

Children's Depression Inventory (CDI) and the Children's Depression Rating Scale-Revised (CDRS-R): Reliability of the Hebrew version

Gil Zalsman, MD^{1,2}, Sagit Misgav, MD³, Eliane Sommerfeld, PhD^{1,4}, Yoav Kohn, MD⁵, Anat Brunstein-Klomek, PhD^{1,2}, Robyne Diller, PhD¹, Leo Sher, MD², Joseph Schwartz, MD¹, Gal Shoval, MD¹, David H Ben-Dor, MD¹, Luisa Wolovik, MD¹ and Maria A Oquendo, MD²

¹Geha Mental Health Center and Tel Aviv University, Israel, ²Columbia University, New York, NY, United States, ³Tel-Aviv Community Mental Health Center, Tel Aviv, Israel, ⁴Department of Behavioral Sciences, Academic College of Judea and Samaria, Ariel, Israel and ⁵Hadassah-Hebrew University Medical Center, Jerusalem, Israel

Abstract: The Children's Depression Inventory (CDI) and Children's Depression Rating Scale-Revised (CDRS-R) are two widely used instruments, which measure depression in children and adolescents. This pilot study assessed the reliability of the Hebrew versions of these two instruments. Both CDRS-R and CDI were translated from English into Hebrew and then back translated. Seventeen healthy Israeli bilingual children volunteers were interviewed with both scales with a one day intermission between the interviews. Non-parametric correlations were used to compare scores in the two versions for each item. Results showed high agreement between the two versions for almost all items of the CDI and moderate to high for the CDRS-R. When CDRS-R summary scores for each item were compared, the agreement was high for this instrument as well. It is concluded that both CDI and CDRS-R Hebrew versions are reliable and can be used for studies of depression in the Israeli pediatric population.

Keywords: Children's Depression Inventory (CDI); Children's Depression Rating Scale-Revised (CDRS-R), reliability; Hebrew, depression, suicide, Israel

Correspondence: Gil Zalsman M.D., Adolscnt Inpatient Unit, Geha Mental Health Center, PO Box 102, Petach Tikva 49100, Israel. Email: zalsman@post.tau.ac.il

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INTRODUCTION

Depression in children and adolescents is not rare and a major risk factor for subsequent suicidal behavior (1,2). Extensive study of depression in children and adolescents is still lacking. Adult depression is usually evaluated by the Hamilton Rating Scale for Depression (HRSD) (3), which measure the severity of depression and seen as an objective clin-

ician-rated scale. The equivalent scale for children and adolescents ages 6-18 years is the Children's Depression Rating Scale-Revised (CDRS-R) (4). The Beck Depression Inventory (5) is a 21-item self-report questionnaire assessing cognitive, affective, motivational and vegetative symptoms of depression from a subjective perspective. For children under the age of 13 years, a downward extension of the BDI, the

Children's Depression Inventory (CDI) is used (6).

Both instruments are crucial for the study of depression in the pediatric population. The aim of this pilot study was to assess the reliability of the Hebrew version of these two tools in order to allow their use on the Israeli population.

METHODS

Sample

Seventeen healthy Israeli volunteers, all children of this study's authors, participated in the study. Nine were females. The ages of the children ranged from 6 to 16 years with a mean of 9.94 years ($SD=2.88$). All participants were staying in the US for at least 1.5 years, were bilingual (i.e., with fluency in English and Hebrew) and could read and write in both languages.

Translation

The translation into Hebrew was done by a psychiatrist (SM) with excellent knowledge of the language as it is spoken in Israel. The Hebrew translation was then translated back into English by a child psychiatrist (GZ) and differences were discussed and agreed to by consensus. Both psychiatrists were fluent in both languages.

Scale Administration

The raters were child psychiatrists (GZ and YK) or a general psychiatrist (SM) familiar with the measures used. Half of the children received the English version first and half started with the Hebrew version. Between one to two days later each group was administered the other version. This design controlled for order effect. All the participants and their parents gave a written informed consent.

Statistical analysis

Since the scores resulted from these two scales were ordinal, two-tailed Spearman's

rho was performed to assess correlations between scores in the Hebrew version vs. the English version for each item separately.

RESULTS

CDI: Agreement was very high for most of the items: items 1-5, 7, 9-14 (Spearman's $\rho=0.8-1.0$, $p<0.001$). For the other items it was moderate to high ($\rho=0.7-0.8$, $p=0.01-0.05$). CDRS-R: For all items agreement was moderate to high when examining child and parent scores ($\rho=0.5-0.67$, $p<0.05$). When comparing the summary items (clinician ratings according to the two other scores and his/her clinical judgment) between the two versions, the agreement was higher ($\rho=0.77-0.90$, $p<0.01$).

DISCUSSION

The results demonstrated a good reliability for the CDI Hebrew version. Good reliability was demonstrated also for the CDRS-R, especially if the summary score in each item was used instead of the child or parent item separately. This finding was not surprising and has been reported previously (4). Since this scale is using more than one informant (the child, parent and clinician) the variability is higher and the scale is expected to be less consistent.

Our study had some major limitations: the participants were well known to the interviewers, the age range was large and the sample was small. Another limitation was that we studied a normal population, while actually these measures would be used on a depressed population. A replication on clinical population is warranted. Despite these limitations, it is important to keep in mind that we have only assessed the reliability of our translation (i.e., does the subject give the same answer when asked in a different language) and not the face validity of well-

validated measures. This study actually assessed parallel-forms reliability or equivalence to ensure semantic, conceptual and technical equivalence between the versions of the instrument in different languages. We conclude that these two translated instruments can be used for depression research in the Israeli Hebrew-speaking pediatric population.

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