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Psychometric properties of the Spanish validation of the Insight Scale

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Introduction. The aim of our study was to validate the Spanish version of the Insight Scale (IS) (Birchwood et al., 1994), a multidimensional self-report insight scale.

Method. Observational study in a sample of patients with psychosis. A translation-backtranslation of the original scale was elaborated. Feasibility was calculated. Concurrent criteria validity with item 12 of PANSS, construct convergent and divergent validity with DAI and BPRS were calculated. IS scores between voluntary and involuntary inpatients were used for discriminant validity. Factor analysis, temporal reliability and internal consistency were also examinated.

Results. The sample consisted of 61 patients. Intervalss Correlation Coeficient (ICC) between item 12 of PANSS and IS was 0.49. Correlation between IS and DAI and IS and BPRS was 0.414 (p=0.01) and –0.14 respectively. Difference between mean IS scores of voluntary (8.37) and involuntary inpatients (6.21) was significant (U test Mann-Whitney: 244.5; p=0.005). Three factors were extracted that accounted for 68.32% of variance. Cronbach α was 0.717.

Conclusions. The Spanish version of IS is a quick, simple, self-report and multidimensional instrument of insight with satisfactory psychometric properties.

Key words:
Awareness. Evaluation. Insight. Psychosis.

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Propiedades psicométricas de la validación española de la *Insight Scale* (IS)

Introducción. El objetivo del estudio fue adaptar y validar en castellano la *Insight Scale* (IS) (Birchwood et al., 1994), escala autoaplicada que evalúa el *insight* multidimensionalmente.

Método. Estudio observacional de una muestra clínica de pacientes con psicosis. Se realizó una traducción y una retrotraducción. Se calculó la factibilidad, la validez de criterio concurrente con el ítem 12 de la PANSS, la validez de constructo convergente con la DAI y divergente con la BPRS, la validez de constructo discriminante entre las puntuaciones de la IS de pacientes ingresados voluntaria e involuntariamente, la validez de contenido, la fiabilidad test-retest y la consistencia interna.

Resultados. La muestra constó de 61 pacientes. El coeficiente de correlación intraclase (CCI) entre el ítem 12 de la PANSS y la IS fue de 0,49. La correlación entre la IS y la DAI y la IS y la BPRS fue de 0,414 (p=0,01) y –0,14, respectivamente. Las puntuaciones medias de la IS de los pacientes ingresados voluntariamente (8,37) e involuntariamente (6,21) fueron significativamente diferentes (U de Mann-Whitney: 244,5; p=0,005). Tres factores explicaron el 68,32% de la varianza de las puntuaciones de la IS. El CCI test-retest fue 0,765. El α de Cronbach fue 0,717.

Conclusiones. La versión española de la IS es un instrumento de evaluación del *insight* breve, sencillo, autoaplicado y multidimensional con adecuadas propiedades psicométricas.

Palabras clave:
Conciencia de enfermedad. Evaluación. *Insight.* Psicosis.

INTRODUCTION

Awareness of disease or insight generically refers to the degree of knowledge that a person has about his or her disease. Unawareness of disease is a symptom that mostly affects those who suffer a psychotic disorder[1]. Several studies have calculated that 50% to 80% of the patients with schizophrenia have low insight and thus that they consider they are not suffering any mental disease[2,3]. This is a relevant symptom since low awareness of disease has been related with poor treatment adherence and thus with the number of relapses and hospitalization of a patient during their disease[4-6].

Research on disease awareness in mental disorders in general is complex, mainly because of the different concep-

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tualizations of the term and lack of agreement on the appropriate evaluation instruments.

The first works on insight approached its study under the premise that it was a single dimensional and categorical phenomenon, that is, the person either had or did not have insight. At present, it is considered that insight is a multidimensional entity that affects different areas and has different intensities, and that it may be present in some of them and not present in others[7-9]. In spite of the agreement existing on the multidimentionality of the insight concept, there is not so much agreement in regards to the specific areas or dimensions that make it up. The review of the different studies on the concept of insight shows the existing discrepancies regarding number of dimensions and their specific concept. In accordance with a recent meta-analysis[3], the dimensions of insight having the greatest consensus are: *a)* knowledge about the symptoms of the disease; *b)* awareness of suffering a mental disorder; *c)* awareness of the social repercussions of the disorder; *d)* correct attribution of the symptom to the disease, and *f)* the need to receive adequate treatment. A patient may be aware of some aspect(s) of insight but not of others. It should be mentioned that insight is not a static entity, but rather that it is a dynamic phenomenon that depends on when the evaluation is made[2].

Insight of a patient can be evaluated through a clinical interview or by using a standardized psychometric instrument. There are currently different scales whose objective is to measure grade of insight. Some of them have a single dimensional perspective, although most have a multidimensional one.

An important aspect to consider when evaluating insight with a psychometric instrument is how the scale is administered, that is whether it is self or hetero-administered. Although most of the existing instruments are semistructured and heteroadministered interviews, some studies report a series of difficulties associated to them. Standing out among these difficulties are the need to employ more time for their administration and moderate interexaminer reliability[10]. Underevaluation of insight in patients with few communication skills and/or low intellectual level has also been observed[11]. In this sense, these disadvantages do not exist in the self-administered instruments and they are a simple and useful alternative for the evaluation of insight.

The Insight Scale (IS)[10] is one of the few self-administered scales that evaluates disease awareness from a multidimensional perspective. It is made up of 8 items, grouped into three dimensions: *a)* awareness of having symptoms; *b)* awareness of having a mental disease, and *c)* need to receive treatment. The range of scores goes from 0 to 12 points and a score equal to or greater than 9 points is suggestive of adequate insight or awareness of disease. The IS had satisfactory properties in the original developmental study. Internal consistency of the scale evaluated with Cronbach's alpha was 0.75 and the test-retest reliability measured with Spearman's correlation coefficient was 0.90[10]. These results indicate that the IS is an adequate instrument which is reliable, brief and simple for self-evaluation of insight by patients with psychosis.

These reasons, together with the limited specific measurements of insight having a self-administered character in Spanish justify our interest in making the Spanish validation of a translation to Spanish of the IS.

This present study has aimed to verify the psychometric properties of the Spanish version of the IS in the Spanish population.

MATERIAL AND METHODS

Design

This was an observational study to measure feasibility, reliability and validity of the translation to Spanish of the IS in a sample of 61 patients with psychosis admitted to the Rehabilitation Department-Subacute Unit of Parc Hospitalari Martí Julià (SR-USPHMJ).

Patients and sample

The sample was made up of patients admitted voluntarily and involuntarily in the SR-USPHMJ with a diagnosis of psychotic disorder following DSM-IV-TR criteria (schizophrenia, schizophreniform disorder, brief psychotic disorder, delusional disorder and schizoaffective disorder). Patients with an axis II diagnosis or who met criteria for mental disorder induced by medical condition or toxic consumption were excluded. Although there is no single criterion to determine an adequate sample size for the validation procedure of a questionnaire, using a ratio of 2 to 10 patients per item has been suggested[12]. Following this criterion, we chose a ratio of 7 patients per item plus 10% more to avoid possible losses of patients, our final sample having 61 patients.

The sample size makes it possible to detect a minimum difference of 3 points in the IS score in a bilateral paired contract, accepting an alpha risk of 0.05, beta risk of 0.02 and standard deviation of 3.0 points.

Variables and instruments

The sociodemographic variables of the patients (age, gender, civil status, work activity, housing, studies made), variables on the clinical background of the patient that could be related with their level of awareness of the disease (number of days of current admission, psychiatric diagnosis in accordance with the DSM-IV-TR, number of years with psychiatric history, number of admissions made in psychia-

tric hospitalization units, type of current admission and abuse and/or toxic dependence) and the scores obtained in the following instruments were recorded:

Insight Scale (IS)[10]

We used the Spanish version obtained from the translation and back-translation procedure of this self-administered scale originally developed by Birchwood et al. The principal psychometric properties have been described in the introduction.

Drug Attitude Inventory (DAI)[13]

Self-administered scale made up of 10 dichotomic items (true or false) that evaluates subjective response to antipsychotic medication. The score range is 10-20, no cut-off being defined. However, the interpretation is made that the higher the score on the scale, the more positive the patient's perception on the effect of the medication.

The Brief Psychiatric Rating Scale (BPRS)[14]

Heteroadministered scale that evaluates psychotic psychopathology through 18 items that should be evaluated using a 1 to 7 point score (in accordance with a series of anchor points or descriptions that allow for the evaluation of the items). The BPRS offers a global score and the scores of the positive and negative syndrome sections.

Item 12 of the general subscale of the Positive and Negative Syndrome Scale (PANSS)[15]

Heteroadministered item that evaluates the absence of judgment and introspection in relationship with the presence of a psychiatric disorder. It is evaluated using a 1 to 7 point score in which the higher the score, the lower awareness of the disorder.

Annex 1 — **Insight Scale (IS)**

	Agree	Disagree	Unsure
Some of the symptoms were made by my mind	2	0	1
I am mentally well	0	2	1
I do not need medication	0	2	1
My stay in hospital was necessary	2	0	1
The doctor is right in prescribing medication for me	2	0	1
I do not need to be seen by a doctor or psychiatrist	0	2	1
If someone said I had a nervous or mental illness then they would be right	2	0	1
Nome of the unusual things I experienced are due to an illness	0	2	1

Maximum score: 12 (full insight). Minimum score: 0 (no insight) (9 and above: good insight).

Subscales

Items		Possible total
1, 8	Awareness of symptoms	4 (3 or 4: good *insight*; 1 or 2: poor *insight*)
2, 7	Awareness of illness	4 (3 or 4: good *insight*; 1 or 2: poor *insight*)
3, 4, 5, 6	Need for treatment (items need to be added and divided by 2)	4 (3 or 4: good *insight*; 1 or 2: poor *insight*)

Procedure

A study protocol was written and was evaluated and approved by the Ethics Committee of the Institut d'Assistència Sanitària of Girona. An interview was made to assess the psychopathology of the patients in accordance with the BPRS, and the self-administered scales (IS and DAI) were administered. After, they were evaluated for awareness of disorder from item 12 on the general subscale of the PANSS by their psychiatrist in a period not exceeding one day of the administration of the previous test. The remaining variables were collected from the clinical history.

A subsample of 29 patients was chosen to calculate the test-retest reliability. To do so, 14 patients were randomly chosen among the voluntarily admitted patients and 15 from those involuntarily admitted ones. They were administered a retest of the IS at 7 days of the initial administration.

Statistical analysis

A descriptive analysis was made of the clinical and sociodemographic variables of the total sample, stratified by the different types of admission (voluntary and involuntary). The mean, standard deviation and 95% confidence interval of the mean for each group in the case of quantitative variables were calculated. For the qualitative variables, the re-

lative and absolute frequencies were calculated. We used the Mann Whitney U test to check for the existence of statistically significant differences between the groups in the sociodemographic and clinical variables measured on the interval or ratio scale. We applied Pearson's χ^2 statistics in the case of qualitative variables[16-18].

Evaluation of feasibility of the IS was analyzed by calculating the percentage of patients who did not completely respond to the scale.

For the test-retest reliability evaluation, the intraclass correlation coefficient (ICC) was used between the IS scores obtained in the initial evaluation and the scores of the IS obtained at 7 days.

Reliability in terms of internal consistency of the IS was evaluated with Cronbach's alpha coefficient. This can be considered as adequate when values greater than 0.7 are obtained. The individual correlations of each one of the items with the global score obtained and Cronbach's alpha coefficient without the item included in the scale were calculated in order to assess the adequacy of the inclusion of each one of the items. The internal consistency study was made using the score obtained in the initial evaluation.

Content validity was determined through the application of a factorial analysis in order to check if the IS had a similar factorial structure to the original version.

Validity of the concurrent criterion was evaluated with the ICC between the global score of the IS and the score of item 12 on the general subscale of the PANSS. This item, included in one of the scales used most in the evaluation of psychotic disorders (PANSS), provides another simple and brief method of evaluating disease awareness. The scores of both measures should correlate positively and significantly.

Validity of the convergent and divergent construct was established by calculating Spearman's correlation coefficient between IS scores and DAI scores and the BPRS in accordance with the following hypotheses: *a)* awareness of the disorder is related with attitude towards the medication[19], so that the patient with greater disease awareness show a more positive attitude towards the medication. Thus, we expected to find a significant and positive correlation between the IS and DAI scores, and *b)* in spite of the controversy regarding the relationship between psychopathology and disease awareness, lack of insight has been related in different studies[20,21] with the presence of greater psychotic psychopathology (up to the point of having considered lack of awareness about the disorder as one more symptom of the psychotic psychopathology)[22]. That is why we expect to find a significant and negative correlation between the IS and the total score and of the two BPRS syndromes.

A comparison was made between the mean score of the IS of the patients admitted voluntarily and those admitted involuntary using the Mann-Whitney U test to evaluate the discriminate construct validity. Patients with psychosis undergo involuntary admission when a psychiatrist considers the admission essential. This may be due to the invasiveness of the symptoms presented by the patient and because the patient may suppose a risk for him or herself or for others) and the patient rejects admission (generally because the patient is not aware of symptoms such as delusions and hallucinations that they consider to be real). Patients who are admitted voluntarily, on the contrary, generally have a greater degree of awareness of their symptoms. Given the difficulty of assuring voluntary participation in the study (through informed consent) of the patients who are involuntarily admitted, we decided to reduce their number in relationship to those voluntarily admitted. Our hypothesis was that patients with voluntary admission show a significantly greater grade of disease awareness.

RESULTS

Descriptive analysis

The sample was made up of 61 patients, 39 of whom (63.9%) were voluntarily admitted and 22 (36.1%) were involuntarily admitted. Mean age was 38.15 years, with a standard deviation (SD) of 10.51 (interval: 18-63). A total of 72.1% (n=44) were men. Regarding civil status, el 77% (n=47) had no partner and 22.9% (n=14) were living with a partner. Regarding work activity, 82% (n=50) were not working, 13.1% (n=8) performed a standardized job and 4.9% (n=3) were performing protected work. Regarding housing, 65.6% (n=40) were living with their families, 24.6% (n=15) were living alone, 8.2% (n=5) were living with a partner and 1.6% (n=1) were living in an apartment with supervision of the mental health services. Regarding educational level, 49.2% (n=30) had completed secondary studies, 32.8% (n=20) had done primary studies, 14.8% (n=9) had begun university studies and 3.3% (n=2) had no studies. The DSM-IV-TR diagnosis for 80.3% (n=49) was Paranoid Schizophrenia, while the remaining 19.7% (n=12) had been diagnosed of other psychotic disorders. Among the patients evaluated, 18% (n=11) were abusers of some agent and 9.8% (n=6) were dependent on some type of substance. Mean days of admission of the patients at the time of evaluation was 50.41 (SD: 122.82; interval: 2-820). Mean admissions made by the patients in psychiatry units were 4.57 (SD: 3.94; interval: 1-20). Mean years of psychiatric history were 13.60 (SD: 8.94; interval: 1-39). Mean score on the DAI was 15.79 (SD: 2.39; interval: 10-20). No significant differences were found between voluntarily and involuntarily admitted patients regarding the previously described sociodemographic and clinical variables. Mean IS was 7.51 (SD: 2.75; interval: 0-12) and 3.89 (SE: 1.36; interval: 1-6) on item 12 of the general subscale of the PANSS. The differences between the voluntarily and involuntarily ad-

mitted patients for the last two scores were statistically significant, there being greater awareness of the disease for the voluntary group in both cases.

Table 1 and 2 show the clinical and sociodemographic characteristics of the patients stratified according to admission type.

Feasibility analysis

All the patients who participated in the study answered the scale completely, the IS showing a 100% feasibility.

Table 1 Characteristics of the sample stratified according to type of admission: qualitative variables

	Voluntary (n = 39)	Involuntary (n = 22)
Male gender (n) (%)	29 (74.4)	15 (68.2)
Civil status (n) (%)		
Without partner	32 (82.1)	15 (68.2)
With partner	6 (15.4)	13 (21.3)
Widow(er)	1 (2.6)	1 (1.6)
Work activity (n) (%)		
Standardized work	6 (15.4)	2 (9.1)
Protected work	2 (5.1)	1 (4.5)
Without work	31 (79.5)	50 (82)
Living conditions (n) (%)		
Alone	11 (28.2)	4 (18.2)
With partner	3 (7.7)	2 (9.1)
With family	24 (61.5)	16 (72.7)
Protect housing	1 (2.6)	0 (0)
Educational level (n) (%)		
No studies	2 (5.1)	0 (0)
Primary studies	15 (38.5)	5 (22.7)
Secondary studies	18 (46.2)	12 (54.4)
University studies	4 (10.3)	5 (22.7)
Diagnosis (n) (%)		
Paranoid schizophrenia	33 (84.6)	16 (72.7)
Undifferentiated schizophrenia	1 (2.6)	0 (0)
Delusional disorder	0 (0)	2 (9.1)
Schizoaffective disorder	4 (10.3)	3 (13.6)
Unspecified psychotic disorder	1 (2.6)	1 (4.5)
Substance abuse (n) (%)		
Yes	6 (15.4)	5 (22.7)
No	33 (84.6)	17 (77.3)
Substance dependence (n) (%)		
Yes	2 (5.1)	4 (18.2)
No	37 (94.9)	18 (81.8)

Table 2 Characteristics of the sample stratified by type of admission: qualitative variables

	Voluntary (n = 39)	Involuntary (n = 22)
Age (mean) (SD)	37.77 (10.27)	37.63 (11.66)
Days of admission (mean) (SD)	45.80 (91.01)	27.58 (26.56)
Numbers of admissions (mean) (SD)	4.93 (4.63)	4.05 (2.44)
Years of psychiatric history (mean) (SD)	13.69 (9.16)	13.47 (9.24)
DAI (mean) (SD)	15.91 (2.54)	15.56 (2.24)
Item 12 PANSS (mean) (SD)*	3.45 (1.29)	4.32 (1.16)
IS (mean) (SD)*	8.37 (2.20)	6.21 (3.24)
Negative BPRS symptoms (mean) (SD)	8.08 (2.78)	8.77 (3.38)
Positive BPRS symptoms (mean) (SD)	9.60 (3.63)	10.23 (3.60)
Total BPRS (mean) (SD)	39.25 (8.27)	41.42 (8.40)

*Statistically significant differences in mean score between voluntarily and involuntarily admitted patients.

Analysis of reliability

The test-retest reliability for a one-week interval between administrations was calculated based on a subsample of 29 patients (14 voluntarily admitted and 15 involuntarily admitted). The ICC between both administrations was r = 0.765.

In regards to internal consistency of the scale, Cronbach's alpha was 0.717 for the entire sample. Table 3 shows the mean of each item and Cronbach's alpha is this item is eliminated.

Analysis of validity

We performed a factorial analysis of the IS items to check their content validity.

As a previous requirement, the application conditions of the factorial analysis were determined using the Bartlett's sphericity test and the KMO (Kaiser-Meyer-Olkin) measure of sample adequacy. The value of the grade of significance of the Bartlett's sphericity test was less than 0.005 (χ^2=91.15; gl=28) and the KMO Index was 0.607. All the indicators were positive for the performance of the factorial analysis. The extraction method of the principal components was used and extraction of the number of factors was predetermined based on autovalues equal to or superior to 1. The factorial analysis showed three factors that explained

Table 3	Internal consistency of the Spanish version of the IS	
	Mean	Cronbach's alpha in the item is eliminated
Item 1 IS	1.15	0.70
Item 2 IS	0.85	0.77
Item 3 IS	1.46	0.64
Item 4 IS	1.41	0.64
Item 5 IS	1.44	0.72
Item 6 IS	1.39	0.65
Item 7 IS	1.30	0.69
Item 8 IS	1.24	0.69

68.32% of the variance of the scores. Table 4 shows the factorial weights of each item.

In regards to the validity of the concurrent criterion, the ICC between the total score of the IS and the score of item 12 of the general subscale of the PANSS showed a positive and significant correlation between both, specifically one of r=0.49.

In relationship to the validity of convergent construct, Spearman's correlation coefficient between the total score of the IS and the DAI score was positive and significant (r=0.414; sig. bilateral 0.01).

To verify the divergent construct validity, we calculated the Spearman's correlation coefficient between the total score of the IS and the different clusters of the BPRS items (positive syndrome and negative syndrome). The correlations of the IS with the total score of the BPRS (r=–0.14) and the positive (r=–0.071) and negative (r=–0.21) symptoms clusters were not significant.

Table 4	Content validity: factorial analysis		
	Components		
	1	2	3
Item 3 IS	0.86	–	–
Item 4 IS	0.82	–	–
Item 6 IS	0.81	–	–
Item 1 IS	–	0.78	–
Item 8 IS	–	0.74	–
Item 7 IS	–	0.72	–
Item 5 IS	–	–	0.82
Item 2 IS	–	–	–0.63

Regarding the validity of the discriminate construct, we calculated the Mann-Whitney's U test to compare the mean score of the IS of the voluntarily admitted patients (mean IS: 8.37) and involuntarily admitted ones (mean IS: 6.21). The results showed that the differences between the means of both groups were statistically significant (Mann-Whitney's U test: 244.5; bilateral sig.: 0.005). This shows that the voluntarily admitted patients have better disease awareness than the involuntarily admitted ones.

CONCLUSIONS

Our study aimed to validate the IS in Spanish. To do so, the psychometric properties of the Spanish version were checked, examining its feasibility, reliability and validity in a sample of 61 patients with psychotic disorder.

The 100% feasibility shows that the scale can be easily understood by the patient and thus that it is easy to administer.

Regarding reliability, the results indicate that internal consistency of the test is acceptable (a=0.71) and is comparable with the results obtained in the original scale (a=0.75).

For the test-retest reliability, it is considered that the ICC values ranging from 0.4 to 0.75[23] represent a reliability from regular and good while values over 0.75 are considered to be excellent[24]. The test-retest reliability in our study for one week is satisfactory (r=0.76) and indicates the stability of the patient's response during this time period.

Regarding content validity, the factorial analysis shows that the Spanish version of the scale has 3 factors that adjust to those obtained in the original scale[10]. The three dimensions that are evaluated in the scale are: *a)* awareness of having a mental disease; *b)* correct attribution of the symptoms to the disease and, finally, *c)* awareness of the need for treatment. The percentage of the variance explained, in accordance with the factorial analysis, by the Spanish version of the insight scale (68.32%) is found to be around the values offered by the original scale (60.4%) and the Italian validation study (62%)[25]. Thus, it can be considered that the content validity of the Spanish version of the IS is comparable to that of the original version.

Convergent construct validity was moderate, with a correlation coefficient of 0.414 between the IS and DAI score. This result indicates that there is an association between the grade of disease awareness of a patient with psychosis and the patient's attitude towards the drug treatment. This result supports the existing evidence on the association between disease awareness and attitude towards the treatment described by previous investigations in the sense that a greater grade of disease awareness is associated to a more favorable attitude towards the treatment and better treatment adherence[19,26-28].

The results in relationship to the validity of the divergent construct show that there is no significant relationship between the disease awareness evaluated with the IS and the grade of psychopathology measured with the BPRS interview. In addition, no relationship was observed between the grade of disease awareness and specific syndromes, such as positive symptoms syndrome (hallucinations, unusual thought content, etc.) and negative symptoms syndrome (speech alterations, apathy, abulia, etc.). The studies that have related grade of disease awareness with level of psychopathological severity do not provide conclusive data. Some studies have found significantly negative correlations between grade of disease awareness and severity of positive and negative symptoms while other studies have found a moderate or null relationship[3,7,21,29-31]. This inconsistency between the results has been attributed to several factors: in the first place, to the differences regarding the concept of disease awareness; in the second place, to methodological problems of the different studies such as use of small or heterogeneous samples and finally, to the use of different measurement instruments of questionable reliability and validity.

The results on the validity of the discriminate construct show a higher grade of disease awareness among the patients who had a voluntary admission versus those who were admitted against their will. This result, consistent with results from other studies[7,32], shows that patients who have a voluntary admission have higher levels of disease awareness. This fact is associated with greater convergence between clinical judgment (of the psychiatrist who evaluates the need for admission in agreement with the clinical condition of the patient) and the patient's opinion on the need for the admission (given that he or she is aware to a greater degree than the patients who undergo involuntary admission of factors such as the presence of an important symptom due to the disease or of the benefits that can be offered regarding the disease by an admission).

In regards to the criterion validity, the correlation between the IS score and item 12 of the PANSS shows a positive concordance between grade of disease awareness evaluated based on two types of evaluation methods (auto and heteroadministered). In general, there is a modest association between the evaluations made by autoadministered and heteroadministered scales[28]. On the other hand, the study of Young et al.[11] points out the fact that this relationship can increase if the self-applied evaluation is done prior to the heteroadministered one. In our study, the administration of the IS was done before an external evaluator evaluated disease awareness with item 12 of the PANSS. Thus, in spite of the conceptual differences and the administration existing between the type types of instruments, we consider that the fact that the IS is administered before item 12 of the PANSS could support the results obtained in our study.

The principal limitation of our study is that the sample is made up of hospitalized subjects. In addition, most of them had a long-course severe psychotic disorder with an elevated number of relapses and readmissions. All of this makes it difficult to generalize the results obtained to patients in initial stages of the disease or patients with psychotic disorders who are being followed-up as outpatient and who have a good evolution of the disorder.

In summary, the results of this work indicate that the Spanish version of the IS is a self-administered scale that is fast and easy to administer and it has satisfactory feasible, reliable and valid psychometric properties. Its application scope can include both research and clinical practice with the objective of evaluating the grade of improvement of disease awareness of patients with psychosis after an intervention.

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