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# Reliability study of the translation into Spanish of the PRIME Screen Questionnaire for Prodromic Symptoms

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**Introduction.** A fundamental precondition for early intervention in schizophrenia is accurate detection of prodromal states, that is, sign and symptom constellations that predict the onset of psychosis in persons with no prior background. Several structured interviews have been designed for the detection of prodromal subjects.

**Objective.** To translate and determine the reliability of the PRIME Screen in an adolescent community sample in México City.

**Method.** A total of 532 adolescents of a technical-industrial educational center of México City were included for the study. All the subjects were administered the PRIME Screen Questionnaire of Prodromal Symptoms.

**Results.** A total of 98 subjects (18.4%) reported one or more prodromal symptoms. The results of the factorial analysis showed that the PRIME Screen questionnaire is conformed by three factors that explained 59.3% of the variance. Internal consistency of the instrument was of 0.88.

**Discussion.** Our results on the exploratory factor analysis show that the items of the questionnaire are grouped into three main areas called: *a)* alteration of setting; *b)* sensorial-perceptual abnormalities, and *c)* alterations of self-skills. The Prodromal Symptoms Screen Questionnaire is an instrument with adequate clinimetric behavior that may be effective to conduct community-wide screening of adolescents for prodromal symptoms.

**Key words:**  
Psychosis. Schizophrenia. Prodromic. Early intervention.

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## Traducción al español y confiabilidad del Cuestionario de Tamizaje para Síntomas Prodrómicos (PRIME Screen)

**Introducción.** Una de las condiciones fundamentales para la intervención temprana en la esquizofrenia es la

detección certera de los estados prodrómicos, entendido como la constelación de signos y síntomas que predicen el inicio de una psicosis en personas sin antecedentes de cuadros psicóticos. Se han desarrollado diversas entrevistas diagnósticas para la detección de sujetos con síntomas prodrómicos.

**Objetivo.** Traducir el Cuestionario de Tamizaje de Síntomas Prodrómicos (PRIME Screen) y obtener su confiabilidad en una muestra comunitaria de adolescentes de la Ciudad de México.

**Método.** Se incluyeron un total de 532 adolescentes de un centro de educación tecnológica industrial de la Ciudad de México. A todos los sujetos se les aplicó el Cuestionario de Tamizaje de Síntomas Prodrómicos.

**Resultados.** El 18,4% (n=98) fueron clasificados como sujetos con presencia de uno o más síntomas prodrómicos. El análisis factorial del instrumento arrojó tres factores que explican el 59,3% de la varianza. La consistencia interna global del instrumento fue de 0,88.

**Discusión.** Nuestros resultados sobre el análisis factorial exploratorio muestran la agrupación de los reactivos del instrumento en tres áreas principales denominadas como: *a)* alteración del entorno; *b)* alteraciones sensorio-perceptivas, y *c)* alteración de habilidades propias. El Cuestionario de Tamizaje de Síntomas Prodrómicos es un instrumento con un adecuado comportamiento clinimétrico que puede ser efectivo para la realización de tamizajes de síntomas prodrómicos en población adolescente.

**Palabras clave**  
Psicosis. Esquizofrenia. Prodrómico. Intervención temprana.

## INTRODUCTION

Schizophrenia is a chronic disease accompanied by functional incapacity or progressive pattern of global functioning deterioration of the individual whose consequences are also reflected in society. As the different treatments existing for the disorder only decrease or control some of its manifestations, several investigations have focused on the

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study of early intervention as a way to delay the disease onset, decrease its severity, or even, in some individuals, be able to avoid its manifestation<sup>1</sup>. In addition, early intervention offers the possibility of reducing personal and psychosocial deterioration associated with the onset of the first psychotic episode manifestation<sup>2-4</sup>.

The above entails several ethical and research questions which are currently being dealt with in the international scientific literature<sup>5-8</sup>. However, one of the fundamental conditions for early intervention is accurate detection of the prodromal conditions, understood as signs and symptoms constellation that predict the onset of psychosis in persons with no background of psychotic pictures<sup>5</sup>.

Diagnostic systems have been developed to identify individuals at high risk of manifesting a psychotic episode in a 1 year period<sup>7,8</sup>. Based on these criteria, several diagnostic interviews have been suggested to detect subjects with prodromal symptoms, standing out among them the Comprehensive Assessment of At Risk Mental States (CAARMS)<sup>7,9</sup>. After, these criteria were made operational and called The Criteria of Prodromal Syndromes (COPS)<sup>10,11</sup>. The Structured Interview for Prodromal Syndromes (SIPS) arose from these<sup>5,10</sup>. This interview has shown adequate clinimetric values with interrater reliability of 0.93 and transition to psychosis rate of 54%<sup>10,11</sup>.

However, these studies were conducted in subjects who had pre-psychotic symptoms, that alert the family, teachers or health care professionals<sup>9,12-14</sup>. Even when in many cases, the subjects are in a prodromal phase, we are faced with an advanced stage of the symptoms. Thus, these subjects have a very elevated risk of transition to a frank psychosis<sup>15</sup>. Due to this, the Yale University research group (PRIME Research Clinic, Prevention through Risk Identification, Management and Education) developed the Prodromal Symptoms Screen questionnaire (PRIME Screen)<sup>16</sup>, in order to be able to identify those subjects who are in the earliest stages of the prodromal phase by means of these community studies.

This current study aimed to translate the Prodromal Symptoms Screen Questionnaire and obtain its reliability in a community sample of adolescents of the City of Mexico.

## MATERIAL AND METHODS

The subjects included in this study of translation and reliability come from a Technical-Industrial Educational Center of the City of Mexico. A total of 532 adolescents were included. Of these, 49.6% (n=264) were men and 50.4% (n=268) women, with an average age of  $16.6 \pm 1.45$  years (range: 15-23 years). A total of 60.7% (n=323) were studying the first year of technical education and 39.3% (n=209) the second year of it.

Once authorization was requested from the original authors of the Prodromal Symptoms Screen Questionnaire,

the translation-back translation procedure of the instrument was made. Once the final version was obtained, it was applied to a group of 15 adolescents to determine their understanding of the concepts and questions of the questionnaire. After the questionnaire was adapted, the data was obtained in the technical-industrial educational center.

All the subjects were administered the Prodromal Symptoms Screen Questionnaire. This is a 12 item instrument answered on a 6 point frequency scale. The items question the subject on his/her personal experience in the last year in relationship to sensorial, psychological, emotional and social experiences. The items are graded on an ordinal scale from 0 to 6 in which each number corresponds to «totally disagree», «disagree», «somewhat disagree», «I am not sure», «agree somewhat», «agree» and «totally agree». In accordance with that proposed by the original authors of the scale, a subject had prodromal symptoms when any of the items had a score of 6 (totally agree).

## STATISTICAL ANALYSIS

The demographic and clinical characteristics were described with frequencies and percentages for the categorical variables and with means and standard deviations (SD) for the continuous variables. An exploratory factorial analysis was developed by analyzing the principal components with equamax rotation to determine the instrument structure. Threshold of the eigen values was established at a score equal to or greater than 1 as extraction criteria. Equamax rotation was selected because clinically the subject could have several symptoms concurrently. The items whose communality were greater than 0.40 were included in the factors while those less than 0.40 were excluded from the analysis. Internal consistency of the instrument was measured by Cronbach's alpha.

## RESULTS

A total of 18.4% (n=98) of the entire sample were classified as subjects with the presence of one or more prodromal symptoms in accordance with the grading format of the original scale (any items graded with 6) while 81.6% (n=434) had no prodromal symptoms.

The factorial analysis of the instrument showed 3 factors that accounted for 59.3% of the variance. The results of the principal component matrix obtained from the factorial analysis are shown in table 1.

Internal global consistency of the instrument was 0.88. Factor 1 called «alteration of setting» had a Cronbach's alpha of 0.83, followed by factor 2, «sensorial-perceptual abnormalities» with an alpha of 0.71 and finally factor 3 «alteration of self-skills» with Cronbach's alpha of 0.69.

## DISCUSSION

The present study reports the first results on the clinimetric properties of the Prodromal Symptoms Screen Questionnaire in a community sample of adolescents of the City of Mexico.

The instrument was shown to have adequate consistency (0.88) and in each one of the three areas in which the items were grouped ( $>0.65$ ). Our results on the exploratory factorial analysis showed that the instrument items were grouped into three main areas. In accordance with their content, we proposed that they be classified in the following way:

- *Alteration of setting factor.* Made up by six items that measure the aspects related with the subject's ability to determine the truthfulness of the events in his/her setting, the intentions of those persons in the surrounding and his/her behavior based on this/her beliefs.
- *Sensorial-perceptual abnormalities.* This factor groups the items that evaluate the presence of perception disorders, specifically in terms of auditory hallucinations and imminent sensation of losing self-control.
- *Alteration of self-skills.* Made up of three items that assess the possibility of having powers, talents or special abilities, that are outside of that normally expected.

After administering the questionnaire, it was observed that 18.4% of the adolescents interviewed were identified as «potentially prodromal» subjects, a finding similar to that observed in other screening studies in the student population<sup>13</sup>. Thus, it may be used to conduct community studies to detect prodromal symptoms. However, it is important to stress that this questionnaire is not a diagnostic instrument, so that it would be necessary to conduct predictive validity studies of the instrument through a structured interview.

Currently, The Structured Interview for Prodromal Syndromes (SIPS)<sup>5,10</sup> is being administered to subjects classified as «potentially prodromal» to obtain sensitivity and specificity data of the Prodromal Symptoms Screen Questionnaire.

The results of the present study show that the Prodromal Symptoms Screen Questionnaire is an instrument with adequate clinimetric behavior, that may be effective to conduct screenings of prodromal symptoms in adolescent population. This way of evaluation makes it possible to identify those subjects who are in the early stages for the manifestation of a psychotic disorder. By doing so, the intervention may be made before the prodromal symptoms have alerted those in the individual's setting.

**Table 1** Factorial loads of the Prodromal Symptoms Screen Questionnaire-Equamax

Items	Factors		
	Alteration of setting	Sensorial-perceptual abnormalities	Self-skill alterations
I have had the experience of doing things in a different way from others due to my superstitions	0.49		
I wonder if people plan to hurt me or if are going to hurt me	0.59		
I sometimes believe that my mind «is playing tricks on me or deceiving me»	0.59		
At times, I have become confused as I do not know if something is alive or I perceive it as real or it is only a part of my imagination	0.65		
I feel that there is something that interrupts or controls my thoughts, feelings or actions	0.69		
I think that rare or uncommon things occur that I cannot explain	0.71		
I have had the experience of hearing things or the voice of a person(s) whispering or speaking to me when there is no one near me		0.47	
I believe that I have heard my own thoughts aloud		0.52	
I worry that I «am going crazy»		0.87	
It is possible that other people can read my mind or I can read the mind of others			0.69
I believe I can predict the future			0.75
I believe I have special or supernatural powers, besides my own talents			0.79
Eigen value	5.2	1.12	1.05
Variance (%)	24.8	19.0	15.5

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