

# Psychometric analysis and adaptation of the Social Distance Scale (DS) in a Chilean sample

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## ABSTRACT

### Background

Stigma is one of the main obstacles to the social integration of people with mental disorders. The current investigation was designed to adapt Link's Social Distance Scale (SD) and study its psychometric properties. This scale assesses public attitudes towards people with mental disorders by means of a vignette followed by a set of questions.

### Method

A total of two samples by convenience were taken. The first sample consisted of 399 people and the second of 350. Reliability was assessed by means of the Cronbach's alpha coefficient. In order to validate its structure, an exploratory factor analysis of the first sample was conducted. Like wise, a confirmatory analysis was conducted with the second sample. Finally, the Pearson correlation coefficient was used to study the concurrent validity of the Orientation Scale to Social Dominance.

### Results

Results indicate that the final instrument has two factors "proximity and social interaction," composed by three items, and "intimacy and confidence," composed by two. Despite the fact that the samples had different educational level, the adjustment indexes obtained from the confirmatory analyses, as well as the internal consistency of the instrument, were appropriate.

### Discussion and conclusion

The existence of two factors can be related to the growth of the community mental health model in Chile. This has produced an impact on the amount of community centers and, therefore on the closeness on the subject. The results obtained support the possibility of using this instrument in different social groups.

**Key words:** Social stigma, mental disorders, validation studies.

## RESUMEN

### Antecedentes

El estigma es uno de los obstáculos principales para la integración social de las personas con trastornos mentales.

### Objetivo

Estudiar las propiedades psicométricas y adaptar la Escala de Distancia Social de Link (DS) en una muestra chilena. Ésta evalúa las actitudes públicas hacia personas con trastornos mentales mediante una viñeta seguida de un grupo de preguntas.

### Método

Se tomaron dos muestras por conveniencia: la primera estuvo compuesta por 399 personas y la segunda por 350. La confiabilidad se evaluó por medio del coeficiente alfa de Cronbach. Para valorar su estructura factorial, se realizó un análisis factorial exploratorio con la primera muestra y uno confirmatorio con la segunda. Finalmente, se utilizó el coeficiente de correlación de Pearson para estudiar la validez concurrente con la Escala de Orientación a la Dominancia Social.

### Resultados

Los resultados indican que el instrumento final posee dos factores "cercanía e interacción social", compuesto por tres reactivos, e "intimidad y confianza", compuesto por dos. A pesar de que las muestras tenían distinto nivel educativo, los índices de ajuste del modelo obtenido en el análisis factorial confirmatorio, así como la consistencia interna del instrumento, fueron adecuados.

### Discusión y conclusión

La existencia de dos factores puede estar relacionada con el crecimiento del modelo de salud mental comunitaria en Chile, lo que ha impactado en la cantidad de dispositivos sanitarios y por tanto en la cercanía que se tiene sobre el tema. Los resultados obtenidos avalan la posibilidad de usar este instrumento en distintos grupos sociales.

**Palabras clave:** Estigma social, trastornos mentales, estudios de validación.

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## BACKGROUND

Severe mental disorders cause a significant amount of personal and social suffering, not just because of their symptoms, but because of the stigma associated with them.<sup>1</sup> The term 'stigma' refers to the process of labeling, loss of status, and discrimination of a person who has an attribute assessed as negative by their community.<sup>2</sup> Among the direct consequences of stigma is the view that the subject has of themselves as inadequate, which generates feelings of shame and preferring isolation. It is also associated with severity of symptoms and adherence to treatment, increasing the risk of relapse.<sup>3</sup> Various investigations have shown how the presence of severe mental disorders are linked to discriminatory consequences in accessing employment, a place to live, and different types of significant social relationships such as partner relationships and friendships.<sup>4</sup>

There is abundant evidence of the barrier effect played by stigma in accessing healthcare services: people reject the use of mental health services in order to avoid prejudice and discrimination associated with having a psychiatric diagnosis. In Chile, the lack of knowledge around mental illnesses and stigma are the primary reasons why the population does not seek treatment.<sup>5</sup>

Stigma has been assessed based on the opinions of those affected and the general public. The former assessed the perception, experience, and self-esteem of people with SMDs (serious mental disorders).<sup>6</sup> The latter has studied the beliefs and attitudes of the population towards people with a psychiatric diagnosis.<sup>7</sup> This type of "public stigma" is relevant as it is related to discriminatory behaviors, based on prejudices and stereotypes towards this social group.<sup>8</sup>

Different types of instruments have been used to assess public stigma in adult populations: Among these are opinion scales about mental disorders, attributes, emotional reactions, and social distance.<sup>9</sup> The latter measures the will of the respondents to interact with a certain person determined in a specific type of relationship. These scales look at the respondents' indication of rejection or acceptance of a certain person after the presentation of a vignette. These instruments have the advantage of being short and they measure attitudes based on a hypothetical, but real, situation, which is a closer approach to the behavior that might occur when one person related to another who has a SMD. In general terms, they have an excellent internal consistency and have been used in various contexts.<sup>9</sup> Within the social distance scales, the most widely used has been the one by Link,<sup>10</sup> which provides a well-detailed hypothetical description (vignette) of a person with a severe mental disorder, in relation to which the respondents then have to respond to a series of questions.

The few studies on this that have been conducted in Chile indicate that there are prejudices and negative attitudes towards people with a psychiatric diagnosis. These

investigations have used either self-prepared or translated instruments, but none adapted to the national context.<sup>11,12</sup> If we consider that the modification of stigma towards people with SMDs is a relevant challenge from a public health perspective which would impact the lives of these people, it follows that instruments which allow that to be evaluated are extremely important.

## OBJECTIVE

The aim of this research was to adapt Link's Social Distance Scale and study its psychometric properties. The reliability, factorial structure, and concurrent validity of the scale were assessed with the Social Dominance Orientation scale.

## METHOD

### Sampling

Two non-probabilistic convenience samples were taken from the general population living in the greater Concepción area. People were recruited from areas with large public attendance and from various neighborhoods of the selected territory: bus stations, health center waiting rooms, municipalities, plazas, universities, and supermarkets. The first sample was made up of 399 people and the second of 350. The only inclusion criterion was to be aged between 18 and 65.

### Sample description

The distribution of men and women was similar in each sample, but women had an overall majority with more than 55% of the total. The median age was slightly higher in the second sample, at 41.9 years compared to 39.1 years in the first sample. Some 52.1% (208) of the first sample was married and living with a partner, and this percentage rose to 62% (217) in the second sample. In terms of education, the majority of subjects had a middle level of schooling, either complete or incomplete; however, the percentage was lower in the first sample (38.1%) than the second (59.4%). On the other hand, in the first sample there was a higher percentage of people with university education (29.6%) than in the second (4.3%). In both samples, the majority of people worked (68.8% and 63.1% respectively). When asked if a close family member had a severe mental disorder, there were similar percentages between the two samples: one was 19% and the other 17.1%. However, in the second sample there was a higher percentage of participants indicating having contact with that family member (78.3% vs. 68.4%). In terms of neighbors, the opposite was true: people in the first sample indicated having a higher frequency of contact with neighbors than the second (69.3% and 63.4%).

**Table 1.** Sociodemographic characteristics of the samples

Variable	First sample (n=399)	Second sample (n=350)
<b>Sex</b>		
Male	177 (44.4%)	155 (44.3%)
Female	222 (55.6%)	195 (55.7%)
Total	399 (100.0%)	350 (100.0%)
<b>Age</b>		
Median	39.13	41.91
Typ. dev.	12.57	12.57
Range	(18–65)	(18–65)
<b>Marital status</b>		
Married/co-habiting	208 (52.1%)	217 (62.0%)
Single	153 (38.3%)	89 (25.4%)
Widowed/separated	38 (9.6%)	44 (12.6%)
Total	399 (100.0%)	350 (100.0%)
<b>Level of education</b>		
No education	0 (0.0%)	1 (0.3%)
Basic	35 (8.8%)	46 (13.1%)
Middle	152 (38.1%)	208 (59.4%)
Technical	94 (23.5%)	80 (22.9%)
University	118 (29.6%)	15 (4.3%)
Total	399 (100.0%)	350 (100.0%)
<b>Years of schooling</b>		
Median	6.10	4.97
Typ. dev.	2.19	1.50
Range	(2–9)	(1–9)
<b>Current occupation</b>		
Student	46 (11.5%)	19 (5.4%)
Homemaker	45 (11.3%)	76 (21.8%)
Worker	274 (68.8%)	221 (63.1%)
Unemployed	17 (4.2%)	15 (4.3%)
Retired	17 (4.2%)	19 (5.4%)
Total	399 (100.0%)	350 (100.0%)
<b>Close relative with SMD</b>		
Close relative with SMD	76 (19.0%)	60 (17.1%)
Close relative without SMD	323 (81.0%)	290 (82.9%)
Total	399 (100.0%)	350 (100.0%)
<b>Contact with close relative</b>		
Maintains contact	52 (68.4%)	47 (78.3%)
Does not maintain contact	24 (31.6%)	13 (21.7%)
Total	76 (100.0%)	60 (100.0%)
<b>Neighbor with SMD</b>		
Neighbor with SMD	101 (25.3%)	71 (20.3%)
No neighbor with SMD	298 (74.7%)	279 (79.7%)
Total	399 (100.0%)	350 (100.0%)
<b>Contact with neighbor</b>		
Maintains contact	70 (69.3%)	45 (63.4%)
Does not maintain contact	31 (30.7%)	26 (36.6%)
Total	101 (100.0%)	71 (100.0%)

## Instruments

### *Social Distance Scale (SD)*

This instrument was developed by Link et al.<sup>10</sup> based on the Bogardus scale.<sup>13</sup> It assessed public attitudes towards people with severe mental disorders and it is composed of a brief vignette which shows the case of a person with a mental disorder, followed by seven items with Likert-type responses with five options ranging from 'don't agree at all' to 'totally agree'. The questions cover different situations which vary the degree of closeness with the affected person. Among these are being neighbors, friends, an employee, and a partner with a person with a SMD. In our study, a more general question about people's preparedness to converse with someone with an SMD was added to the original instrument, so the questionnaire was actually composed of eight items. Furthermore, a vignette was prepared about a person with schizophrenia which was adapted to the local context. The original questionnaire obtained a coefficient of reliability of  $\alpha=0.85$ .<sup>10</sup>

### *Social Dominance Orientation Scale (SDO)*

This scale is the original scale by Pratto, Sidanius, Stallworth, and Malle, adapted to the Chilean population.<sup>14</sup> It was used as an indicator of concurrent validity, as it presents a consistent correlation with discriminatory attitudes. The scale has two factors, each with eight items; opposition to equality and orientation to dominance. The Likert-type responses have seven options ranging from 'totally disagree' to 'totally agree'. It has a high internal consistency ( $\alpha=0.86$ ), with values of  $\alpha=0.79$  for the subscale 'opposition to equality' and  $\alpha=0.88$  for that of 'orientation to dominance'.<sup>15</sup>

## Sociodemographic data

In order to collect sociodemographic information, a brief questionnaire was prepared which asked information about each subject including age, sex, marital status, level of education, and work situation. It also asked about previous contact with people with severe mental disorders, whether family members or friends.

## Procedure

The translation of five questions of the SD conducted in Spain was used.<sup>16</sup> The other two questions were translated and retranslated (English-Spanish). The language was then adapted and an additional vignette was prepared based on a situation that was typical of the national context. Prior to its definitive application, the instrument was applied as a pilot to a sample of ten people whose information was not incorporated into the later analyses.

The application of the instruments was conducted by specially-trained psychology students. The participants were recruited as volunteers and they explicitly stated their

willingness to volunteer by signing an informed consent form. The majority answered the questionnaires in a self-applied manner. If the subject had difficulties in responding, the questions were applied by the interviewer. The application for the first sample was done between November and December 2011, and the second sample was done between December 2012 and January 2013.

### Statistical analysis

In order to evaluate the factorial structure, an exploratory factorial analysis was conducted on the first sample, whose solution was proven through a confirmatory analysis made on the second sample.

An iterative method was used in the exploratory factorial analysis in order to determine the number of possible initial factors to extract from the set of original items; Horn's Parallel Analysis was used as the procedure for this, based on a non-parametric resampling of 1,000 bootstrapping samples.<sup>17</sup> Once the number of factors was determined, a solution was generated using weighted least squares on the matrix of polychoric correlations as the factor extraction method, followed by a Promax oblique rotation.

Based on the initial factorial solution, the items which showed a coefficient of configuration equal to or greater than 0.30 in some of the factors were considered assigned to a factor, and they did not include the zero within the confidence interval of the non-parametric *bootstrapping* at 90% for the factor considered. If these two criteria were met by more than one factor, the item was assigned to the factor where its factorial load was greater if it at least duplicated the lower loads. Based on the items and factors resulting from the first phase, a new factorial solution was generated, repeating the process of factor extraction, rotation, and item/factor selection, until finding a stable solution.

The analyses of reliability were carried out using Cronbach's alpha coefficient. Concurrent criteria validity was estimated with Pearson's product-moment coefficient of correlation.

The information was coded and processed using the Stata 12, Mplus 7.0, and R 2.15.2 statistical packages.

## RESULTS

The exploratory factorial analysis gave two solutions. The Very Simple Structure (VSS) analysis,<sup>18</sup> showed a solution of one factor, whereas Horn's parallel analysis showed a solution of two factors. The solution based on one factor did not comply with the aforementioned criteria, and was re-used by the two-factor solution, which explains some 57% of the variance.

Factor 1, which we call "Closeness and social interaction" groups together items 2, 3, and 8, which express a will-

**Table 2.** Matrix of coefficients of configuration

Nº	Items	Factors	
		1	2
1	Would you work with a person like Juan?	0.44	0.33
2	Would you accept a person like Juan as your neighbor?	<b>0.82</b>	-0.05
3	Would you be friends with a person like Juan?	<b>0.93</b>	-0.15
4	If you had a home to let, would you rent it to a person like Juan?	0.30	0.50
5	If you had a business, would you give work to someone like Juan?	0.36	0.41
6	Would you have someone like Juan as a partner?	-0.14	<b>0.86</b>
7	If you have children, would you allow a person like Juan to take care of them?	-0.17	<b>0.87</b>
8	Would you feel comfortable conversing with someone like Juan?	<b>0.75</b>	-0.07

ingness to accept a relationship with a person with a SMD, in a gradient from closeness (friendships) through conversing with someone. Factor 2 corresponds to responses which indicate more trust and intimacy with the person, and is therefore called "Intimacy and trust". It is made up of items 6 and 7. A positive correlation was observed between both factors,  $r=0.645$  which indicates an attitude of acceptance towards people with SMDs related to establishing a relationship of trust and intimacy.

The two-factor model was proven through a confirmatory factorial analysis with the second sample of 350 people. The results of the confirmatory factorial analysis show a moderately good fit of the data to the model. Even if the absolute fit indicator of chi-squared shows that the data does not completely fit the model,  $\chi^2(4)=12.372$ ,  $p=0.0148$ , that is to be expected in terms of the sample size. The CFI (*Comparative Fit Index*) is 0.995, whereas the normalized chi-squared is 3.093, which is considered regular; on the other hand, the TLI (*Tucker-Lewis Index*) reaches 0.987, which is adequate, like the RMSEA (*Root Mean Square Error of Approximation*) which is 0.077.

Figure 1 shows the estimators for the model's parameters. It can be seen that all the correlations between the factors and the items are significant, the absolute value of all the loads being over the value of 0.5 recommended by Hair et al.<sup>19</sup>

For factor 1, the extracted variance is 0.64, with a construct validity of 0.94, whereas factor 2 presents an average extracted variance of 0.69 and a construct validity of 0.90, which represents a very good fit of the items to the factors.

**Table 3.** Indicators of fit of the confirmatory analysis

Indicator	Value
Goodness of fit test	$\chi^2(4) = 12.372$
Normalized chi-squared	3.093
RMSEA	0.077
CFI	0.995
TLI	0.987

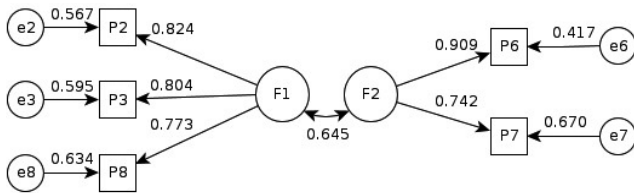


Figure 1. Estimators for the model's parameters.

### Reliability

The internal consistency of each of the factors reached Cronbach's alpha values of 0.82 for factor 1 and 0.75 for factor 2, and 0.78 for the total scale.

### Concurrent validity

Table 4 indicates the correlations between the two factors of the adapted SD and the SDO scale. As can be seen, all the correlations are negative and almost all are significant, with the exception of factor 2 of the SD and factor 2 of the SDO. The greatest correlation was between factor 1 of the SD, which is about close relationships and social interaction with people with SMDs, and factor 1 of the SDO, about opposition to equality.

## DISCUSSION AND CONCLUSION

The purpose of this investigation was to study the psychometric properties of the Social Distance Scale (SD), aimed at evaluating the general public's attitudes towards people with mental disorders. This instrument has the advantage of being brief, applicable to diverse populations beyond those in close contact with people with a psychiatric diagnosis, and based on questions about a real case, meaning its responses are closer to the behavioral intent of those interviewed. On the other hand, the diversity of samples used in the psychometric analysis and the convergence of its results is an indicator that gives greater validity to the use of the instrument in various social groups. In terms of reliability, the analyses indicate that the instrument reaches an acceptable level of consistency for use in the general population.

The factorial structure of the scale showed differences with the original instrument. The North American scale has

Table 4. Pearson's product-moment correlations between factors of the SD scale and the Social Dominance Orientation Scale (SDO)

	Factor 1 SDO	Factor 2 SDO	SDO Total
Factor 1 DS	-0.246***	-0.1585***	-0.258***
Factor 2 DS	-0.189***	-0.0937	-0.180***
DS Total	-0.260***	-0.155***	-0.265***

\*\**p* < 0,01; \*\*\**p* < 0,001.

one factor that groups together a set of items; in the present study, two factors were identified: "Closeness and social interactions" with three items, and "Intimacy and trust" with two. The eliminated items presented a crossed load that did not allow them to be reliably included in either of the factors. It is notable that these questions correspond to issues around work and home life; in other words, the openness of people with SMDs to social inclusion. On the other hand, questions that clearly belonged to one of the two factors are more related to a close and intimate interaction with the affected person. Appearing in the local context to favor the inclusion of these people is not exclusively associated to a type of relationship (more or less personal) but rather it can be expressed interchangeably in any of them. On the other hand, there are differences between close relationships and those of trust and intimacy, given by the configuration of these two factors.

The difference of these dimensions may be associated with an increase in the availability of mental health provisions in Chilean communities, derived from the reinforcement of the community mental health model in the past decade.<sup>20</sup> In this context, people are more informed about the issue and, as a product of this increase, they may tend to see contact with people with SMDs as more possible, which could lead to establishing a finer differentiation of the type of relationship in which they would be prepared to get involved with a mental health program user.

There were certain sociodemographic differences between both samples, which could have influenced the AFC indicators not being higher. The first sample had a higher level of education; the group of people with technical and university education was more than 50% of the total, while in the second group this fell to 25%. Various research has shown that education is a variable which is consistently associated with attitudes towards people with mental disorders. More educated subjects tend to have more favorable attitudes than people with less,<sup>21-23</sup> a difference which may influence the diversity of the groups' attitudes, and it is therefore more difficult to achieve an exact fit between the two. Due to this, the levels of fit obtained are appropriate, and indicate the possibility of using the instrument in various social groups.

Given that there is evidence that the level of contact with people with a mental disorder influences attitudes towards such people,<sup>21,24,25</sup> this was asked by this variable. It is notable that although there is a minority percentage of people who have a family member or neighbor with a SMD, those who do mostly have more contact with them.

A convergence was observed between almost all the dimensions evaluated by the SD with the SDO values. The greatest correlation was obtained between the totals of both scales, whenever authoritarian and rejection attitudes towards certain social groups are negatively associated with the establishing of close and trusting relationships with such people.

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One of the limitations of the study is its non-probabilistic sampling, which necessitates caution in generalizing the results. On the other hand, other reliability indicators were not considered, in particular the *test-retest* reliability which allows the temporal stability of the measures to be taken into account.

In the future, it would be necessary to be able to carry out investigations which explore more intensively and deeply the way in which stigma is presented in the national public. According to the results of other studies in the area, there are negative attitudes in Chile towards people with these characteristics. This would allow progress in preparing programs which reduce these attitudes and as such favor the social inclusion of people with SMDs.

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### Conflict of interest

The authors do not declare any conflicts of interest.

### REFERENCES

- Arboleda-Flórez J. Stigma and discrimination: an overview. *World Psychiatry* 2005;4:8-10.
- Link B, Phelan J. Conceptualizing stigma. *Annual Review Sociology* 2001;27:363-385.
- Livingston JD, Boyd J. Correlates and consequences of internalized stigma for people living with mental illness: A systematic review and meta-analysis. *Soc Sci Med* 2010;71:2150-2161.
- Sharac J, Mccrone P, Clement S, Thornicroft G. The economic impact of mental health stigma and discrimination: A systematic review. *International J Epidemiology Psychiatric Sciences* 2010;19:223-232.
- Vicente V, Kohn R, Saldivia S, Rioseco P. Carga del enfermar psíquico, barreras y brechas en la atención de salud mental en Chile. *Rev Med Chil* 2007;135:1591-1599.
- Brohan E, Slade M, Clement S, Thornicroft G. Experiences of mental illness stigma, prejudice and discrimination: a review of measures. *BMC Health Services Research* 2010;10:80.
- Corrigan PW, O'Shaughnessy JR. Changing mental illness stigma as it exists in the real world. *Australian Psychologist* 2007;42:90-97.
- Corrigan PW, Shapiro JR. Measuring the impact of programs that challenge the public stigma of mental illness. *Clin Psycho Rev* 2010;30:907-922.
- Link B, Yang L, Phelan J, Collins P. Measuring mental illness stigma. *Schizophr Bull* 2004;30:511-541.
- Link B, Cullen FT, Frank J, Wozniak JF. The social rejection of former mental patients. Understanding why label matter. *American Sociological Review* 1987;54:100-123
- Chuaqui J. Esquizofrenia, estigma e inserción laboral. *Psiquiatría Salud Mental* 2002;1:4-11.
- Zárate C, Ceballos M, Contardo M, Florenzano R. Influencia de dos factores en la percepción hacia los enfermos mentales; contacto cercano y educación en salud. *Rev Chil Neuro-Psiquiat* 2006;44:205-214.
- Bogardus ES. Social distance and its origins. *J Applied Sociology* 1925;9:216-226.
- Pratto F, Sidanius J, Stallworth L, Malle B. Social dominance orientation: A personality variable predicting social and political attitude. *J Pers Soc Psycho* 1994;67:741-763.
- Cárdenas M, Meza P, Lagues K, Yáñez S. Adaptación y validación de la Escala de Orientación a la Dominancia Social (SDO) en una muestra Chilena. *Universitas Psychologica* 2010;9:161-168.
- Senra-Rivera C, De Arriba-Rossetto A, Seoane-Pesqueira G. Papel de la experiencia en la aceptación vs. Rechazo del paciente con esquizofrenia. *Revista Latinoamericana Psicología* 2008;40:73-83.
- Thompson B. Exploratory and confirmatory factor analysis. Washington, DC: American Psychological Association; 2005.
- Revelle W, Rocklin T. Very simple structure: An alternative procedure for estimating the optimal number of interpretable factor. *Multivariate Behavioral Research* 1979;14:403-414.
- Hair J, Black W, Babin B, Anderson R. Multivariate data analysis. Séptima edición. New Jersey: Prentice-Hall; 2009.
- Minoletti A. Plan nacional de salud mental en Chile. 10 años de experiencia. *Rev Panam Salud Pública* 2005;18:346-358.
- Angermeyer M, Dietrich S. Public beliefs about and attitudes towards people with mental illness: a review of population studies. *Acta Psychiatr Scand* 2006;113:163-179.
- Grausgruber A, Meise U, Katschnig H, Schöny W et al. Patterns of social distance towards people suffering from schizophrenia in Austria: a comparison between the general public, relatives and mental staff. *Acta Psychiatr Scand* 2007;115:310-319.
- De Toledo E, Blay SL. Community perception of mental disorders. A systematic review of Latin American and Caribbean studies. *Soc Psychiatry Psychiatr Epidemiol* 2004;39:955-961.
- Hinshaw S. Stigma and mental illness: Developmental issues and future prospects. En: Cicchetti D, Cohen D (eds). *Developmental psychopathology. Risk, disorder, and adaptation*. Vol 3. New Jersey: John Wiley & Sons; 2006.
- Leiderman EA, Vazquez G, Berizzo C, Bonifacio A et al. Public knowledge, beliefs and attitudes towards patients with schizophrenia: Buenos Aires. *Soc Psychiatry Psychiatr Epidemiol* 2011;46:281-290.