Interrater reliability of the Spanish version of Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL)

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Introduction. The K-SADS-PL diagnostic interview is useful for the cross-sectional and longitudinal evaluation of psychopathology in children and adolescents. The objective of this article was to describe the interrater reliability of the Spanish version of the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL).

Method. The interview was translated, back-translated and adapted to Spanish. Forty psychiatric outpatients (aged 6 to 17 years) were evaluated. The interviews were videotaped and scored by three independent raters. All of them included both the child's and parent's interview. Interrater reliability was obtained for affective, anxiety and conduct disorders using the Cohen's kappa coefficient.

Results. Kappa coefficients were between the good and excellent range for present and lifetime disorders (major depressive disorder $\kappa = 0.76$, any anxiety disorder $\kappa = 0.84$, attention deficit hyperactivity disorder $\kappa = 0.91$ and conduct disorder $\kappa = 1$).

Conclusion. The Spanish version of the K-SADS-PL is a reliable instrument for the assessment of psychopathology in children and adolescents.

Key words:
K-SADS. Diagnostic interview. Pscychopathology. Children. Adolescents. Reliability.

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Estudio de fiabilidad interevaluador de la versión en español de la entrevista Schedule for Affective Disorders and Schizphrenia for School-Age Children-Present and Lifetime version (K-SADS-PL)

Introducción. La entrevista diagnóstica K-SADS-PL constituye un instrumento adecuado para evaluar la psicopatología de niños y de adolescentes transversal y longitudinalmente. El objetivo de este trabajo fue determinar la fiabilidad interevaluador de la versión en español de la entrevista K-SADS-PL.

Método. Se realizó la traducción al español, retraducción al inglés y adaptación de la entrevista. Se evaluaron 40 pacientes de 6 a 17 años que acudieron a tres instituciones públicas de atención psiquiátrica. Las entrevistas a los pacientes y sus padres se videograbaron y calificaron por tres evaluadores independientes. Se obtuvieron los coeficientes kappa para la fiabilidad interevaluador.

Resultados. Se obtuvieron coeficientes kappa de buenos a excelentes para trastorno depresivo mayor $\kappa = 0.76$, cualquier trastorno ansioso $\kappa = 0.84$, trastorno por déficit de atención con hiperactividad $\kappa = 0.9$ y trastorno disocial $\kappa = 1$.

Conclusiones. La versión en español de la entrevista K-SADS-PL es un instrumento fiable para diagnosticar la psicopatología de niños y adolescentes.

Palabras clave:
K-SADS. Entrevistas diagnósticas. Psicopatología. Niños. Adolescentes. Fiabilidad.

INTRODUCTION

Diagnostic interviews are instruments created for the evaluation of psychopathology. Included among the advantages that using these instruments offer are decrease in variability in collection of the information and allowing the patients and his/her parents to participate in an integral evaluation of the patient's emotions and conducts. Semistructured interviews offer the clinician a general and flexible guideline to ask questions and record the information obtained, making it possible to establish the diagnosis and study the comorbidity[1]. Elaboration of semistructured interviews in child psychiatry has been one of the research lines in the last two decades most developed. Reliability studies for diagnosis in psychiatry have used increasingly stricter methods[2,3]. Interrater, interinformant and temporal reliability studies have been performed with different clinical instruments, as, for example, the Diagnostic Interview Schedule for Children (DISC)[4], the Interview Schedule for Chil-

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dren (ISC)[5,6] and in the case of instruments created in Spanish, the Semistructured Interview for Adolescents (SIA)[1]. Use of these instruments in Spanish speaking countries has been limited because there were no validity and reliability studies of the versions in Spanish of the former and, in the case of the latter, due to the inclusion of a small number of diagnostic categories.

The Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS) interview was originated during the early years of the 1980's, after the results of the study for the Schedule for Affective Disorders and Schizophrenia (SADS) for adults[7] were published. There are two versions of the K-SADS that incorporate present and lifetime data. The most recent clinimetric research of this instrument, the K-SADS-PL, combines both. The K-SADS-PL interview has advantages over previous versions, offering the possibility of coding the number and duration of previous episodes, evaluating functioning disorders related with specific diagnoses and assessing global functioning of the interviewed subject with the Children's Global Assessment Scale (C-GAS)[8]. It also provides information on development history, family history and subject's health conditions[9]. These characteristics have converted the K-SADS-PL into an instrument that is widely used by clinicians and investigators[10-12]. The interview has been translated into several languages[13,14], showing adequate validity and reliability[15,16]. Up to now, this is the first report of the interrater reliability characteristics of this instrument's Spanish version.

The objective of this study was to obtain interrater reliability of the semistructured K-SADS-PL interview in Spanish.

METHOD

Sample characteristics

The sample was composed of children and adolescents who came to three mental health care institutions in Mexico City: the Adolescent Clinic of the National Institute of Psychiatry, the Child Psychiatry Hospital and the Department of Medical Psychology, Psychiatry and Mental Health of the Medical School of the National Regional University of Mexico (UNAM). The first two institutions receive patients from open population and by referral from other health sites in the Country. The latter sees students from high schools and professional studies of the UNAM in Mexico City.

The sample initially included 24 children and 45 adolescents (n = 69). Their ages ranged from 6 to 17 years, with an age of 13.1 ± 2.8 years and average schooling of 6.9 ± 2.3 years. The patients and their parents gave their informed consent to participate in the study, according to the indications of the ethics committee of the participating institutions.

The interviewers were psychiatrists and child psychiatrists certified by the Mexican Council of Psychiatry who worked in the participating institutions. Each one of them had a principal investigator, who supervised the interview technique and quality of its recording.

Description of K-SADS-PL

The K-SADS-PL is a semistructured diagnostic interview designed to collect information provided by the child or adolescent, their parents and other data sources such as the teachers, grandparents, other physicians, etc. It includes axis I diagnoses according to the Diagnostic and Statistical Manual of Mental Disorders, DSM-III-R[17] and DSM-IV[18]. The diagnoses are coded as definitive, probable (when 75 % of the diagnostic criteria of a condition are met and there is functional deterioration) or absent. It is made up of the following sections: introductory interview, diagnostic screening interview, diagnostic supplements (affective disorders, psychotic disorders, anxiety disorders, conduct disorders, substance abuse and other disorders). The Children's Global Assessment Scale (C-GAS) is included in the screening interview. Supplements for the different diagnoses are only applied when at least one of the main symptoms evaluated in the screening is definitive. When the patient is a young child, the parents should be interviewed first and then the patient. In the case of adolescents, the adolescents must be before their parents. Both the parent and the child/adolescent should be evaluated by the same interviewed. This interviewer establishes the best clinical estimate for each present and past symptom based on the data obtained from both informants. The clinician determines if the symptom is absent, probable or definitive in a summary[9].

Procedure

Two psychiatrists were trained in the application of the Pittsburgh University version of the K-SADS-PL (REU and FPO). The interview was translated and backtranslated to assure that nothing was lost in the sense of the question and was adapted to the local language of children and adolescents by three certified clinicians. The final version in Spanish was reviewed by one of the authors of the version published in English. The remaining interviewers were trained in the application of the interview, reaching 80 % agreement for the diagnoses before evaluating the interrater reliability. No interview of the patients evaluated during the training was incorporated into the sample.

Evaluation of interrater reliability

The interviews were videotaped and exchanged. Each interview was scored by at least three raters who were blind to the scoring of the others. Those interviews with faults in technique, that were incomplete or with significant audio-video faults were excluded by consensus among the principal investigators.

Statistical analysis

Descriptive statistics was used for the clinical and demographic variables. The Cohen kappa coefficient (κ) was used for the diagnoses in which there were five or more subjects[19]. The kappas for the grouped diagnoses in depression and anxiety for any depressive disorder (major depressive disorder, major depressive disorder with psychotic symptoms and dysthymic disorder) as well as any anxious disorder (generalized anxiety disorder, separation anxiety, simple phobia) were also calculated. The diagnoses of dimensional form in internalized conditions that include depressive and anxious disorders and in externalized conditions that include attention deficit hyperactivity disorder, oppositional defiant disorder and conduct disorder were grouped[20].

Excellent reliability was considered to exist when the Kappa coefficient value was greater than 0.75, good if it was 0.59 to 0.74, moderate from 0.40 to 0.58 and poor if it was less than 0.40[21].

RESULTS

Administering the interview to the patients and their parents required 2 to 4 hours. According to the reports of the clinician who conducted the interview, the interviewed subjects had no difficulty in understanding the instrument. Fifteen out of the sixty nine patients were excluded due to problems in the interview and 14 because their interviews had only been scored by two raters. The final analysis included 40 patients (120 evaluations).

The characteristics of the patients obtained in the introductory interview are shown in table 1. The sample included children and adolescents with great social adversity and poor school performance. A total of 76 % reported academic or conduct problems in the school and almost half of them lived alone with one of their parents or in adoptive homes besides reporting high abuse frequency. The most common diagnoses were major depressive disorder (MDD) (55 %), oppositional defiant disorder (ODD) (45 %), attention deficit hyperactivity disorder (ADHD) (37.5 %), dysthymic disorder (DD) (35 %), generalized anxiety disorder (GAD) (22.5 %) and conduct disorder (CD) (22.5 %). Most of the patients had more than one diagnosis (average: 2.74 ± 1.29; range: 1 to 6). The results of the kappas calculated for the diagnoses selected and groups are shown in table 2.

Table 1 Demographic characteristics and backgrounds of the sample

Characteristics	%
Male gender	74
Living with	
Both parents	57
One parent	37
Adoptive homes	6
Problems in school	76
Abuse background	
Physical	23
Psychological	17
Sexual	10
Medical disease	20
Mean age (SD)	13.1 (2.8)
Mean schooling (SD)	6.9 (2.3)
Mean scoring of C-GAS (SD)	57.2 (17)

Frequencies in percentages and averages obtained of the introductory interview variables of the K-SADS-PL.

DISCUSSION

There are few diagnostic instruments for children and adolescents in Spanish whose validity and reliability characteristics have been reported. This article presents the information obtained in the interrater reliability study of the K-SADS-PL interview as part of its validity and reliability studies (interrater, temporal and interinformants). The fact that the sample was obtained in different clinical scenarios allowed the investigators to include patients from different economic levels with different school grade (from primary to high school). Age, gender and schooling of this population are very similar to the demographic variables of the samples used in other validation studies[9,16]. The information obtained in the introductory interview allowed the interviewers to become familiar with the patient's background and

Table 2 Interrater reliability for the different diagnoses

Diagnosis	N	k
Major depressive disorder	22	0.76
Dysthymic disorder	14	0.77
Any depressive disorder	40	0.84
Generalized anxiety disorder	9	0.53
Any anxious disorder	15	0.84
Any internalized disorder	55	0.84
Attention deficit hyperactivity disorder	15	0.91
Oppositional defiant disorder	18	0.71
Conduct disorder	9	1
Any externalized disorder	43	0.87

Kappa values of the main diagnoses found in the sample.

present circumstances that could influence the presence of psychopathology and their global functioning. It also allowed the patients to adapt to the interview procedure and format.

The training procedure prior to the study of interrater reliability permitted the investigation team to have homogeneous criteria to make the interview. In spite of this, several interviews were rejected as they did not fulfill the necessary quality criteria, either in the interview technique or in the recording quality. The most frequent errors in the interview technique were omission of questions on the presence of a certain symptom in the past, not evaluating the frequency or severity or the incomplete application of the screening interview. Even though the time to complete the interview was from 2 to 4 hours, both the raters and the patients reported that the instrument was accessible in its language and easy to answer.

The videotaping technique was used in previous versions of the K-SADS, reporting kappa coefficients between 0.64 and 0.89[22,23]. This shows the utility of this technique to evaluate interrater reliability.

The sample size was greater than that used in the validation of the instrument's original version[9]. It was calculated according to the prevalence of the main psychiatric diagnoses reported in children and adolescents. The diagnoses obtained in this sample may be considered representative of the most frequent psychopathology in children and adolescents of Mexico City[24,25].

Interrater reliability was good or excellent for most of the diagnoses analyzed. The diagnoses of conditions with chronic evolution, such as the ADHD and ODD, had good to excellent kappa values. This is especially important, given the high frequency of these conditions in the child and adolescent population. The lowest kappa score was recorded for the generalized anxiety disorder. Other K-SADS-PL versions also reported lower kappa values for the anxious values[16]. This may be due to the greater phenomenological variability that this condition can be described with or because some symptoms are a co-expression of another diagnosis. The kappas obtained after grouping the diagnoses confirm the utility of the interview for detection of the most frequent internalized and externalized conditions in this age group.

The scoring of C-GAS reflected poor psychosocial functioning, consistent with the data obtained in the initial interview regarding the social adversity faced by the patients.

In conclusion, the information obtained from the Spanish version of the K-SADS-PL in this population provides reliable data on the psychopathology and psychosocial functioning in an accessible way for clinicians and investigators, permitting its use in research and in the daily clinical practice.

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