

CONVERGENT AND DISCRIMINANT VALIDITY OF THE STRUCTURED DIAGNOSTIC INTERVIEW FOR CHILDREN AND ADOLESCENTS (DICA-R)

N. de la Osa, L. Ezpeleta*, J.M. Domenech, J.B. Navarro and J.M. Losilla

Faculty of Psychology. Autònoma University of Barcelona

This paper examines the convergent validity of the Diagnostic Interview for Children and Adolescents - Revised (DICA-R), using the Child Behavior Checklist of T. M. Achenbach as a criterion. The ability of the instrument to detect subjects with psychopathology in the general population is also studied. The study was made through 196 interviews with psychiatric patients and 130 interviews with subjects from schools and Paediatric Services. The results obtained with the DICA-R are comparable with those obtained from other instruments that are widely accepted and considered as valid. The interview is a valid instrument for use in epidemiological research, as it can distinguish correctly between controls and cases.

El artículo examina la validez convergente de la Entrevista Diagnóstica Estructurada para Niños y Adolescentes (DICA-R), utilizando como criterio la CBCL de T. M. Achenbach. Asimismo se describe la capacidad del instrumento para detectar sujetos con psicopatología en la población general. El estudio se llevó a cabo con un total de 196 entrevistas realizadas con pacientes psiquiátricos externos y 130 entrevistas realizadas con sujetos reclutados en escuelas y Servicios de Pediatría. Los resultados obtenidos con lo DICA-R convergen con los que se obtienen a partir de otros instrumentos ampliamente utilizados y considerados como válidos. La entrevista es asimismo válida para el estudio epidemiológico ya que diferencia adecuadamente entre grupos controles y psiquiátricos.

Comparative cross-cultural studies and the adoption of diagnostic systems from other cultural domains (DSM-III-R; APA, 1987) are increasingly widespread and common practices. This makes it of prime importance to ensure that evaluations are equivalent and the instruments developed in a given environment can be applied to others.

Concurrent validity, or the degree of agreement between an instrument and other, simultaneous external measures is one of the important aspects when determining usefulness. The establishment of this concurrent validity tells us about the instrument's degree of effectiveness for predicting or forecasting an interesting variable (the criterion) from its score (Muñiz, 1994). In turn, the comparison of a given characteristic based on different diagnostic instruments may provide data about the usefulness of certain epistemological entities.

There is great controversy about what should be the

The original Spanish version of this paper has been previously published in *Clínica y Salud*, 1996, Vol. 7 No 2, 181-194

.....
* Correspondence concerning this article should be addressed to N. de la Osa. Universitat Autònoma de Barcelona. Departament de Psicologia de la Salut i Psicologia Social. Facultat de Psicologia. Edifici B. 08193 Bellaterra. Spain.

“ideal” criterion or referent with which to check or examine the instrument being studied (Robins, 1985). Although clinical diagnosis has been considered, it has systematically proved to be weak when compared to the most commonly-used structured interviews, and some authors have questioned its utility (Piacentini, Shaffer, Fisher, Schwab-Stone, Davies and Gioia, 1993). The Spanish version of the Diagnostic Interview for Children and Adolescents-Revised (DICA-R; Reich, Shayka and Taibelson, 1991) has already been studied in relation to clinical diagnosis (Ezpeleta, De la Osa, Júdez, Doménech, Navarro and Losilla, in press), and between slight and moderate concordance rates have been obtained. On this occasion, the chosen referent is the Child Behavior Checklist (CBCL; Achenbach, 1991), a measure widely used and studied in various countries (Bird, Gould, Rubio-Spítec and Staghezza, 1991; Carter, Grogorenko and Pauls, 1995; Hellincks, Grietens and Verhulst, 1994; Schneider, Walter and Remschmidt, 1991; Verhulst, Achenbach, Ferdinand and Kasius, 1993, Xin, Chen, Tang, Lin and McConville, 1992; Ziber, Auerbach and Lerner, 1994). The instrument is easily applied and there is a great deal of data about its psychometric qualities, coming out of results from studies in 28 different cultures (Verhulst and Achenbach, 1995).

The r values in test-retest from the original version (Achenbach, 1991), computed for a sample of 72 children between 4 and 16 years old in the normal population, range between .82 and .95 ($p < .001$). The relation to other similar instruments, such as Conners' Parents Questionnaire (Conners, 1973), in a sample of 60 external patients, was high ($r = .82$, $p < .001$). CBCL's empirical construction -based on a list of problems about pre-school behaviour of concern to parents and mental health professionals-, as well as evidence of higher scores for subjects coming from clinical populations than those from normal populations, are its best guarantees of good content and discriminant validity.

Studies on validity frequently limit themselves to studying content and criterion validity. With the exception of research carried out with the DICA (Herjanic and Campbell, 1977), CAS (Hodges and Fitch, 1979) and DISC (Costello, Edelbrock, Dulcan, Kalas and Klaric, 1984), there have been very few efforts to look into discriminant validity of structured interviews (Hodges, 1993). There is not a single study on DICA-R's ability to discriminate among paediatric and psychiatric samples. Such an aspect seems to be especially relevant for us in an instrument specifically designed for epidemiological research.

Following Hambleton's (1994) guidelines on the necessary requirements for considering an instrument as reliable and valid, and the need to demonstrate these features regardless of those of the original instrument, the goal in the present work is to focus on the study of two types of validity in the Spanish version of the DICA-R structured diagnostic interview (Ezpeleta, De la Osa, Júdez, Doménech and Navarro, 1994): 1) Concurrent validity between DICA-R and CBCL in the parents' version, and 2) discriminant validity when applying DICA-R to two different samples, one psychiatric and the other school-paediatric.

METHOD

Subjects

Data on DICA-R/CBCL concurrent validity (Study 1) corresponds to 147 children and adolescents, external psychiatric patients and their parents. Subjects were aged between 6 and 17 years old, and were recruited from four Primary Child Psychiatric Assistance centres. All the subjects were attending the centres for the first time. Distribution by sex was: 68 boys (46.3%) and 79 girls (53.7%). 100% of families were Caucasian. Hollingshead's (1975) socio-economic status index distributed as follows: Class I: 2.8%; Class II: 7.7%; Class III: 13.3%; Class IV: 33.6%; Class V: 42.6%. Clinicians selected all those cases presenting one or more of the

disorders assessed in the interview. Subjects suspected of mental deficiency were excluded from the study.

For the study of the discriminant validity of the interview (Study 2), results from interviews given to 196 external psychiatric patients (the previous 147 plus 49 new admissions to the centres) and their parents, together with those of another 130 subjects -73 of which came from Public Health Network Paediatric Services, and 57 from schools, were examined. Subjects ages also ranged from 6 to 17. From now on, we will call the subjects from the Mental Health centres "psychiatric group", and those recruited from school and paediatric centres "control group".

The psychiatric group was composed of 87 boys (44.4%) and 109 girls (55.6%). Families' socio-economic status was as follows: Class I: 3.2%; Class II: 5.9%; Class III: 14.1%; Class IV: 29.7%; Class V: 47.1%. The control group was comprised of 49 boys (37.75) and 81 girls (62.3%). Their socio-economic status was: Class I: 7.1%; Class II: 15.9%; Class III: 14.2%; Class IV: 28.3%, and Class V: 34.5%.

Psychiatric and control groups' age ($t = 3.21$, $p = 0.001$) and sex ($\chi^2 = 1.44$, $p = 0.22$) comparison showed that the psychiatric group's mean age (12.72) was higher than that of the control group (11.61). Given the sample size, this difference would appear to be purely statistical, with no clinical significance, so that the two groups are comparable.

Measures

CBCL is a standardised instrument for the assessment of child behaviour problems. It evaluates clinical subscales of Isolation, Somatisation, Anxiety/Depression, Social Problems, Thinking Problems, Attention Problems, Criminal Conduct and Aggressive Behaviour. It also allows one to obtain a global score for the grouping of the so-called internalising and externalising syndromes, as well as a total score of symptoms present. Scales have been empirically developed, and they offer T scores.

DICA-R is a structured diagnostic interview, based on DSM-III-R's (APA, 1987) diagnostic criteria, which covers all the most frequent psychiatric syndromes in childhood and adolescence. It is presented in three versions, one for children between 6 and 12 years old (DICA-R-C), another for adolescents between 13 and 17 years old (DICA-R-A), and a common version for parents of both age groups (DICA-R-P). The Spanish adaptation has proved to have good test-retest reliability, with κ values between .46 ($n = 57$) for anxiety disorders and 1.00 ($n = 56$) for ingestion disorders in the children's version; between .54 ($n = 53$) for disorders due to distur-

bing behaviour and .75 (n=53) for ingestion disorders in the adolescents' version; and .41 (n=61) for anxiety disorders and .61 (n=61) for state of mind disorders in the parents' version (Ezpeleta, De la Osa, Doménech, Navarro y Losilla, 1995b). It also has excellent reliability among interviewers, with κ values ranging from .65 to 1.00 for the set of the three versions (De la Osa, Ezpeleta Doménech, Navarro y Losilla, 1996). Concordance with the clinician was between slight and moderate, with κ values from .06 (n=63) for phobias to 1.00 (n=63) for anorexia in the DICA-R-C version; from .07 (n=65) for separation anxiety disorder to .55 (n=45) for anorexia in the DICA-R-A; and from .09 (n=61) in phobias to 1.00 (n=65) for behaviour disorders in the DICA-R-P version (Ezpeleta, De la Osa, Júdez, Domenech and Losilla, in press).

Procedure

Study 1

Several interviewers, previously trained in the use of the interview, administered DICA-R to children and their parents on a date as close as possible to the first contact with the Mental Health centre they attended. In order to do this, formal written consent from the parents and the child's verbal assent was required. Interviewers were unaware of the clinician's diagnosis at the time of making the interview. Once it was finished a CBCL form was given to the parents, who were to fill it out and return it on their next visit to the clinician.

Pearson's linear correlation coefficient was computed between the score for each CBCL subscale -including the internalising and externalising groupings- and the number of symptoms present in each of the disorders assessed by DICA-R. This index was also worked out for each scale in the questionnaire and the total of symptoms present in the interview.

Study 2

Evaluation of psychiatric patients and their parents was made in a way similar to that described in the previous study; the same applied to the paediatric sample. The paediatric sample of the control group was recruited from the paediatric services of two hospitals. Children, although hospitalised, were suffering from mild disorders (phimosi, bone fractures...) Children suffering from chronic or psychosomatic disorders were excluded from the study. The school sample of the control group included part of the sample from the second phase of the study on Obesity-Bulimia-Anorexia (Toro, Saldaña and Raich, 1993). This sub-sample was comprised of children randomly selected among those who had a score lower than the cut-off point established in the screening

test (Eating Attitudes Test; Garner and Garfinkel, 1979). Peculiarities in the schools' internal functioning prevented the parents of these subjects being interviewed, though all the children had their parents' authorisation to voluntarily participate in this study. DICA-R's discriminant capacity analysis between two previously-established groups was studied at the quantitative as well as the qualitative levels. A t-test was carried out on the differences between the means of the total number of symptoms present in the interview for each group and the difference between the means of the total number of disorders detected by DICA-R.

Also studied was DICA-R's ability to suitably locate subjects in the pre-established groups through the analysis of sensitivity and specificity of the test and using χ^2 . A subject was considered non-pathological when he/she did not show any of the disorders covered by the interview. The presence of one diagnosis was sufficient to consider the subject as being within a pathology group.

Data from both studies was processed by a DAT 2.0 system (Doménech y Losilla, 1995), which guaranteed the absence of logical and arithmetical errors, and allowed the generation of diagnoses using the algorithms previously defined by the interview. Diagnoses were made separately for parents' and children/adolescents' evaluations. Statistical analysis was made using SPSS. CBCL was scored according to Achenbach's (1991) scales and norms appropriate to each age.

RESULTS

Study 1

With regard to the convergence of information obtained through CBCL and DICA-R, it is observed that virtually all correlations in Study 1 were positive (Tables 1 and 2), indicating that the higher the score in any of the scales involved, the higher the number of symptoms detected by DICA-R in each of the listed diagnoses. In these same tables, bisecting correlations between T scores in the wide-range internalising and externalising categories and the DICA-R diagnoses are shown. Correlations between DICA-R and CBCL were, in general, of low to moderate level, and around half of them reached statistical significance.

Regardless of the person reporting, the highest correlations were found between disorders due to disturbing behaviour (attentional deficit disorder with hyperactivity TDAH, defiant negativity ND) and those dimensions most related to these disorders (attentional problems, aggressive behaviour, criminal and externalising conduct), and between the total number of symptoms in the interview and the total score.

Values were higher when information was obtained from the same reporter (parents answered the interview and the CBCL). Separation anxiety disorder (TAS) did not show a significant relationship with any dimension, either when information was provided by parents, or when children gave it. In the interview with children, the dimension that related least with syndromes was Isolation.

In general, syndromes obtained the highest correlations with the narrow band dimensions theoretically most related to them. Thus, for example, anxiety disorders showed the highest correlation with anxiety/depression. The same occurred with wide band correlations: affective-emotional syndromes (anxiety and depression) significantly related to the internalising dimension, while syndromes due to disturbing behaviours did so with the externalising dimension. The total number of symptoms in the interview significantly correlated with all the dimensions.

TDAH: attention deficit with hyperactivity. ND: defiant negativity. TC: Total Behaviour. DM: Strong depression. TAS: Separation anxiety. TAE excessive anxiety.

Study 2

With regard to DICA-R's ability to discriminate between clinical and normal groups, Table 3 indicates that the quantitative analysis of mean differences in the symptoms

and diagnoses obtained from DICA-R has statistical significance in all the cases, regardless of interview version and the quantitative variable in question. The mean number of symptoms and diagnoses present was significantly greater in the control than in the psychiatric group.

Table 4 shows DICA-R's capacity for correctly discriminating among subjects belonging to previously differentiated groups, given its good-to-excellent sensitivity and average specificity.

DISCUSSION

DICA-R's convergent validity with CBCL was moderate to low. However, this relation is, in general, stronger when parents are the reporters than in the case of children, particularly in externalising-type behaviours (Biederman et al, 1993; Gould, Bird and Jaramillo, 1993; Jensen, Allan, Salzberg, Richters and Watanabe, 1993; Kazclin and Heidish, 1984; Shekim, Catwell, Kashani, Beck, Martin and Rosenberg, 1986), as might be expected, given that there is a single reporter and because, in these types of disorder, parents seem to provide better information (Ezpeleta, De la Osa, Doménech, Navarro y Losilla, 1995a). Another explanation might be the greater capacity of the instrument chosen as criterion for discriminating these types of disorder rather than the internalising ones (Jensen et al, 1993). The highest relation is always obtained between the syndrome and the dimension theo-

Table 1
Pearson's correlation between CBCL and DICA-R in children and adolescents

DICA-R C+ A	Isolation	Somatisations	Anxiety/Depression	Social problems	Thinking problems	Attention problems	Criminal conduct	Aggressive behaviour	Internalising	Externalising	Total score
TDAH (N=147)	-.02 p=.769	.15 p=.074	.09 p=.294	.23 p=.006	.16 p=.047	.29 p<.0005	.23 p=.005	.35 p<.0005	.06 p=.448	.34 p<.0005	.25 p=.002
ND (N=146)	.16 p=.060	.21 p=.012	.22 p=.007	.37 p<.0005	.30 p<.0005	.30 p<.0005	.39 p<.0005	.46 p<.0005	.18 p=.027	.46 p<.0005	.40 p<.0005
TC (N=145)	.16 p=.056	.22 p=.007	.19 p=.021	.36 p<.0005	.32 p<.0005	.44 p<.0005	.60 p<.0005	.51 p<.0005	.23 p=.006	.54 p<.0005	.47 p<.0005
DM (N=144)	.12 p=.168	.16 p=.058	.37 p<.0005	.09 p=.262	.32 p<.0005	.03 p=.728	.20 p=.019	.24 p=.004	.23 p=.007	.23 p=.005	.25 p=.003
TD (N=144)	.14 p=.093	.16 p=.054	.26 p=.002	.14 p=.093	.21 p=.013	.06 p=.484	.12 p=.168	.12 p=.136	.22 p=.007	.17 p=.037	.22 p=.009
TAS (N=146)	-.04 p=.593	.08 p=.419	.15 p=.063	.06 p=.453	.07 p=.397	.07 p=.386	-.03 p=.720	.12 p=.165	.08 p=.318	.08 p=.355	.11 p=.202
TAE (N=146)	.20 p=.015	.32 p<.0005	.42 p<.0005	.12 p=.157	.24 p=.003	-.04 p=.667	.06 p=.467	.15 p=.069	.37 p<.0005	.14 p=.088	.25 p=.002
PHOBIA (N=144)	.15 p=.075	.05 p=.563	.21 p=.012	.07 p=.386	.15 p=.081	.06 p=.491	-.09 p=.303	.00 p=.990	.13 p=.122	.01 p=.905	.11 p=.183
Obses. (N=146)	.07 p=.408	.16 p=.054	.16 p=.047	.05 p=.573	.05 p=.517	-.02 p=.765	-.04 p=.605	.09 p=.256	.13 p=.105	.06 p=.437	.10 p=.227
Compul. (N=144)	.03 p=.687	.10 p=.244	.23 p=.006	.05 p=.587	.20 p=.014	.01 p=.951	.09 p=.296	.20 p=.017	.16 p=.059	.17 p=.045	.16 p=.053
Somatis. (N=142)	.09 p=.286	.26 p=.002	.27 p=.001	.14 p=.094	.23 p=.005	.03 p=.698	.11 p=.183	.13 p=.129	.24 p<.005	.18 p=.032	.24 p=.004
Total number of symptom (N=147)	.15 p=.062	.32 p<.0005	.43 p<.0005	.28 p=.001	.35 p<.0005	.21 p=.009	.35 p<.0005	.46 p<.0005	.35 p<.0005	.45 p<.0005	.45 p<.0005

TDAH: attention deficit with hyperactivity. ND: defiant negativity. TC: Total Behaviour. DM: Strong depression. TAS: Separation anxiety. TAE excessive anxiety.

retically most related to it (Achenbach, 1991; Biederman et al, 1993; Shekim et al, 1986). In general, dimensions also tend to correlate with other dimensions that may form part of the clinical chart.

The only syndrome that showed no significant relation is the Separation Anxiety Disorder (TAS). This was the case with both parents' information and with children's, so that it would not seem to be due to the reporter but, probably, to a problem in the epistemological definition of the disorder. In this sense, it should be noted that there were no significant differences among the CBCL scores when those subjects diagnosed as having this disorder were compared to those that did not have it. Epistemological definition problems of the TAS are discussed in the thorough revision made for this syndrome by DSM-IV (APA, 1994). This relationship again suggests a substantial convergence between the two different approaches, and gives support to the validity of certain constructs they have in common -as was already suggested by work in this line by Edelbrock and Costello (1988), when they compared DISC and CBCL results. In relation to this, we must mention that, when analysing the convergence between CBCL results and the clinician's diagnosis -derived from the information coming from parents and children together -, the statistically significant correlations obtained between dimensions and diagnoses were fewer, in general, and the values lower (De la Osa, Ezpeleta,

Doménech, Navarro y Losilla, in preparation).

The dimension least related to syndromes is Isolation. Theoretically, this dimension would be mainly related with Avoidance Disorder (TE), which has disappeared in the DSM-IV classification. The number of subjects presenting this diagnosis was so small that it was not included in this study. Achenbach (1980) warns that the psychometric approach is quite unsuitable for the evaluation of scarce pathologies. In the case of parents, Isolation correlates with depressive syndromes, TAS and ND, whilst this is not so according to the information coming from the children. Again, such a discrepancy could be due to the fact that isolation is an observable behaviour for which -as we already commented- adults are better reporters. The same argument could be applied to the lack of correlation between the Obsession category and the Thinking Problems scale, in contrast to what occurs with the Compulsions category. While compulsions are, in the majority of cases, observable behaviours, obsessions are not.

The total number of symptoms in the interview (categorical system) shows a significant relationship to all the dimensions. When the reporters in DICA-R were the children and the reporters in CBCL were the parents, there was also a significant relation between the two instruments, which indicates that the categorical and dimensional systems converge.

Table 2
Pearson's correlation between CBCL and DICA-R in parents' responses

DICA-R C+ A	Isolation	Somatisations	Anxiety/Depression	Social problems	Thinking problems	Attention problems	Criminal conduct	Aggressive behaviour	Internalising	Externalising	Total score
TDAH (N=147)	.01 p=.925	.05 p=.554	.01 p=.943	.38 p<.0005	.15 p=.066	.59 p<.0005	.35 p<.0005	.38 p<.0005	.00 p=.983	.42 p<.0005	.33 p<.0005
ND (N=146)	.16 p=.060	.19 p=.012	.20 p=.007	.32 p<.0005	.16 p<.0005	.31 p<.0005	.49 p<.0005	.65 p<.0005	.22 p=.027	.68 p<.0005	.47 p<.0005
TC (N=146)	.09 p=.262	.10 p=.208	.07 p=.400	.29 p<.0005	.19 p=.022	.40 p<.0005	.61 p<.0005	.44 p<.0005	.11 p=.188	.50 p=.000	.38 p=.000
DM (N=146)	.24 p=.004	.27 p=.001	.42 p<.0005	.07 p=.419	.31 p<.0005	.17 p=.042	.13 p=.124	.15 p=.070	.36 p<.0005	.15 p=.076	.27 p=.001
TD (N=146)	.35 p<.0005	.15 p=.071	.31 p<.0005	.13 p=.110	.21 p=.012	.12 p=.165	.08 p=.337	.01 p=.917	.30 p<.0005	.08 p=.337	.23 p=.006
TAS (N=147)	-.03 p=.711	.16 p=.057	.11 p=.194	.10 p=.244	.07 p=.414	.00 p=.960	-.10 p=.226	-.03 p=.721	.07 p=.379	-.02 p=.839	.03 p=.752
TAE (N=147)	.16 p=.048	.24 p=.004	.38 p<.0005	.11 p=.166	.27 p=.001	.08 p=.317	-.08 p=.340	-.01 p=.929	.31 p<.0005	-.01 p=.862	.20 p=.018
PHOBIA (N=144)	.15 p=.071	.12 p=.151	.29 p<.0005	.12 p=.168	.21 p=.012	.12 p=.157	-.02 p=.842	.03 p=.728	.26 p=.002	.06 p=.449	.18 p=.029
Obses. (N=146)	.11 p=.198	.16 p=.052	.27 p=.001	.18 p=.032	.19 p=.022	.18 p=.031	.02 p=.812	.06 p=.474	.20 p=.016	.08 p=.335	.18 p=.032
Compul. (N=146)	.09 p=.305	.04 p=.618	.29 p<.0005	.06 p=.442	.30 p<.0005	.00 p=.999	.04 p=.660	.08 p=.312	.19 p=.025	.06 p=.461	.14 p=.090
Somatis. (N=146)	.06 p=.462	.35 p<.0005	.11 p=.185	-.03 p=.715	.09 p=.269	-.05 p=.512	.03 p=.743	-.00 p=.959	.18 p=.029	.04 p=.594	.13 p=.106
Total number of symptom (N=147)	.28 p=.001	.36 p<.0005	.43 p<.0005	.46 p<.0005	.43 p<.0005	.60 p<.0005	.49 p<.0005	.53 p<.0005	.40 p<.0005	.59 p<.0005	.62 p<.0005

TDAH: attention deficit with hyperactivity. ND: defiant negativity. TC: Total Behaviour. DM: Strong depression. TAS: Separation anxiety. TAE excessive anxiety.

As far as the internalising disorders are concerned, we concur with the findings of Edelbrock and Costello (1988) or Kazdin and Heidish (1984), who found relationships between the anxiety/depression scales and the corresponding diagnostic category. In this line, Brunshaw and Szatmari (1988) found higher correlations between DICA and the Survey Diagnostic Checklist in this diagnostic category and in the combination Anxiety/Depression. On the contrary, our results conflict with those of Kronenberg, Blumensohn and Apter (1988), who found low relations between depression, CBCL and DICA (Herjanic and Reich, 1982), or Biederman et al (1993), who found no relationships between the depression syndrome and the Depression/Anxiety scale.

TC, TDAH, ND and DM obtained significant correlations with the same scales, hence emphasising the problem of coexistence between internalising and externalising-type disorders, also noted by other authors (Angold and Costello, 1992, 1993; Edelbrock and Costello, 1988; McConaughy, 1993). In addition, it becomes obvious that correspondence is not univocal, either among syndromes and scales or vice-versa.

Although DICA-R includes, among the explored disorders, those related to ingestion as well as to elimination, the latter are not shown in the table of results. As previously mentioned, correlations were established between the total number of symptoms in a disorder and the

scores on CBCL scales; diagnostic criteria characteristics in these disorders mean that they can only be evaluated in terms of presence/absence and, hence, cannot be included in the correlation calculations.

Results of the comparison of the number of symptoms and the number of diagnoses between the psychiatric and the control group allow us to use the interview with some guarantees when trying to differentiate pathological from non-pathological subjects in the general population. Subjects from the psychiatric sample presented a greater number of diagnoses and a higher number of symptoms than those from the paediatric/school sample (control group). These results coincide with those obtained by Costello, Edelbrock and Costello (1985), using the DISC. However, results obtained by these authors are much better for the parents' version than for the children's. In our case, results are satisfactory for all the interview versions. Moreover, DICA-R's high sensitivity confirms its special usefulness for detecting pathological subjects.

CONCLUSION

In general terms, we can conclude that the results obtained with the DICA-R structured interview in the Spanish version basically concur with those that can be obtained from the CBCL; thus, it seems to be a valid instrument for the assessment of the most common child psychological disorders.

Table 3
DICA-R's ability to discriminate between psychiatric and control (paediatric/school) groups

	DICA	Psychiatric Group Mean	Control Group Mean	Difference	IC (95%)	p
Total number of symptoms present	C	13.74(n=77)	5.93(n=67)	7.78	4.67 a 10.90	<.0005
	A	27.19(n=119)	10.43(n=63)	16.76	12.27 a 21.26	<.0005
	P	18.10(n=193)	8.36(n=72)	9.74	7.16 a 12.33	<.0005
Total number of diagnoses present	C	1.58(n=77)	.66(n=67)	0.93	.50 a 1.36	<.0005
	A	3.06(n=119)	.70(n=63)	2.36	1.82 a 2.90	<.0005
	P	1.77(n=193)	.54(n=72)	1.23	.93 a 1.52	<.0005

Table 4
Percentage of subjects correctly classified by DICA-R

DICA-R's version	Control Group (specificity)	Psychiatric Group (sensitivity)	χ^2	Significance
DICA-R-C (n=144)	58.2(n=84)	72.7(n=105)	14.1	<.0005
DICA-R-A (n=182)	57.1(n=82)	84.9(n=122)	34.9	<.0005
DICA-R-P (n=265)	65.3(n=94)	81.3(n=117)	53.0	<.0005

The interview is also valid for epidemiological study, since it satisfactorily differentiates between different groups of subjects.

Certain important constructs in child psychopathology would appear to be endorsed by the fact of their significant correlation in the two types of classification.

More study is necessary, either to continue validating cross-culturally used instruments, or to validate the diagnostic systems themselves on which they are based: we must continue the search for "the best criterion" for examining results and for improving our knowledge on topics such as the comorbidity of clinical entities or current epistemology.

ACKNOWLEDGEMENTS

The present research was supported by DGICYT Grant No. PM91-209, Ministry of Science and Education.

REFERENCES

Achenbach, T M. (1991). *Manual for the Child Behavior Checklist/4-18 and 1991 Profile*. Burlington, VT: University of Vermont Department of Psychiatry,

American Psychiatric Association (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed. rev.) Washington D.C.: Author.

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.) Washington D.C.: Author.

Angold, A. and Costello, E. J. (1993). Depressive comorbidity in children and adolescents: empirical and methodological issues. *American Journal of Psychiatry*, 150,1779-1791.

Angold, A. and Costello, E. J. (1992). Comorbidity in children and adolescents with depression, *Child and Adolescents Psychiatric Clinic of North America*, 1, 31-51.

Biederman, J., Faraone, S. V., Doyle, A., Lehman, B., Kraus, T. Perrin, J. and Tsuang, M T (1993). Convergence of the Child Behavior Checklist with structured interview-based psychiatric diagnoses of ADHD children with and without comorbidity. *Journal of Child Psychology and Psychiatry*, 14,7, 1241-1251.

Bird, H. R., Gould, M. S., Rubio-Spítec, M., Staghezza, B (1991) Screening for childhood psychopathology in the community using the Child Behavior Checklist, *Journal of the American Academy of Child and Adolescent Psychiatry*, 30, 7,116-123

Brunshaw, J. and Szatmari, P. (1988). The agreement between behavior checklists and structured psychiatric interviews for children. *Canadian Journal of Psychiatry*, 33,6,474-481.

Carter, A S.; Grigorenko, E. L. and Pauls, D, L, (1995). A Russian adaptation of the Child Behavior Checklist: Psychometric Properties and associations with child and maternal affective symptomatology and family functioning *Journal of Abnormal Child Psychology*, 23, 6, 661-684,

Conners, C. K. (1973) Rating scales for use in drug studies with children. *Psychopharmacology Bulletin: Pharmacotherapy with children*. Washington, DC: U,S, Government Printing Office.

Costello, E., Edelbrock, C. and Costello, A. (1985). Validity of the NIMH Diagnostic Interview Schedule for Children: A comparison between psychiatric and pediatric referrals. *Journal of Abnormal Child Psychology*, 73,4,579-595.

Costello, A., Edelbrock, L., Dulcan, M., Kalas, R, and Klaric, S. (1984), *Report on the NIMH Diagnostic Interview Schedule for Children (DISC)*. Washington, DC: National Institute of Mental Health.

Doménech, J. M: and Losilla, J, M (1995). *Sistema DAT. gestor de datos científicos. Manual de referencia* Campus de Bellaterra, Barcelona: Laboratori d'Estadística Aplicada i de Modelització. Universitat Autònoma de Barcelona,

Edelbrock, C and Costello, A. (1988). Convergence between statistically derived behavior problems syndromes and child psychiatric diagnoses. *Journal of Abnormal Child Psychology*, 16,2,219-231.

Ezpeleta, L., De la Osa, N., Doménech, J, M., Navarro, J. B. and Losilla, J. M. (1995a). La Diagnostic Interview for Children and Adolescents- Revisada (DICA R): Acuerdo diagnóstico entre niños/adolescentes y sus padres, *Revista del Departamento de Psiquiatría de la Universidad de Barcelona*, 22,6,153-163,

Ezpeleta, L., De la Osa,, N, Doménech, J. M., Navarro, J, B. and Losilla, J. M. (1995b). Test-retest reliability of the Diagnosis Interview for Children and Adolescents (DICA-R) Manuscript sent for publication.

Ezpeleta, L., De la Osa, N. Júdez, J., Doménech, J, M. and Navarro, J. B. (1994). La entrevista diagnóstica estructurada "DICA-R": Spanish version's preliminary data. Presented in *Symposium de evaluación de variables emocionales en niños y adolescentes del IV Congreso de Evaluación Psicológica*, Santiago de Compostela, September, 1994.

Ezpeleta, L., De la Osa, N., Júdez, J., Doménech, J, M., Navarro, J, S. and Leslie, 3. M. (in press). Diagnostic agreement between clinicians and the structured Diagnostic Interview for Children and Adolescents-DICA R in a Spanish outpatient sample. *Journal of Child Psychology and Psychiatry*.

- Garner, D. M. and Garfinkel, P. E. (1979). The Eating Attitudes Test: and index of the symptoms of anorexia nervosa, *Psychological Medicine*, 9,273-279.
- Gould, M. S., Bird, H. and Jaramillo, B. S. (1993). Correspondence between statistically derived behavior problem syndromes and child psychiatric diagnoses in a community sample *Journal of Abnormal Child Psychology*, 21,3,287-231.
- Hambleton, R. K. (1994). Guidelines for adapting educational and psychological test: A progress report. *European Journal of Psychological Assessment*, 10, 3,229-244
- Herjanic, B and Campbell, W. (1977). Differentiating Psychiatrically disturbed children on the basis of structured interview. *Journal of Abnormal Child Psychology*, 5,127-134.
- Hellinckx, W., Grietens, H., Verhulst, F. (1994). Competence and behavioral problems in 6 to 12 year old children in Flanders (Belgium) and Holland. A cross-national comparison. *Journal of Emotional and Behavioral Disorders*, 2, 3, 130-142.
- Hodges, K. (1993). Structured interviews for assessing children. *Journal of Child Psychology and Psychiatry*, 34, 7,49-68.
- Hodges, K. and Fitch, P. (1979). Development of a mental status examination interview for children, Paper presented at the Missouri Psychological Association meeting. Kansas City, MO.
- Hollingshead, A. B. (1975). *Four factor index of social status*. Unpublished manuscript, Yale University, Department of Sociology.
- Jensen, P. S. Salzberg, A. D., Richters, J. E and Watanabe, H. K. (1993). Scales, diagnoses, and child Psychopathology: I. CBCL and DISC relationships. *Journal of the American Academy of Child and Adolescent Psychiatry*, 32,2,397-406.
- Kazdin, A. E and Heidish, I. E. (1984). Convergence of clinical derived diagnosis and parent checklists among inpatient children. *Journal of Abnormal Child Psychology*, 12,421-435.
- Kronenberg, Y., Blumensohn, R and Apter, A. (1988) A comparison of different diagnostic tools for childhood depression, *Acta Psychiatrica Scandinava*, 77,194-198.
- Muñiz, J. (1994) *Teoría clásica de los tests*, Madrid: Pirámide.
- McCanaughy, S. H. and Skiba, R. (1993) Comorbidity of externalizing and internalizing problems. *Scholl Psychology Review*, 22,3,421-436.
- De la Osa, N., Ezpeleta, N., Doménech, J. M., Navarro, J. B. and Losilla, J.M. (1996), Fiabilidad entre entrevistado de la DICA-R. *Psicothema*, 8, 2,359-368.
- De la Osa, N., Ezpeleta, N., Doménech, J. M., Navarro, J. B. and Losilla, J. M. (1996). *Convergencia diagnóstica entre el Child Behavior Checklist y el diagnóstico clínico en una muestra de pacientes Psiquiátricos externos*. Manuscript in preparation.
- Piacentini, J., Shaffer, D., Fisher, P., Schwab-Stone, M. Davies, M. and Gioia, P. (1993). The Diagnostic Interview Schedule for Children-Revised Version (DISC-R): III. Concurrent criterion validity. *Journal of the American Academy of Child and adolescent psychiatry*, 32,3,658-665
- Reich, W., Shayka, J. J. and Taibleson, Ch. (1991). *Diagnostic Interview for Children and Adolescents DICA-R*. (L. Ezpeleta, Trad.). Unpublished manuscript, Washington University, Division of Child Psychiatry.
- Robins, L. N. (1985). Epidemiology: reflections on testing the validity of psychiatric interviews. *Archives of General Psychiatry*, 42,918-924,
- Schneider, K., Walter, R., and Remschmidt, H. (1991) Validation of a German version of the Child Behavior Checklist (CBCL), *Zeitschrift für Klinische Psychologie. Forschung und Praxis*, 20,1,52-64.
- Shaffer, D., Gould, M. S., Brasic, J., Ambrosini, P., Fisher, P. Bird, H. and Aluwahlia, S. (1983). A children's global assessment scale (CGAS) *Archives of General Psychiatry*, 40,1228-1231.
- Shekim, W., Cantwell, D., Kashani, J., Beck, N. Martin, J. and Rosenberg, J. (1986). Dimensional and categorical approaches to the diagnosis of attention deficit disorders in children. *Journal of the American Academy of Child Psychiatry*, 25,653-658.
- Toro, J., Saldaña, C and Raich, R. (1993), *Proyecto Obesidad-Bulimia-Anorexia (OBA)*, Barcelona: Universitat de Barcelona (FISS 90/0126).
- Verhulst, F. and Achenbach, I. (1995). Empirically based assessment and taxonomy of psychopathology: Cross-cultural applications: A review, *European Child and Adolescent Psychiatry*, 4, 2,61-76.
- Verhulst, F. C., Achenbach, T. M., Ferdinand, R. F. and Kasius, M. C. (1993). Epidemiological comparisons of American and Dutch adolescents' self-reports. *Journal of the American Academy of Child and Adolescent Psychiatry*, 32,1135-1144.
- Xin, R, Chen, S K., Tang. H. Q., Lin, X. F. and McConville, B. J. (1992). Behavioral problems among preschool age children in Shanghai: Analysis of 3.000 cases. *Canadian Journal of Psychiatry*, 37,250-258.
- Zilber, N., Auerbach, J and Lerner, Y. (1994). Israeli norms for the Achenbach Child Behavior Checklist: Comparison of clinically referred and nonreferred children. *Israel Journal of Psychiatry and Related Sciences*, 31, 1, 5-12.