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Evaluation of suicide risk in children: psychometric properties of the Spanish version of the Risk of Suicide Questionnaire (RSQ)

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Introduction. Risk of Suicide Questionnaire (RSQ) is a useful self-administered tool to assess suicide risk among children.

Objective. The aim of this study was to translate RSQ into Spanish and determine its validity and reliability among Mexican children.

Method. After a culturally sensitive RSQ items translation, all fifth and sixth grade elementary school students of both genders, from a private educational Institution in Guadalajara (Mexico) whose parents gave informed consent to participate, completed the RSQ Spanish version and the Beck's Depression and Hopelessness Inventories. The parents of the children who had a suicide risk were contacted and invited to come with their child to a subsequent appointment for evaluation and free treatment in the Jalisciense Mental Health Institute. For correlation analysis, item number 9 related to suicide was eliminated.

Results. A total sample of 88 students participated. Their mean age was 11.23 ± 0.78 years old, and 55.7 % were male. Mean total scales were as follows: RSQ: 8.3 ± 9.05 ; depression: 7.4 ± 6.7 , and hopelessness: 18 ± 3.3 . Cronbach's alpha for RSQ was 0.68. Intra class coefficients correlations between RSQ and depression and hopelessness inventories were 0.74 and 0.52, respectively. Only one of the 56 minors considered to have a certain suicide risk ($n=56$) came to a professional evaluation with their parents.

Conclusions. The Spanish version of the RSQ showed adequate validity and reliability in Mexican students.

Key words:

Suicide. Children. Measures. Risk of Suicide Questionnaire (RSQ).

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Evaluación del riesgo suicida de niños: propiedades psicométricas de la versión en castellano del Cuestionario de Riesgo Suicida (RSQ)

Introducción. El Cuestionario de Riesgo Suicida (*Risk of Suicide Questionnaire*, RSQ) es una herramienta de auto-aplicación útil para evaluar el riesgo suicida en niños.

Objetivo. El presente estudio quiere determinar la validez y fiabilidad de su versión en español en población infantil mexicana.

Método. Se llevó a cabo la traducción y adaptación al español del RSQ y se aplicó a estudiantes mexicanos de quinto y sexto grado de primaria de ambos sexos, cuyos padres aceptaron que participaran en el estudio, junto con los Inventarios de Depresión (BDI) y la Escala de Desesperanza de Beck (EDB). Los padres de los niños que mostraron riesgo suicida fueron invitados a que acudieran con el menor a una cita subsiguiente de evaluación y tratamiento gratuitos en el Instituto Jalisciense de Salud Mental. Se eliminó el ítem 9 del BDI por ser idéntico a uno del RSQ para análisis de correlación correspondiente.

Resultados. Participaron un total de 88 estudiantes, con una edad promedio de $11,23 \pm 0,78$ años, 55,7 % de los cuales eran hombres. La puntuaciones promedio en las escalas fueron: RSQ: $8,3 \pm 9,05$; depresión: $7,4 \pm 6,7$, y desesperanza: $18 \pm 3,3$. El índice de consistencia interna del RSQ fue 0,68. Los coeficientes de correlación intraclase entre las puntuaciones totales del RSQ y los inventarios BDI y desesperanza fueron: 0,74 y 0,52, respectivamente. Sólo uno de los 56 menores que mostraron riesgo suicida fue llevado por sus padres para el seguimiento que se les ofreció.

Conclusiones. La versión en español del RSQ demostró validez y confiabilidad aceptables en estudiantes mexicanos.

Palabras clave:

Suicidio. Niñez. Evaluación. Cuestionario de Riesgo Suicida (RSQ).

INTRODUCTION

Suicide may be defined as intentionally self-inflicted death. Although the prevalence of suicide is highly variable

among countries, it is one of the first three causes of death in males between 15 and 34 years of age in many countries, and second cause of death among adolescents in the United States of America, only following that of accidents¹. Furthermore, it is unquestionable that suicide in children has a strong media effect (which is an opportunity for the health systems to act) and a clear increase in raw and adjusted terms²⁻⁴.

According to Medina-Mora et al., also in Mexico, suicide ideation is very frequent in youth of both genders between 13 and 25 years of age^{5,6}; and in the State of Jalisco, where the present study was conducted, an increase in suicides in minors has been documented: in 2001, 17 (8.01 %) of the total of 321 suicides were carried out by persons between 10 and 17 years of age; in 2002, 24 (10.52 %) of 355 suicides, in 2003, 48 of 349, and only up to March of 2004, five out of a total of 79 deaths by suicide in the State were minors in this age range⁷.

It is presently accepted that timely identification of suicide risk may and should be one of the obvious measures for its prevention. Nevertheless, the high suicide risk is frequently not detected in the population in general and in children and adolescents in particular. Thus, for example, according to Clark (1993), 83 % of adolescents who come to a first level care center and have attempted suicide are not recognized as persons with suicide risk by the general physicians⁸.

In this state of things, measurement instruments or scales are especially useful tools to make it possible for those who have daily contact with children and adolescents, such as physicians, teachers and parents or school friends, to detect suicide risk and send them to specialized treatment. At present, there are assessment methods of this phenomenon, although most of them: *a*) are expensive as they depend on the participation of an expert mental health professional, as is the case of psychiatric interviews; *b*) were developed in other countries and have no translation to Spanish or validity and reliability studies in Spanish speaking populations, or *c*) they require time and specialized training that those who have daily contact with the general population generally do not have⁹⁻¹³. Thus, efforts must be aimed at developing and/or translating, adapting and validating useful and simple tools in Spanish to detect suicide risk in the general population and in children and adolescent in particular. This type of self-administered questionnaire generally investigates the presence of the most important risk factors for suicide in children; read: previous suicide attempts, presence of mood state disorder, such as depression, and the history of sexual abuse¹³. Such is the case of the Risk of Suicide Questionnaire (RSQ)¹⁴.

Considering this, this study aimed to translate the Risk of Suicide Questionnaire (RSQ) into Spanish and determine the convergent validity and internal consistency of the Spanish version in a sample of Mexican children.

METHOD

Subjects

A census type sample of students of both genders, who studied in fifth or sixth grade of grammar school in the private school Simon Bolivar, located in the metropolitan area of Guadalajara, Mexico and whose parents or guardians gave their written consent for their participation in the study, was evaluated.

Instruments

Risk of Suicide Questionnaire (RSQ)

The RSQ¹⁴ was developed recently by Horowitz et al. (2001) to make it possible to identify suicide risk in children by personnel not specialized in mental health. This self-administered instrument has fourteen questions that investigate the severity of the risk factors for suicide in minors based on a seven point Lickert type scale. Thus, the greater the score, the higher the suicide risk and the total maximum score can be 34 points. The psychometric studies of its original version in English show that it is an instrument with high sensitivity and specificity to detect suicide risk in children by nursing staff who attend to a pediatric emergency ward⁹. Based on this version, the author developed a short form, using the Suicide Ideation Questionnaire (SIQ) as gold standard. This is made up of only four items that can facilitate rapid (and timely) detection of suicide risk in children and decision making by the staff not specialized in mental health. These four items are those that question the present suicide behavior, past suicide ideation, past self-destructive behavior, and present stressors (see appendix). They are those that have demonstrated greater sensitivity (0.98), specificity, positive predictive value (0.87) and negative predictive value (0.97)⁹.

Beck Depression Inventory (BDI)

The BDI¹⁵ was designed to assess the severity of depressive symptoms an individual has. The instrument is self-administered, and has 21 items. Each item has four statements that describe the severity spectrum of the symptomatic and behavioral category evaluated. In every case, the first statement has a 0 value, that indicates absence of symptom, the second 1 point, the third 2 points and the fourth 3 points, that is the maximum severity of the symptoms. The first 14 items refer to affective-cognitive symptoms and the remaining 7 to vegetative and somatic symptoms that are commonly included to diagnose Major Depression. The instrument has shown acceptable validity and reliability for its use in clinical practice and research, and the Spanish version used in the present study has had a similar psychometric behavior as the original version^{15,17}.

Beck Hopelessness Scale (BHS)

The BHS¹⁸ is an instrument designed to measure the degree of hopelessness present in adolescents and adults.

Appendix

Spanish version of the Risk of Suicide Questionnaire (RSQ)

Por favor contesta cada una de las siguientes preguntas, marcando con una cruz (tachando) el punto en la línea que corresponda a tu respuesta.

Por ejemplo:

¿En la semana pasada te has sentido más triste que de costumbre?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No			Más o menos			Sí

Esta sería tu respuesta si te sintieras más o menos más triste que de costumbre o si estuvieras más o menos de acuerdo con la pregunta

1. ¿Tú estás aquí porque has tratado de lastimarte a ti mismo?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No			Más o menos			Sí

2. ¿Esto fue un intento para matarte a ti mismo?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No			Más o menos			Sí

3. ¿Tú utilizaste alcohol o drogas (durante el intento)?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No			Más o menos			Sí

4. La semana pasada ¿tú tuviste un pensamiento acerca de lastimarte a ti mismo?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No			Más o menos			Sí

5. La semana pasada ¿tú tuviste un pensamiento de matarte a ti mismo?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No			Más o menos			Sí

6. ¿En este momento tú tienes pensamientos de lastimarte a ti mismo?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No			Más o menos			Sí

7. ¿Tú piensas que necesitas ayuda para cuidarte a ti mismo?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No			Más o menos			Sí

8. ¿Tú siempre has tratado de lastimarte, como lo estás haciendo ahora?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No			Más o menos			Sí

9. En el pasado, ¿tú consideraste seriamente matarte a ti mismo?

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No			Más o menos			Sí

Appendix

Versión en español del Cuestionario de Riesgo Suicida RSQ (continuación)

10. ¿Tú recibiste tratamiento médico como resultado de cualquier intento de lastimarte o matarte a ti mismo?

No Más o menos Sí

11. ¿Alguien cercano a ti ha muerto recientemente?

No Más o menos Sí

12. ¿Tú conoces a alguien que se haya matado a sí mismo?

No Más o menos Sí

13. En las últimas semanas ¿tú tuviste un pensamiento acerca de lastimarte a ti mismo?

No Más o menos Sí

14. ¿Tú usas alcohol o drogas?

No Más o menos Sí

Hopelessness is understood as a cognitive representation of negative expectations on the immediate and long term future, evaluating attitudes on the future (pessimism). Although this instrument was not designed as a screening test, it has been used as an indirect indicator of suicide attempts in adolescents and adults¹⁹. The scale is a structured instrument, self-administered with pencil and paper (or by oral administration by the clinician) that is made up of 20 true or false items. It can be administered to hospitalized patients, those in the emergency service or out-patients. The hopelessness severity is calculated based on the sum of the scores in all the items. Each item is graded with «zero» or «one» in the case of presenting the symptoms, so that the total score can go from 0 to 20 points, in which 0-3 is minimum, 4-8 middle, 14 moderate, and 15-20 severe¹⁸. The BHS has been shown to be a valid instrument, with high internal consistency and temporal stability¹⁸⁻²⁰, that is useful to identify adequately persons who will have a suicide attempt in the next year¹⁰.

PROCEDURE AND STATISTICAL ANALYSIS

In the first place, the original version of the RSQ in English was translated to Spanish by two investigators proficient in both languages, who resolved their divergences ba-

sed on the collaboration of a third investigator who was a specialist in adolescents, urging the cultural adaptation of the items in question. Then, the school authorities had a meeting with the parents to explain the project to them and request their collaboration. Those who gave their permission for their children to participate in the study had to sign the corresponding informed consent. Next, three investigators came to the school on the days and times indicated by the academic authorities to administer the instruments to the students who voluntarily accepted to answer them and from whose parents the signed informed consent had been received authorizing the minor to participate in the study. After, the parents or guardians of the participants who showed risk of suicide were contacted by telephone by one of the investigators, a psychiatrist specialized in adolescents, to invite them to a free appointment for subsequent specialized evaluation and care in the Instituto Jalisciense de Salud Mental of the Secretary of Health in Jalisco, Mexico. Finally, the data were captured and analyzed with the SPSS-X, version 10.0 statistical program for Windows, PC. The total score of all the scales was obtained, eliminating item number 9 from the Beck Depression Inventory that refers to intention to commit suicide, that overlaps with the items on the RSQ that evaluate this risk factor for suicide to do so. This was done in order to determine the most exact converging validity between these constructs. Internal con-

sistency of the instrument was calculated based on Cronbach's alpha coefficient for the total of the scale items. Coefficients of intra class correlation between the total scores of the instrument and Beck's Depression and Hopelessness Inventories were calculated. Finally, presence versus absence of suicide risk was determined based on the affirmative response of the minors to one or more of the four items that made up the short form of the RSQ⁹.

RESULTS

The total sample of the study was made up of 88 students with an average age of 11.23 ± 0.78 (range: 10-13) years, 55.7% of whom were males. Practically half of the participants were in the fifth grade of primary school ($n = 49$; 55.7%), and the rest were in the sixth grade ($n = 39$, 44.3%).

The average scores on the scales were 8.3 ± 9.05 for the Spanish version of the RSQ, 7.4 ± 6.7 on the Beck Depression Inventory and 18 ± 3.3 on the Beck Hopelessness Scale. The internal consistency of the Cronbach alpha index of the RSQ Spanish version was 0.68, and the correlations between the total scores of RSQ and the depression and hopelessness inventories were: 0.75 ($p = 0.001$) and 0.52 ($p = 0.001$), respectively.

A total of 56 minors (63.6%) gave an affirmative answer to some of the four indicators of suicide risk of the RSQ. Six of them (6.81%) gave an affirmative answer to these four indicators, so that they were considered with «elevated likelihood of suicide risk», and it was decided to contact them before the others to offer their parents evaluation and specialized treatment. However, only one of all the minors contacted were brought by their parents to the subsequent evaluation for the specialized care offered at no cost in the «Instituto Jalisciense de Salud Mental» of the Health Secretary of Jalisco, Mexico. It is not known if the others were taken to another type of care and mental health service.

DISCUSSION AND CONCLUSIONS

The Spanish version of the RSQ showed moderate internal consistency and moderate-high correlation with scales that evaluate constructs that are hypothesized to be closely linked to suicide risk²¹. This suggests that it is a valid and reliable measurement to assess the Mexican population.

It is possible to state that it was to be expected (and desirable) that the correlation between the RSQ and measurement of hopelessness was positive and moderate in virtue of the fact that the scales should demonstrate that they measure different constructs, although they evaluate related variables. In the case of depression, a positive and rather high correlation was found. This can be explained as it deals with overtly (although not necessarily) linked phenomena.

In this way, the Spanish version of the RSQ may be considered a useful tool for timely detection of suicide risk in children, that may be used in educational settings and all the health care levels to promote clinical decision making based on evidence and sensitive to our culture.

In a second phase of this study, it will be necessary to determine sensitivity, specificity, and positive and negative predictive value of the extensive and short version in Spanish of the RSQ when it is applied not only by health care staff but by those who are in daily contact with the minors, such as the parents, teachers and school friends.

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