Spanish adaptation of the Markova and Berrios Insight scale

Lourdes Nieto[1]
Ada I. Ruiz[2]
José Blas-Navarro[3]
Esther Pousa[4]
Jesús Cobo[4, 5]
Sacha Cuppa[6]
Jordi E. Obiols[1]

[1]Departament de Psicologia Clínica i de la Salut
Unitat de Recerca en Psicopatologia i Neuropsicologia
Universitat Autònoma de Barcelona. Bellaterra (Barcelona)

[2]Institut de Neuropsiquiatria i Addiccions
Parc de Salut Mar. Barcelona

[3]Departament de Psico biologia i Metodologia en Ciencies de la Salut
Universitat Autònoma de Barcelona. Bellaterra (Barcelona)

[4]Salut Mental
Corporació Sanitària i Universitària Parc Taulí. Sabadell (Barcelona)

[5]Departament de Psiquiatria i Medicina Legal
Universitat Autònoma de Barcelona. Bellaterra (Barcelona)

[6]Sociedad Española de Psicoanálisis
Asociación Psicoanalítica Internacional

Introduction. The aim of this study was to adapt the Markova and Berrios Insight scale in Spanish and to analyze its psychometric properties and relationships to the severity of the psychotic symptoms.

Methodology. A translation-backtranslation of the original scale was elaborated and a panel of professionals participated to assess conceptual equivalence and naturality. This is a 30-item self-administered scale with response options Yes/No. A total of 170 psychotic patients were assessed according to DSM-IV-TR diagnostic criteria. Confirmatory factor analysis validated the structure originally proposed. Internal consistency was evaluated using Cronbach's Alpha Coefficient and the Intraclass Correlation Coefficient (ICC). We calculated the association between variables with Spearman's rank correlation coefficient.

Results. The 4-factors structure originally proposed by Markova and Berrios was verified. Cronbach's alpha coefficient value for the whole scale was 0.824, indicating good internal consistency. The ICC value was 0.855. There were no statistically significant relationships between severity of psychotic symptoms and the lack of insight.

Conclusions. The Spanish adaptation of the Markova and Berrios Insight Scale has good internal and external reliability. It is simple and easy to perform and very sensitive to change.

Key words: Insight, Awareness of Disease, Psychosis, Psychometric Scale

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Adaptación al castellano de la escala de Insight de Marková y Berrios

Introducción. El objetivo de este estudio fue realizar la adaptación al castellano de la escala de Insight de Marková y Berrios, así como analizar sus propiedades psicométricas y su relación con la gravedad de la sintomatología psicótica.

Metodología. Se utilizó un método de traducción-retrotraducción y la participación de un panel de profesionales para valorar equivalencia conceptual y naturalidad. Se trata de una escala de autoaplicación de 30 ítems con opciones de respuesta Sí/No. Fueron valorados 170 pacientes psicóticos según criterios DSM-IV-TR. Mediante análisis factorial confirmatorio se validó la estructura propuesta originalmente. La consistencia interna se evaluó a través del *Coeficiente Alfa de Cronbach* y el *Coeficiente de correlación intraclase* (CCI). La asociación entre las variables se analizó con el coeficiente de correlación de *Spearman*.

Resultados. La estructura de 4 factores propuesta originalmente se verifica en gran medida. El valor del *Coeficiente alfa de Cronbach* para toda la escala fue de 0.824 indicando una buena consistencia interna. El valor del CCI fue de 0.855. No se observaron relaciones estadísticamente significativas entre la gravedad de la sintomatología psicótica y el déficit de *insight* valorado con la escala de Marková y Berrios.

Conclusiones. La versión castellana de la Escala de *Insight* de Marková y Berrios presenta validez de constructo, buena consistencia interna, buena validez externa, es sencilla, de fácil aplicación y de fiabilidad temporal.

Palabras clave: Insight, Conciencia de Trastorno, Psicosis, Escala Psicométrica

INTRODUCTION

Currently, the use of the concept insight* is very extended in the psychiatric clinical language and more

Correspondence:
Lourdes Nieto
E-mail: nietoglourdes@gmail.com
Phone: 0034-664552138
Departament de Psicologia Clinica i de la Salut. Unidat de Recerca en Psicopatologia i Neuropsicologia. Universitat Autònoma de Barcelona. Bellaterra (Barcelona), 08019.

* In Spanish, the term insight has been translated as disease awareness. However, this refers to a multidimensional phenomenon that goes beyond the mere awareness of the disorder. Thus, it was decided to use the term in English in this work.

specifically in psychosis. From an empirical point of view, different studies have demonstrated that the deficit of insight is generally more prevalent and severe in psychotic spectrum disorders than that observed in other mental conditions.[1] It has been estimated that 50 to 80% of the patients with schizophrenia do not consider that they have any type of mental disorder. Most of them only accept treatment because of pressure from their family and friends. Other patients, although they may understand that their psychotic experiences are real symptoms, do not accept that these are due to a mental disease or even that they require treatment.[2, 3] In psychosis, the consequences of the deficit of insight do not take long in being reflected in the evolution of the individuals, since it has been related with greater aggressiveness and impulsiveness, with an increase in risk of comorbid substance abuse, with greater psychosocial deterioration, worse treatment adherence and, definitively, with worse global prognosis of the disease.[1, 4]

Over time, different theoretical proposals have arisen to try to understand the deficit of insight in psychosis.[5] Although it has currently not been possible to reach a consensus on an operational definition of it, most of the empirical studies consider it as a multidimensional phenomenon that not only includes the awareness of the patient of his/her symptoms or disease but also greater elaboration, conceptualized distinctively as a correct attribution,[6] a consideration of the symptoms as pathological,[2] or a better knowledge of the effects of the symptoms or disease in the context of their setting.[4]

Several clinical instruments have been designed to try to capture and measure the deficit of insight in psychosis.[3, 7, 8] However, there is big discussion about if these, in spite of their structural differences, are capable of capturing the same phenomenon. Sanz et al.[9] compared the performance of some of these scales, evaluating their intercorrelation and relation with some clinical variables, for example, severity of the psychotic symptoms, cognitive deterioration, treatment adherence and others. These authors observed that although there was a correlation between the scales, their relation with the different clinical variables was unequal. According to some authors,[10, 11] one of the possible reasons for these discrepancies could be because these instruments have left out some relevant dimensions for the construct of insight. Panchón et al.[8] have stated that little consideration has been given to the interactional dimension in most of the instruments and they have suggested that the development of the evaluation methodology should be done not only by introducing the variables per se of the patient but also of their interaction with their environment.

Along this same line, Markova and Berrios[12] consider that insight is more than the simple apparent knowledge that the patient may have about him/herself and disorder. Insight is a form of self-knowledge that includes the knowledge of the patient about him/herself (how the patient feels) and his/her disorder (what is happening to the patient), and the understanding of the effects that the disease causes in his/her interaction with the world. Markova and Berrios[13] designed a 32-item self-applied scale and a semistructured interview in order to capture and evaluate the deficit of insight in psychosis. The items were chosen according to an apparent validity method, that is, dividing the concept of insight into components that would represent relevant aspects in the self-knowledge of the disease of the patient. Specifically, they included questions belonging to the following areas: hospitalization, mental disease in general, perception of being ill, change perceived in oneself, control over the situation, perception of the setting and wanting to understand one's own situation. The semistructured interview helped to go deeper into the study of insight and to verify the truthfulness of the answers obtained on the self-applied scale.

Later, Bulbena et al.[7] made an adaption of this first scale in a reduced version of 22 items in the Spanish population. The sample was made up of 42 women with a mean age of 61 years, admitted to a hospital center with a diagnosis of schizophrenia or schizoaffective disorder. The results showed adequate indexes of test-retest reliability and internal consistency comparable to the original English version. Parallelly, the severity of the psychopathology was studied with the Brief Psychiatric Rating Scale (BPRS) and cognitive function with the Mini-mental state Exam, with which the scale did not show any correlation, not even with the age.

After, Markova et al.[14] presented a re-standardization of this first scale that was made up of a self-application instrument of 30 items with the Yes/No response choices. The type of correction of the test is dichotomic, giving 1 point to the responses that indicate insight and 0 points to those that indicate no insight. Positive answers to items 1, 3-6, 8-11, 13-19, 21-22, 24-27 and 30, and negative answers to items 2, 7, 12, 20, 23, and 28-29 were assigned a value of 1. Scores of 30 indicate insight, while 0 indicates no insight. Recently, Vanelli et al.[15] validated this last version of the Markova and Berrios Insight Scale in the Portuguese population. The sample was made up of 83 patients with a mean age of 42 years and with diagnosis of schizophrenia, bipolar disorder or unspecified psychotic disorder. The authors observed that the Portuguese version of this scale showed good internal consistency and satisfactory test-retest reliability. They have also indicated that it is a scale that is easy to understand for the patients and of easy application both in the clinical practice and in research projects.

Considering the great complexity over time represented in the attempt to capture such a complex phenomenon as insight,[1, 16] it is very useful to have different validated evaluation scales that allow us to come closer to the

understanding of this multidimensional phenomenon. In research, it is essential to use instruments that are easy to apply and that are as close as possible to the experience of the patient. Furthermore, these should make it possible to standardize the collection of the information so that this can be processed quantitatively. Thus, the purpose of this study was to adapt the Markov and Berrios Insight scale into Spanish and to analyze its psychometric properties and relation to the severity of the psychotic symptoms.

METHODOLOGY

Participants

All the subjects who fulfilled the following criteria were invited to participate in the study: 1) patients over 18 years of age from the Psychiatry area of the Corporació Sanitaria Parc Taulí Sabadell, 2) previous diagnosis of any disorder on the psychotic spectrum in accordance with DSM-IV-TR,[17] 3) without diagnosis of mental retardation or neurological disorders. The sample was finally made up of 170 participants. The sociodemographic and clinical characteristics of this non-probability convenience sample can be observed in Table I.

Evaluation instruments

Sociodemographic and clinical data questionnaire developed ad hoc for this investigation.

The severity of the psychotic psychopathology was evaluated using the Positive and Negative Syndrome Scale (PANSS) in the Spanish version validated by Peralta and Cuesta.[18]

Evaluation instruments of deficit of insight

Item 12 of the Positive and Negative Syndrome Scale[18] (PANSS-G12). This is an item that evaluates the disorder of awareness or understanding of one's own psychiatric disorder and vital situation. This is manifested by the difficulty to admit past or present psychiatric disorders, refusal to undergo treatment or to be hospitalized, decisions characterized by a limited sense of anticipation and of their consequences and by unreal short and long term projects.

The first three items of the Evaluation Scale of the Unawareness of Mental Disorders (SUMD, Scale to Assess Unawareness of Mental Disorder) adapted to Spanish by Ruiz et al.[19] This scale was used to evaluate insight and its dimensions: disease awareness, effects of the medication and of the social consequences of the disorder. It is a standardized scale that is scored based on a direct semi-structured interview with the patient. The scores range from 1 to 5, the higher scores indicating greater deficit of insight.

Markova and Berrios Insight Scale.[14] The original version of this scale in English was translated into Spanish by a bilingual translator with clinical and investigator experience in the field studied (S. Cuppa), with the participation of a panel of expert professionals who evaluated the conceptual equivalence and naturality of the items. After, a backtranslation of the initial Spanish version was made into English. The resulting version of this process is shown in Appendix I. This scale is a self-evaluation one. However, in this study, it was decided to read the questions out loud to each patient in order to expressly verify that they were easy for the subjects to understand.

Procedure

The study was conducted in the psychiatry area of the Corporació Sanitaria i Universitaria Parc Taulí, Sabadell, Barcelona. Previously, the study was approved by the Ethics Committee of Health Research of Parc Taulí and followed all the national and international ethics requirements. All the participants were informed about the nature of the study, agreed to participate voluntarily and signed an informed consent form.

Initially, the diagnosis of the patients was confirmed by means of the structured clinical interview of the DSM-IV Axis I Disorders (SCID I)[20] and sociodemographic and clinical data were gathered. In a second session of approximately 70 minutes, psychological instruments were applied. All the evaluations were done by previously trained psychologists and psychiatrists.

Statistical Analysis

The statistical analysis was carried out using the IBM SPSS version 19 program and the MPlus 6.1 program (the latter for confirmatory factorial analysis). The descriptive analysis of the data was done using the mean, median, standard deviation and range of values. Normality of distribution was verified by means of the Kolmogorov test. To verify the 4-factors structure proposed by the authors (Markova et al.[14]), a confirmatory factorial analysis for binary variables was carried out. Internal consistency was evaluated with *Cronbach's Alpha Coefficient* and the *Intraclass Correlation Coefficient* (ICC). Association between the variables was evaluated by means of Spearman's rank correlation coefficient.

Table 1 Sociodemographic and clinical data of the sample studied N=170. PANSS=Positive and Negative Syndrome Scale of Schizophrenia. SUMD=Scale to Assess Unawareness of Mental Disorder

	X	Median	SD	Min/Max
Age (years)	37.7	35.8	12.1	18.20/67.1
Time of mental disorder evolution (years)	14.6	12.1	13.8	1.2/66.7
Psychopathology				
PANSS	85.0	83.0	21.0	34.0/139.0
PANSS Positive	20.2	20.0	5.7	7.0/37.0
PANSS Negative	21.6	20.0	8.6	7.0/46.0
PANSS General	43.1	42.0	10.7	18.0/70.0
Measurements of Insight				
PANSS - general - item-12	4.7	5.0	2.3	1.0/7.0
Markova and Berrios Scale	14.2	14.0	5.6	3.0/27.0
SUMD Scale	10.0	10.0	3.9	2.0/15.0
Awareness of disorder (SUMD item-1)	3.4	4.0	1.5	1.0/5.0
Awareness of effect of the medication (SUMD item-2)	2.8	3.0	1.6	1.0/5.0
Awareness of the social consequences (SUMD item-3)	3.8	5.0	1.6	1.0/5.0

Gender	n	%
Gender		
Men	105	(61.8)
Women	65	(38.2)
Educational Level		
Primary	91	(53.5)
Secondary	58	(34.1)
Upper	12	(7.1)
Without education (read and write)	9	(5.3)
Diagnosis		
Schizophrenia	105	(61.7)
Unspecified psychotic disorder	32	(18.8)
Schizoaffectives	26	(15.3)
Schizophreniforms	7	(4.2)
Clinical status		
Total hospitalization	132	(77.6)
Partial hospitalization	18	(10.6)
Outpatient visits	20	(11.8)
Pharmacological treatment		
Antipsychotics	170	(100)
Oral antipsychotics	142	(83.5)
Long-duration antipsychotics (depot)	69	(40.6)
Benzodiazepines	102	(65.4)
Antidepressants	28	(16.5)
Mood stabilizer drugs	26	(16.7)

RESULTS

Internal Consistency

The value of *Cronbach's Alpha Coefficient* was 0.824, indicating good internal consistency of the scale. It was also verified that there was no item which, when eliminated, significantly increased the internal consistency reliability of the scale. Only item 29, when eliminated, would increase the internal consistency to 0.838. No redundant items were observed.

Test-retest reliability

To verify the test-retest reliability, the scale was applied twice to 12 participants with a 24-hour difference between the first and second evaluation. The value of the intraclass correlation coefficient of absolute agreement was 0.855 (p<0.0005) with a confidence interval of 95% of 0.586 to 0.956, indicating that the scale has good temporal reliability.

Confirmatory factorial analysis

In the original version of the Markova and Berrios Insight scale, the authors grouped the items into 4 factors in order to identify the principal components that could have a clinical significance for insight. When we confirmed this structure with our data, in general, we obtained a good fit of the original model. The Comparative Fit Index (CFI) =0.937 and Tucker-Lewis Index (TLI)=0.926, superior to 0.90, and the Root Mean Square Error of Approximation (RMSEA) value =0.047 (90% CI: 0.028 to 0.064) suggest that, globally, our data support the 4-factors structure proposed. Table 2 shows the standardized factorial loads of the 19 out of 30 items that make up the four factors, together with those obtained by the original authors. As can be seen, in general there is high equivalence, except for one item of factor 4 that appears as a sign of weight opposite to that of the original work.

Tabla 2 **Confirmatory factorial analysis of the Spanish Version of the Markova and Berrior Insight scale.**

	Original Data	Adaptation to Spanish
Factor 1. Conciencia de tener pensamientos extraños y pérdida de control sobre la situación		
(24) Siento que están pasando cosas extrañas a mi alrededor	0.771	0.791
(25) Sé que mis pensamientos son extraños pero no puedo remediarlo	0.754	0.647
(10) Tengo dificultades para pensar	0.699	0.594
(27) Las cosas ya no tienen sentido	0.683	0.605
(19) Me parece que no tengo tanto control sobre mis pensamientos	0.610	0.730
(11) En este momento, sufro problemas de nervios	0.591	0.505
(21) Siento que mi mente se está yendo	0.539	0.800
(14) Me cuesta estar tranquilo con gente que conozco	0.528	0.646
Factor 2. Sentimientos de sentirse diferente, de percibirse extraño		
(29) Siento que mi estado actual ha sido causado deliberadamente por algo	-0.726	-0.417
(4) La gente a mi alrededor parece diferente	0.719	0.599
(15) Me está pasando algo extraño	0.614	0.740
(12) Todo a mi alrededor es diferente	-0.567	-0.607
(18) La enfermedad mental puede ocurrir en algunas personas de la población	0.563	0.380
(16) Quiero saber por qué me siento así	0.546	0.649
Factor 3. Sentimientos vagos de que algo va mal		
(9) Me siento intranquilo	0.617	0.795
(1) Me siento diferente de lo normal en mí	0.575	0.677
(23) Ahora todo me parece mucho más claro que antes	0.533	0.189
Factor 4. Percepción de sufrir cambios físicos		
(28) Mi problema principal es mi salud física	0.757	0.646
(20) No estoy enfermo pero estoy cansado	0.744	-0.297

Tabla 3 **Spearman's rank correlation coefficient between the different insight evaluation instruments and those of the relation between the severity of the psychotic psychopathy and deficit of insight**

	Markova and Berrios *Insight* Scale		Severity of the Psychotic Symptoms (PANSS)	
Markova and Berrios Insight Scale			0.060	p= 0.438
PANSS Insight -general-item-12	-0.306	p≤0.01	0.448	p≤0.01
SUMD Insight Scale	-0.302	p≤0.01	0.383	p≤0.01

Convergent validity

To analyze the convergent type external validity, an analysis was made of the correlation among the Markova and Berrios Insight Scale, the PANSS-G12 item and the total score of the reduced version of the SUMD scale that included the awareness of the mental disorder, awareness of the effects of the medication and awareness of the social consequences of the mental disorder. The data on both the Markova and Berrios Insight Scale and the SUMD showed a normal distribution. This did not occur with those of the PANSS-G12 item, so that *Spearman's* rank correlation coefficient was calculated. Markova and Berrios Insight Scale had a statistically significant correlation with the PANSSG-12 and with the SUMD (see Table 3).

Relation between the deficit of insight and severity of the psychotic psychopathology

Finally, the relation between the severity of the psychotic psychopathology (PANSS) and the deficit of insight was studied with *Spearman's* rank correlation coefficient. When this was evaluated using Markova and Berrios Insight Scale, no statistically significant relation was observed between these variables. However, statistically significant relations were observed between the severity of the psychotic psychopathology and the deficit of insight when evaluated both with the PANSSG-12 and with the SUMD (see Table 3).

DISCUSSION

The objective of this study was to adapt the Markova and Berrios Insight scale in Spanish and to analyze its psychometric properties. The results show good internal consistency of the scale, and the values observed were even superior to those registered in adaptations in other populations.[15] In the original version of the scale, the authors grouped the items aiming to identify the main components that could have a clinical significance for insight. These are; 1) awareness of having unusual thoughts and loss of control of the situation, 2) perceptions of feeling different, of perceiving oneself as rare, 3) vague feelings that something is going wrong and 4) perception of suffering physical changes. It could be seen that in the herein-proposed Spanish version, the items are also grouped into these four components, showing a mild discrepancy in item 20, which in our results does not have a relevant factorial load on factor 4.

The conceptual diversity of the term insight is translated into a variety of evaluation scales whose results have hardly been compared.[9] Because of this, it is not surprising that the empirical research data are contradictory.[3] In regards to the *level* of psychopathology, some studies have found a relation between its severity and the deficit of insight, while others have not found this.[21-24] One group of investigations, on the other hand, found a relation between the deficit of insight and some specific symptoms or syndromes.[25-27] However, agreement is also lacking on this point. In this study, no relation was found between the severity of the psychotic psychopathology and the deficit of insight when this was evaluated using the Markova and Berrios scale. Similar data have already been observed by the authors of the scale themselves[14] and in adaptations to other populations.[15] However, when the deficit of insight was evaluated using other scales (PANSSG-12 and SUMD), relationships were observed between these variables. One possible explanation for this is that, up to now, the tools that have been developed to evaluate insight capture different elements of it.[1, 4, 5, 28] In most of the instruments, the evaluation of the insight is basically focused on analyzing attitudes towards the disease and the medication. Furthermore, the values are obtained from the clinical point of view while the Markova and Berrios scale is a self-evaluation one and therefore, it is the patient per se who makes the evaluation.

Regarding the psychological instruments that evaluate the deficit of insight from the clinical point of view, Villagrán[29] points out that it is important to consider that the verbal and non-verbal behavior of the patient does not always coincide with the grade of insight the patient has, even though the observer has to base his/her opinion on the inference based on these behaviors. Factors such as the patient's capacity to express their knowledge, the context in which it is given (desire to achieve hospital discharge or reduction of the medication, etc.) can distort the expression

Appendix 1	Marková y Berrios Insight Scale	
INSTRUCCIONES: **Lea cuidadosamente cada una de las siguientes afirmaciones e indique si está de acuerdo (SI) o en desacuerdo (NO).**		
1. Me siento diferente de lo normal en mí	SI	NO
2. A mí no me pasa nada	SI	NO
3. Estoy enfermo	SI	NO
4. La gente a mi alrededor parece diferente	SI	NO
5. No me siento parte de nada	SI	NO
6. Todo parece desorganizado	SI	NO
7. La mente no puede enfermar, sólo el cuerpo	SI	NO
8. Mis sentimientos hacia otras personas parecen ser diferentes	SI	NO
9. Me siento intranquilo	SI	NO
10. Tengo dificultades para pensar	SI	NO
11. En este momento, sufro problemas de nervios	SI	NO
12. Todo a mi alrededor es diferente	SI	NO
13. Estoy perdiendo el contacto conmigo mismo	SI	NO
14. Me cuesta estar tranquilo con gente que conozco	SI	NO
15. Me está pasando algo extraño	SI	NO
16. Quiero saber porqué me siento así	SI	NO
17. Me parece que no soy capaz de funcionar con normalidad	SI	NO
18. La enfermedad mental puede ocurrir en algunas personas de la población	SI	NO
19. Me parece que no tengo tanto control sobre mis pensamientos	SI	NO
20. No estoy enfermo pero estoy cansado	SI	NO
21. Siento que mi mente se está yendo	SI	NO
22. Estoy perdiendo el contacto con mi entorno	SI	NO
23. Ahora todo me parece mucho más claro que antes	SI	NO
24. Siento que están pasando cosas extrañas a mi alrededor	SI	NO
25. Sé que mis pensamientos son extraños pero no puedo remediarlo	SI	NO
26. Todo a mi alrededor parece diferente	SI	NO
27. Las cosas ya no tienen sentido	SI	NO
28. Mi problema principal es mi salud física	SI	NO
29. Siento que mi estado actual ha sido causado deliberadamente por algo	SI	NO
30. Pienso que necesito algún tipo de ayuda	SI	NO

of the true grade of insight achieved by the subject. In this sense, the Markova and Berrios insight scale offers the advantage that the evaluation is done with the interpretation per se of the patient. This scale recovers the view and the attribution of the changes experienced by the patient through the mental disease and also the form how the patient articulates them. This is based on a broad definition of insight, understanding it as a form of self-knowledge that the individuals have not only of the condition that affects them but also in terms of the conditions that affect their interaction with the world.

Only a small sample of 12 subjects was available to evaluate the test-retest reliability. This increases the standard error of the confidence interval, limiting the accuracy of the calculation. In spite of this, the elevated value obtained in the intraclass correlation coefficient (0.855) makes it possible to state that there is temporal reliability. Although the scale has been designed to reflect awareness of the possible changes experienced by the individual during the course of their psychotic disorder, this scale shows good *temporal* test-retest reliability, that is, in a given moment of the process. This datum was also observed in the original study.[14]

On the other hand, it could also be observed that this scale is easy-to-use and to understand for the patients, even in the acute phase. The application method is simple and rapid, so that the fatigue effect in the participants could be controlled.

Finally, the deficit of insight in psychosis as mental phenomenon is a complex fact and made up of several dimensions. Even though there are currently different instruments that have been successful in capturing some dimensions of this, there are still important questions about which dimensions may have a greater clinical implication. In accordance with Ruiz et al.,[19] although with imperfect instruments, it is worthwhile going deeper into the knowledge of the awareness of the disorder in psychosis. Taking an interest in what a person thinks about what is happening to him/her, what the sensation is of what is occurring to him/her, where to find an explanation of what is happening to him/her, supposes accepting subjectivity of all human experience. For Strauss,[30] the subjectivity is the way to approach the truly human in greater depth.

Among the limitations of this study, it can be indicated that the Markova and Berrios Insight scale has been used little in the field of the investigation. Thus, not much data exist to compare the results herein observed. On the other hand, with the current design, it was not possible to study other types of divergent validity or predictive validity. Research designs specifically aimed at evaluating these aspects should be planned in the future.

CONCLUSION

The Spanish version of the Markova and Berrios Insight scale presents good internal consistency, high test-retest reliability, convergent validity with other instruments that measure insight, and a four-factors structure that is very similar to that originally proposed. It is a simple and easy-to-apply scale. This scale should be studied in other populations for future investigations.

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