further studies should analyze the functioning of the IIP-64 in a clinical sample of participants consulting due to experiencing interpersonal difficulties. Secondly, the correlations of the IIP-64 were only obtained with other self-reports, which might have inflated the correlations obtained. Thirdly, the functioning of the IIP-64 has been only tested in Colombian participants, so we cannot generalize the results found in this study to other Spanish-speaking countries. Accordingly, subsequent studies might analyze the psychometric properties of the IIP-64 in other Spanish-speaking countries. Lastly, the reliability of the IIP-64 was only estimated through the computation of internal consistency coefficients, and the treatment sensitivity of the IIP-64 has not been explored. Further studies might analyze the test-restest reliability of the IIP-64 and the sensitivity of the IIP-64 scores to interventions aimed at improving interpersonal functioning.

In summary, the IIP-64 showed construct validity to the extent that the PCA identified two main dimensions (Affiliation and Power) that exceeded the minimum criterion of explaining 50% of the variance (Merenda, 1997). Additionally, the scale complied with the expected octagonal circumplex structure, and their subscales showed a pattern of circular correlations among them. In addition, the evidence of reliability using Cronbach's α and Mcdonald's ω was acceptable, exceeding coefficients of .60 and .70 (Loewenthal, 1996, Oviedo & Arias, 2005). Therefore, taking the evidence as a whole, it can be concluded that the IIP-64 is a valid and reliable test to be used in the Colombian population.

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