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# Validity of the DSM-Oriented Scales of the Child Behavior Checklist and Youth Self-Report

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## Abstract

**Background:** The school-age versions of the ASEBA (Achenbach System of Empirically Based Assessment) incorporate the DSM-Oriented scales. These scales make it possible to quantify and normalize problems defined in the DSM. The objective was to study the incremental validity of the DSM-Oriented scales of the ASEBA inventories, the Child Behavior Checklist - CBCL, completed by parents of children aged 6-18 years, and the Youth Self-Report -YSR, a self-report for children/adolescents aged 11-18, over: (a) scores on the Syndromes Scales for making DSM-IV diagnoses; and (b) diagnoses obtained with structured interviews for the assessment of functioning. **Method:** A clinical sample of 420 children and adolescents (8-17 years) was assessed with the CBCL, and 108 adolescents were assessed with the CBCL and YSR questionnaires. All underwent a diagnostic interview, and interviewers completed a measure of global functional impairment. **Results:** The DSM-Oriented scales showed significant incremental validity in conjunction with the Empirical Syndrome scales for discriminating DSM-IV diagnoses, and considerable incremental validity in conjunction with the diagnoses obtained through the diagnostic interview for predicting the level of functional impairment. **Conclusion:** DSM-Oriented scales should be considered simultaneously with the Syndrome Scales of the ASEBA taxonomy, as they provide useful additional information in the clinical process.

***Keywords:*** ASEBA, CBCL, YSR, incremental validity, DSM-Oriented Scales.

## Resumen

***Validez de las escalas DSM del Child Behavior Checklist y el Youth Self-Report.*** **Antecedentes:** las formas escolares de ASEBA (Achenbach System of Empirically Based Assessment) incorpora las Escalas DSM. Estas dimensiones ofrecen la posibilidad de cuantificar y normalizar problemas que figuran en el DSM. El objetivo fue estudiar la validez incremental de las Escalas DSM de los inventarios ASEBA; Child Behavior Checklist - CBCL, contestado por padres de niños de 6-18 años, y Youth Self-Report - YSR, un autoinforme para niños/adolescentes de 11-18 años: a) mediante puntuaciones en las Escalas de Síndromes para realizar diagnósticos DSM-IV; y b) mediante diagnósticos obtenidos con entrevistas estructuradas para evaluar el funcionamiento. **Método:** se evaluó una muestra clínica de 420 niños y adolescentes (8-17 años) mediante el CBCL y 108 adolescentes fueron evaluados con el CBCL y YSR. Todos contestaron una entrevista diagnóstica y los evaluadores completaron una medida de deterioro funcional global. **Resultados:** las Escalas DSM suponen un incremento de la validez significativo en relación a las Escalas de Síndromes Empíricos para discriminar diagnósticos DSM-IV, y una considerable validez incremental con respecto a los diagnósticos DICA-IV en la estimación del deterioro funcional. **Conclusión:** las Escalas DSM deben ser consideradas simultáneamente con las Escalas de Síndromes de ASEBA, puesto que proporcionan información adicional en el proceso clínico.

***Palabras clave:*** ASEBA, CBCL, YSR, validez incremental, escalas DSM.

The main goals of the clinical assessment of children and adolescents are to ascertain whether there is any psychopathology, to establish a differential diagnosis and to determine whether a treatment is indicated. Given the developmental factors involved and the complexities of the measured constructs, the gold standard for this process has come to be multi-method (interviews, questionnaires, laboratory tests, observation, etc.), multi-informant (child, parents, teachers, peers, etc.) and multi-construct. In usual clinical practice, clinicians apply extensive assessment batteries to tap into all these characteristics. As a result, the process is long and expensive. However, there is little evidence available about the effectiveness of each component of these lengthy, expensive, and time-consuming batteries (Johnston & Murray, 2003).

Parallel to the development of the Evidence-Based Treatments task force, a movement has arisen focusing on Evidence-Based Assessment. One of the focuses of Evidence-Based Assessment is incremental validity, defined as "the amount of criterion variance explained by the addition of an informant, method or construct to an existing set of assessment tools" (Johnston & Murray, 2003, p. 503). This means using assessment methods that enhance the prediction of a criterion beyond what can be predicted with another method (Hunsley & Meyer, 2003). The study of incremental validity aids the evaluation of the costs and benefits of collecting different types of clinical information and how they are combined (Hayes, Nelson, & Jarret, 1987; Hunsley, 2002). Johnston and Murray (2003), in an excellent review of the field, point out the need for studies that, as far as possible, reflect the realities of

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clinical child assessment. Incremental validity may be dependent on the base rate of the criterion (with it being more difficult to demonstrate if the base rate is low), on the amount of information available (with it being easier to demonstrate if the information is incomplete), on the method and constructs involved, and on the sex and age of child and informant (Haynes, 2001; Meyer et al., 2001). Few works have addressed the issue of incremental validity in the clinical assessment of children and adolescents, and still fewer have examined possible intervening moderators (Johnston & Murray, 2003).

The Achenbach System of Empirically Based Assessment is one of the most widely used for the assessment of dimensional psychopathology in school-age children (Child Behavior Checklist – CBCL – and Youth Self Report –YSR; Achenbach & Rescorla, 2001). These questionnaires have been translated into more than 80 languages. Originally, the questionnaires resulted in 8 cross-informant narrow-band scales and 2 broad-band scales derived by factor analysis. Later, in an attempt to integrate dimensional and categorical assessment, DSM-Oriented scales were created following a top-down procedure, whereby the items of each questionnaire that could assess the symptoms of DSM categories were selected by 22 experts in clinical child psychology from 16 different cultures to make up 6 scales. Items considered by at least 14 of the 22 experts were included in each DSM-Oriented scale. Given that two different assessments can be derived with the same items, it is appropriate to ask questions about the contribution of each of these forms of scoring the questionnaire. Should clinicians obtain both types of scores? How much information do the DSM-Oriented scales add to other available information, such as Empirical scales or information from a structured diagnostic interview?

The aim of this paper is to study the incremental validity of DSM-Oriented CBCL and YSR for the prediction of functional impairment or the prediction of a diagnosis of a structured diagnostic interview over other instruments in a broad sample of Spanish children receiving public mental health services. Aspects such as method, informant, sex and gender are taken into account.

## Method

### *Participants*

The data analyzed in this study come from a sample of 689 children and adolescents aged 8-17 years who were consecutively recruited from two psychiatric outpatient settings in the public health network of Barcelona (Spain). Parents of all the young people were asked to complete the CBCL, while all the adolescents aged 11-18 ($n$ = 657) were asked to fill out the YSR. In total, the parents of 420 children and adolescents (65.42% of possibles) (CBCL Sample) and 108 of the 11 to 18-year-olds (64.67% of possibles) (CBCL+YSR Sample) completed the questionnaires (the YSR was included later in the study). Parents of adolescents who completed the YSR had completed CBCL. Comparisons between those who responded to the CBCL and those who did not yielded no significant differences with regard to the child's sex ($p$ = .127), age ($p$ = .382) or socio-economic status (Hollingshead, 1975) ($p$ = .445). A total of 35.33% of the children/adolescents failed to respond to the YSR; there were no differences according to sex ($p$ = .455), age ($p$ = .11) or socioeconomic status ($p$ = .0.448) between those who responded to the questionnaire and those who did not.

CBCL questionnaires were answered by both parents (49.76%), only mother (41.43%), or only father (4.76 %)

The children of those parents who actually completed the CBCL ($n$ = 420) had a mean age of 13.3 years ($SD$ = 2.4). Of them, 189 (45%) were parents of girls, 98% were Caucasian, and their socioeconomic status was distributed as follows: 1.2% high, 12.9% medium high, 18% medium, 40.9% medium-low and 27%

*Table 1*
Prevalence of DSM-IV disorders and mean number of symptoms assessed with the DICA

| | CBCL Sample (n = 420) | | | CBCL+YSR Sample (n = 108) | | |
|---|---|---|---|---|---|---|
| | **Prevalence % (disorders)** | **Mean (symptoms)** | **Stand. deviat.** | **Prevalence % (disorders)** | **Mean (symptoms)** | **Stand. deviat.** |
| Any DSM Diagnosis | 383 (91.4) | 25.99 | 11.69 | 99 (91.7) | 26.13 | 12.82 |
| Disruptive Behavior Disorders | 267 (63.6) | 9.16 | 6.91 | 66 (61.1) | 2.84 | 2.67 |
| ADHD | 161 (38.4) | 5.49 | 4.98 | 27 (25.2) | – | – |
| Oppositional Defiant Disorder | 209 (49.8) | 2.85 | 2.37 | 59 (54.6) | 2.11 | 2.00 |
| Conduct Disorder | 68 (16.2) | 0.83 | 1.21 | 17 (15.7) | 1.02 | 1.41 |
| Mood Disorders | 123 (29.3) | 2.26 | 2.71 | 42 (38.9) | 3.07 | 3.12 |
| Major Depressive Disorder | 115 (27.4) | 2.05 | 2.60 | 36 (33.3) | 2.77 | 3.05 |
| Dysthymia | 11 (2.6) | 0.38 | 1.15 | 6 (5.6) | 0.59 | 1.51 |
| Anxiety Disorders | 224 (53.3) | 3.38 | 4.19 | 62 (57.4) | 4.64 | 4.73 |
| Separation Anxiety Disorder | 40 (9.5) | 0.85 | 1.67 | 4 (3.7) | 0.70 | 1.31 |
| Generalized Anxiety Disorder | 128 (30.5) | 1.04 | 1.78 | 38 (35.2) | 1.69 | 2.07 |
| Specific Phobia | 118 (28.1) | 0.84 | 1.27 | 33 (30.6) | 1.02 | 1.43 |
| Social Phobia | 64 (15.2) | 0.65 | 1.65 | 17 (15.7) | 0.78 | 1.93 |
| Somatization disorders | 0 (0) | 0.03 | 0.17 | 0 (0) | 0.02 | 0.13 |

Note: Not estimated due to low prevalence in the sample

low. The adolescents who filled out the YSR ($n$ = 108) had a mean age of 13.9 years ($SD$ = 1.8). Of these, 56 (51.9%) were girls, 96% were Caucasian and their socioeconomic status was distributed as follows: 2.8% high, 19.8% medium high, 16% medium, 36.8% medium-low, and 24.5% low. Table 1 shows the prevalence of the DSM-IV disorders of interest for this study, separately for the CBCL Sample and for CBCL+YSR Sample.

*Instruments*

The *Child Behavior Checklist 6-18*, (CBCL/ 6-18; Achenbach & Rescorla, 2001) and the *Youth Self Report* (YSR 11-18; Achenbach & Rescorla, 2001) are inventories for parents and adolescents, respectively, of the Achenbach System of Empirically Based Assessment (ASEBA) School-Age Forms and Profiles. These instruments assess competencies and psychopathology (behavioral and emotional problems) in children and adolescents in dimensional terms. The CBCL contains 113 items and the YSR 112. Items assess emotional and behavioral problems over the previous 6 months, with three response options (0 = *not true,* 1 = *somewhat or sometimes true,* 2 = *very true or often true)*. The CBCL is designed for children and adolescents aged 6 to 18, while the YSR is for children and adolescents aged 11 to 18. The raw scores of the questionnaires were analyzed. Both questionnaires can yield Empirical Syndrome scores and DSM-Oriented scores. The Empirically Based Syndromes scales were originally obtained through factor analysis, and items were grouped into the following dimensions: Anxious-Depressed, Withdrawn/Depressed, Somatic Complaints, Social Problems, Thought Problems, Attention Problems, Rule-Breaking Behavior, and Aggressive Behavior. Next, according to the judgments of experts based on rational criteria, items assessing depression and dysthymia were assigned to the Affective Problems DSM-Oriented scale, items covering generalized anxiety, separation anxiety and specific phobia were assigned to the Anxiety Problems DSM-Oriented scale, the set of somatization items was included in the Somatic Problems DSM-Oriented scale, the attention deficit/hyperactivity disorder items were grouped as the Attention Deficit/Hyperactivity Problems DSM-Oriented scale, the oppositional defiant disorder items made up the Oppositional Defiant Problems DSM-Oriented scale, and the conduct disorder items made up the Conduct Problem DSM-Oriented scale. The scales have shown good psychometric properties in different populations. In Spain, the differences between the scores of clinical and normal samples are less pronounced compared to those for other countries (del Barrio & Cerezo, 1990; Sardinero, Pedreira, & Muñiz, 1997). YSR has obtained satisfactory results in test-retest reliability (Lemos, Fidalgo, Calvo, & Menéndez, 1992). The internal consistency has also been studied, yielding satisfactory results, and better for the internalizing and externalizing scales than for the first-order empirical syndromes (Abad, Forns, Amador, & Martorell, 2000; Lemos et al., 1992). Up to now, no psychometric data has been published DSM-Oriented scales in Spanish population.

In the samples for this study, Cronbach's alphas for the CBCL DSM-Oriented scales ranged from .59 (DSM-Anxiety Problems) to .82 (DSM-Conduct Problem); for the YSR DSM-Oriented scales, the alphas were between .58 (DSM-Anxiety Problems) and .86 (DSM-Affective Problems). CBCL Cronbach's alphas for Empirical Syndromes ranged from 0.65 (Thought Problems) to .89 (Aggressive Behavior); for the YSR, alphas were between .75 (Withdrawn/Depressed, Somatic Complaints and Social Problems) and .85 (Anxious/Depressed).

The *Diagnostic Interview for Children and Adolescents-IV* (Reich, 2000) was used to assess psychopathology. The DICA-IV is a semi-structured diagnostic interview that covers the most frequent diagnostic categories according to the DSM-IV (American Psychiatric Association, 1994), and has been adapted and validated for the Spanish population with satisfactory psychometric properties (Ezpeleta, et al., 1997). There are three versions, one for children (aged 8-11), one for adolescents (aged 12-17) and one for parents of 8 to 17-year-olds. The interview should be administered by trained interviewers with a good knowledge of child psychopathology. Diagnoses for this study were generated by combining the information from parents and children at the symptom level: a symptom was considered to be present if the parent *or* the child reported it.

The *Children's Global Assessment Scale (CGAS)* (Shaffer et al., 1983) is a global measure of functional impairment. Raw scores range from 1 (maximum impairment) to 100 (the best functioning). Scores higher than 70 indicate normal adjustment. The CGAS has shown satisfactory properties in studies with Spanish samples (Ezpeleta, Granero, & de la Osa, 1999).

*Procedure*

The project was approved by the ethics review committee of the authors' institution. Written consent was obtained from parents and oral consent from children. Children and parents were interviewed separately and simultaneously on arrival at outpatient services by interviewers who were unaware of the children's diagnoses. Interviewers (undergraduate psychology students and doctoral students) were trained in the use of all the assessment instruments, and their compliance with the interview protocol was checked at weekly review meetings. After completing the diagnostic interview, the interviewers rated the CGAS. The CBCL was given out to the parents for return at the next appointment.

*Data analysis*

The data analysis was carried out with SPSS19 for sing Pearson correlation ($r$). Due to the large sample size and the high power of the statistical tests, r-coefficients with a low effect size showed a trend toward statistical significance, meaning that only correlations with absolute values of over .30 were considered relevant.

The association between ASEBA Empirical Syndrome scales and ASEBA DSM-Oriented scales was calculated using Pearson correlation ($r$). Two hierarchical binary logistic regressions were used to provide incremental accuracy values for the ASEBA DSM-Oriented scales over the ASEBA Empirical Syndrome scales for predicting the presence of DSM-IV disorders (assessed with the DICA-IV and considered as the dependent variables in these models). In these analyses, the first block included the ASEBA Empirical Syndrome scores and the second block the ASEBA DSM-Oriented score. The value for the incremental predictive accuracy of the ASEBA DSM-Oriented scales was provided by the change in the Nagelkerke $R^2$ coefficient between the first and second blocks ($\Delta R^2$).

The incremental accuracy of the CBCL and YSR DSM-Oriented scales, added to the DICA-IV disorders to predict impairment (total CGAS score), was obtained with two hierarchical lineal

regressions. Presence/absence of the DSM-IV diagnosis made with the diagnostic interview was included in the model in the first block, and the ASEBA DSM-Oriented scale was added in the second block. The change in the $R^2$-coefficient ($\Delta R^2$) between the first and second blocks provided a value for the increase in predictive accuracy due to the CBCL/YSR.

## Results

### *Association between ASEBA and number of symptoms in diagnostic interview*

In the analysis of the CBCL, relevant correlations were obtained for the total number of symptoms obtained in the DICA-IV interview and the DSM-Affective Problems ($r$ = .35), DSM-Anxiety Problems ($r$ = .41) and DSM-Attention Deficit/Hyperactivity Problems ($r$ = .37) scales. However, the correlations were low between the total number of symptoms obtained with the DSM-Somatic Problems ($r$ = .20), DSM-Oppositional Defiant Problems ($r$ = .24) and DSM-Conduct Problem ($r$ = .28) scales.

For the YSR, all the correlations between the DSM-IV-Oriented scales and total symptoms obtained in the DICA-IV interview were good, with values of between $r$ = .64 (for DSM-Affective Problems) and $r$ = .30 (for DSM-Oppositional Defiant Problems).

Table 2 shows the correlations between the DSM-Oriented scales and the number of symptoms in the corresponding diagnoses made with the DICA-IV interview. For the CBCL, correlations were relevant only for the DSM-Attention Deficit/Hyperactivity Problems with ADHD and for the DSM-Conduct Problems scales with Conduct Disorder diagnosis. For the YSR data, relevant correlations were found for the DSM-Affective Problems scale with Major Depressive disorder.

### *Incremental Validity of ASEBA DSM-Oriented scales over ASEBA Empirical Syndromes scales for predicting DICA-IV disorders*

Many correlations between DSM-Oriented scales and Empirical Syndrome scales achieved statistical significance. For the CBCL, the strongest associations were for DSM-Oppositional Defiant Problems and Aggressive Behavior ($r$ = .90) and between DSM-Conduct Problems and Rule-Breaking Behavior ($r$ = .89). For the YSR, correlations with an excellent effect size were between DSM-Attention Deficit/Hyperactivity Problems and Attention Problems ($r$ = .91), DSM- Oppositional Defiant Problems and Attention Problems ($r$ = .88) and DSM-Affective Problems and Withdrawal/Depressed Syndrome ($r$ = .88).

*Table 2*
Pearson's correlation between the DSM-Oriented scales and Number of DSM-IV Symptoms

| DSM-Oriented Scales | DSM-IV Disorders | CBCL | YSR |
|---|---|---|---|
| Affective Problems | Major Depressive Disorder | .43 | .62 |
| | Dysthymia | .30 | – |
| Anxiety Problems | Separation Anxiety Disorders | .25 | – |
| | Generalized Anxiety Disorders | .29 | .32 |
| | Specific Phobia | .35 | .26 |
| | Social Phobia | .21 | .25 |
| Somatic Problems | Somatization Disorder | – | – |
| Attention Deficit/Hyperactivity | ADHD | .59 | – |
| Oppositional Defiant Problems | Oppositional Defiant Disorder | .10 | .19 |
| Conduct Problem | Conduct Disorder | .58 | .46 |

Note: Not estimated due to low prevalence

Table 3 shows the results of the logistic regressions that measure the incremental validity of the DSM-Oriented scales when added to the ASEBA Empirical Syndromes scores in the prediction of DICA-IV disorders. The CBCL DSM-Oriented scales provide increases in predictive accuracy of between 0.2% and 13.2%. DSM-Affective Problems shows the highest incremental validity: a) added to Withdrawn/Depressed Syndrome it adds 13.2% for the identification of Mood Disorders and 13% for Major Depressive disorder; and b) added to Anxious/Depressed Syndrome it increases predictive accuracy by 11.5% for Mood Disorders and 9.9% for Major Depressive disorder. The DSM-Conduct Problems scale added to Rule-Breaking Behavior Syndrome increases the prediction of Disruptive Behavior disorders by 12.3% and the prediction of Conduct Disorder by 5.7%.

The YSR DSM-Oriented scales yielded low incremental validity, and in some cases the increase in $R^2$ was not significant. DSM-Affective Problems added to Withdrawn/Depressed Syndrome increased the discrimination of Mood Disorders by 3.4% and that of DSM-IV Major Depressive disorder by 2.9%.

### *Incremental Validity of the ASEBA DSM-Oriented scales over DICA-IV diagnoses for predicting functional impairment*

Table 4 shows the results of linear regression models that measure the incremental validity of DSM-Oriented scales for predicting global functioning (CGAS score) when added to the DICA-IV diagnoses. For the CBCL data, all the DSM-Oriented scales gave significant increases in $R^2$, except for the DSM-Attention Deficit/Hyperactivity Problems and the DSM-Oppositional Defiant Problems scales (in this latter case, incremental validity was not relevant when the scale was added to DICA-IV Oppositional Defiant Disorder, but it was relevant when added to the group of Disruptive Behavior disorders). A particularly notable finding was the incremental validity obtained for the DSM-Affective Problems scale when added to the DICA-IV Dysthymia diagnosis (7.4%, which represents practically all the variability of CGAS retained in the final model). DSM-Oppositional Defiant Problems provides significant but low incremental validity (1.5%) when added to the DICA-IV Disruptive Behavior diagnosis.

For the YSR DSM-Oriented scales, incremental validity is higher than for the CBCL data, and ranges from 2.9% for DSM-Oppositional Defiant Problems to 22.7% for DSM-Affective Problems.

## Discussion

One way of verifying the usefulness of an instrument is to study what it adds to other instruments. The ASEBA DSM-Oriented scales account for an increase in validity for the diagnosis of DSM-IV Disorders, evaluated by means of structured interviews, and also in the assessment of functional impairment. This incremental validity supports the use of these techniques in conjunction when dealing with these constructs. DSM-Oriented scales make it possible to obtain, by means of a single assessment instrument

*Table 3*
Incremental Validity of the ASEBA DSM-Oriented scales over ASEBA Empirical Syndromes scales for predicting DICA-IV diagnoses

| **Independent variables (IV)** | | | | | **Dependent var.** | **Block 1 (IV1)** | | **Block 2 (IV2)** | | **Final Model** | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Block 1 (IV1)** | **Block 2 (IV2)** | **CoIt** | **r-coefficient** | | **DSM-IV** | **Initial Validity** | | **Incremental val.** | | **Total Validity** | |
| **Empirical Syndromes** | **DSM-Oriented** | **%CoIt** | **CBCL** | **YSR** | **Disorder** | **$R^2$** | **p** | **$\Delta R^2$** | **p** | **$R^2$** | **p** |
| Withdrawn/Depress. | Affective | 3 | 0.56* | 0.88* | Mood | 4.7 | <.001 | 13.2 | <.001 | 17.9 | <.001 |
| *Items CBCL: 8* | *Items: 13* | *23.1* | | | | *23.9* | *<.001* | *3.4* | *.083* | *27.3* | *<.001* |
| *Items YSR: 8* | | | | | Major Depress. | 4.4 | .001 | 13.0 | <.001 | 17.4 | <.001 |
| | | | | | | *32.2* | *<.001* | *2.9* | *.10* | *35.1* | *<.001* |
| | | | | | Dysthymia | 2.8 | .12 | 2.2 | .18 | 5.0 | .12 |
| | | | | | | – | – | – | – | – | – |
| Anxious/Depressed | Affective | 4 | 0.72* | 0.76* | Mood | 6.2 | <.001 | 11.5 | <.001 | 17.7 | <.001 |
| *Items CBCL: 13* | *Items: 13* | *30.8* | | | | *24.7* | *<.001* | *0.3* | *.59* | *25.0* | *<.001* |
| *Items YSR: 13* | | | | | Major Depress | 7.0 | <.001 | 9.9 | <.001 | 16.9 | <.001 |
| | | | | | | *34.4* | *<.001* | *0.2* | *.60* | *34.6* | *<.001* |
| | | | | | Dysthymia | 0.3 | .60 | 6.7 | .018 | 7.0 | .052 |
| | | | | | | | | | – | – | – |
| Anxious/Depress. | Anxiety | 5 | 0.81* | 0.85* | Anxiety | 10.3 | <.001 | 3.2 | .001 | 13.5 | <.001 |
| *Items CBCL: 13* | *Items: 6* | *83.3* | | | | – | – | – | – | – | – |
| *Items YSR: 13* | | | | | Separation Anx. | 6.0 | .001 | 2.2 | .044 | 8.2 | .001 |
| | | | | | | *0.1* | *.86* | *7.0* | *.19* | *7.1* | *.42* |
| | | | | | Generalized Anx. | 13.0 | <.001 | 0.8 | .16 | 13.8 | <.001 |
| | | | | | | *22.0* | *<.001* | *1.2* | *.33* | *23.2* | *<.001* |
| | | | | | Specific Phobia | 5.8 | .003 | 3.6 | .018 | 9.4 | .001 |
| | | | | | | *0.8* | *.50* | *0.9* | *.49* | *1.7* | *.62* |
| | | | | | Social Phobia | 5.6 | .001 | 0.2 | .58 | 5.8 | .002 |
| | | | | | | *15.9* | *.002* | *1.1* | *.41* | *17.0* | *.007* |
| Attention Probl. | ADHD | 5 | 0.80* | 0.91* | Disruptives | 29.0 | <.001 | 3.0 | <.001 | 32.0 | <.001 |
| *Items CBCL:10* | *Items: 7* | *71.4* | | | | *11.8* | *.002* | *2.9* | *.11* | *14.7* | *.002* |
| *Items YSR: 9* | | | | | ADHD | 31.6 | <.001 | 3.1 | .001 | 34.7 | <.001 |
| | | | | | | – | – | – | – | – | – |
| Aggressive Beh. | ODD | 5 | 0.90* | 0.88* | Disruptives | 42.6 | <.001 | 0.5 | .14 | 43.1 | <.001 |
| *Items CBCL:18* | *Items: 5* | *100* | | | | *21.9* | *<.001* | *2.7* | *.11* | *24.6* | *<.001* |
| *Items YSR: 17* | | | | | ODD | 44.1 | <.001 | 1.6 | .007 | 45.7 | <.001 |
| | | | | | | *24.5* | *<.001* | *2.9* | *.10* | *27.4* | *<.001* |
| Rule-Breaking Beh. | Conduct | 11 | 0.89* | 0.85* | Disruptives | 22.2 | <.001 | 12.3 | <.001 | 34.5 | <.001 |
| *Items CBCL:17* | *Items: 17* | *64.7* | | | | *25.7* | *<.001* | *0.0* | *.83* | *25.7* | *<.001* |
| *Items YSR: 15* | | | | | Conduct Dis. | 27.1 | <.001 | 5.7 | .002 | 32.8 | <.001 |
| | | | | | | *13.8* | *.006* | *2.4* | *.074* | *19.3* | *.004* |

Note: Normal Source: DSM-Oriented CBCL; italics: DSM-Oriented YSR. $R^2$ in percentage (%). *CoIt:* common items between Syndrome and DSM-Oriented scales. *%CoIt:* percentage of DSM-Oriented scales included into the equivalent Empirical Syndrome. ADHD: attention-deficit-hyperactivity disorder. ODD: oppositional defiant disorder. Disruptives: ADHD, ODD and conduct disorder
– Not estimated due to low prevalence
* All *r* are significant at the 0.001 level

and with no time or personnel costs, important information for dimensional and categorical assessment.

The relationship between DSM-Oriented scales and the number of symptoms, according to the DICA-IV diagnostic interview, is moderate to very high. This demonstrates a strong correlation between the DSM-Oriented scales and DSM-IV disorders. Given this association, there is a need to assess whether the DSM-Oriented scales provide a clinically significant increase in information with regard to the information provided by the Empirical Syndromes scales from the same inventory. It was found that DSM-Oriented scales increased on the information contributed by the Withdrawn/Depressed, Anxious/Depressed and Rule Breaking Behavior Syndromes.

The incremental validity of DSM-Oriented scales over Empirical Syndromes scales in the prediction of DICA-IV diagnosis shows higher values in the case of the CBCL than for the YSR. The CBCL DSM-Affective Problems scale is the one to add greatest validity to Withdrawn/Depressed Syndrome and to

*Table 4*
Incremental Validity of the ASEBA DSM-Oriented scales over DICA-IV diagnoses for predicting CGAS

| **Independent variables (IV)** | | **Block 1 (IV1)** | | **Block 2 (IV2)** | | **Final Model** | |
|---|---|---|---|---|---|---|---|
| **Block 1 (IV1)** | **Block 2 (IV2)** | **Initial Validity** | | **Incremental Validity** | | **Total Validity** | |
| **DSM-IV Disorders** | **DSM-Oriented scales** | **$R^2$** | **p** | **$\Delta R^2$** | **p** | **$R^2$** | **p** |
| Mood | Affective | 8.2 | <.001 | 3.4 | <.001 | 11.6 | <.001 |
| | | *10.9* | *<.001* | *14.0* | *<.001* | *24.9* | *<.001* |
| Major Depressive | | 9.1 | <.001 | 3.2 | <.001 | 12.3 | <.001 |
| | | *10.4* | *.001* | *13.5* | *<.001* | *23.9* | *<.001* |
| Dysthymia | | 0.0 | .68 | 7.4 | <.001 | 7.5 | <.001 |
| | | – | – | – | – | – | – |
| Anxiety Disorders | Anxiety | 0.6 | .12 | 3.4 | <.001 | 4.0 | <.001 |
| | | *12.5* | *<.001* | *12.9* | *<.001* | *25.4* | *<.001* |
| Separation Anxiety | | 1.3 | .021 | 3.1 | <.001 | 4.4 | <.001 |
| | | – | – | – | – | – | – |
| Generalized Anxiety | | 3.1 | <.001 | 2.3 | .002 | 5.3 | <.001 |
| | | *13.4* | *<.001* | *12.9* | *<.001* | *26.3* | *<.001* |
| Specific Phobia | | 0.6 | .28 | 5.8 | .001 | 6.4 | .001 |
| | | *3.4* | *.18* | *5.7* | *.078* | *9.0* | *.085* |
| Social Phobia | | 1.0 | .041 | 3.5 | <.001 | 4.5 | <.001 |
| | | *5.1* | *.019* | *17.0* | *<.001* | *22.1* | *<.001* |
| Disruptive Behavior | ADHD | 5.8 | <.001 | 0.0 | .82 | 5.8 | <.001 |
| | | *8.0* | *.003* | *5.3* | *.013* | *13.3* | *.001* |
| ADHD | | 0.8 | .075 | 0.9 | .054 | 1.6 | .032 |
| | | – | – | – | – | – | – |
| Disruptive Behavior | Oppositional Defiant | 5.8 | <.001 | 1.5 | .009 | 7.3 | <.001 |
| | | *8.0* | *.003* | *3.0* | *.061* | *11.0* | *.002* |
| Oppositional Defiant | | 8.3 | <.001 | 0.6 | .091 | 8.9 | <.001 |
| | | *8.1* | *.003* | *2.9* | *.068* | *11.0* | *.002* |
| Disruptive Behavior | Conduct Problems | 5.8 | <.001 | 3.1 | <.001 | 8.9 | <.001 |
| | | *8.0* | *.003* | *4.0* | *.032* | *12.0* | *.001* |
| Conduct Disorder | | 5.6 | <.001 | 3.7 | <.001 | 9.3 | <.001 |
| | | *2.6* | *.098* | *6.2* | *.009* | *8.8* | *.008* |

Note: Normal Source: DSM-Oriented CBCL; italics: DSM-Oriented YSR. $R^2$ in percentage (%). - Not estimated due to low prevalence

Anxious/Depressed Syndrome of Major Depressive disorder and Mood Disorders in general. Validity studies of the DSM-Affective Problems scale, the CBCL and YSR show the correspondence of this scale with DSM diagnoses of Major Depression and Dysthymia (Ferdinand, 2007, 2008). Other studies, in contrast, consider insufficient the sensitivity, specificity and predictive power of the DSM-Affective Problems scale for predicting diagnoses based on ICD-10 criteria (Eimecke, Remschmidt, & Mattejat, 2011), and maintain that the information contributed by this scale is no better than that provided by Anxious/Depressed Syndrome or the score on internalizing symptoms from the same inventory (Dingle, et al., 2010). The DSM-Anxiety Problems scale has shown low incremental validity values in the CBCL and YSR. In this regard, Ferdinand (2007) and Kendall, et al. (2007) propose the inclusion of new items in this scale that would improve the prediction of Anxiety diagnoses. According to the present results, the DSM-Oriented scales of internalizing problems for the assessment of affective problems provide increased validity over Empirical Syndromes scales, which have traditionally shown weaker and less specific associations than syndromes scale for behavioral disorders (Lengua, Sadowski, Friedrich, & Fisher, 2001). In Spain, the ASEBA instruments are commonly used to evaluate externalizing disorders (Abad, Forns, & Gómez, 2001; Abad & Forns, 2008; Sandoval, Lemos, & Vallejo, 2006).

In the context of externalizing disorders, the DSM-Conduct Problems scale makes a notable contribution to the diagnostic clarification of DSM Disruptive Behavior disorders. These results support those published by Aebi, Metzke and Steinhausen (2010), but differ from those of Ebesutani et al. (2010), who found that the DSM-Conduct Problems scale and the Rule-Breaking Behavior Syndrome obtain similar results when assessing Disruptive Behavior disorders. The fact that these authors generated DSM-IV

diagnoses solely on the basis of information provided by parents may explain their results.

The results reported allow us to conclude that the DSM-Oriented scales of the CBCL and YSR provide an increase in validity over the Empirical Syndromes scales. Some items are common to the DSM-Oriented scales and Empirical Syndromes scales, and this may explain why, in the cases of both the CBCL and the YSR, the highest incremental validity values were observed for the DSM-Affective Problems scale, which is less similar to its counterpart, Withdrawn/Depressed Syndrome.

The contribution to the prediction of DSM-IV Disorders and the impairment associated with these could be related to the fact that this scale incorporates new items. The DSM-Oriented scales presented considerable incremental validity with regard to the DICA-IV diagnoses for predicting functional impairment. The CBCL DSM-Oriented scales that presented the highest values of incremental validity were DSM-Affective Problems and DSM-Anxiety Problems. This is interesting insofar as the use of these dimensions could provide relevant information on how internalizing disorders affect children's daily functioning, these being disorders on which parents commonly provide less accurate information. These CBCL DSM-Oriented scales also contribute relevant information for the assessment of impairment in disorders such as Specific Phobia and Dysthymia, in relation to the variability explained by DSM-IV disorders. The incremental validity values of the YSR DSM-Oriented scales are higher than those observed for the CBCL DSM-Oriented scales. DSM-Affective Problems and DSM-Anxiety Problems are also the scales that present the highest incremental validity values, which significantly exceed those observed for the CBCL DSM-Oriented scales.

The ASEBA DSM-Oriented scales represent a response to Lengua et al. (2001), who suggested a conceptual or rational refinement of the CBCL instruments. With a view to increasing sensitivity in the quantification of these scales, the inclusion of a wider range of possible scores based on the frequencies of behaviors should be considered.

In conclusion, the results indicate that the DSM-Oriented scales provide relevant information for the assessment of functional impairment, and their use in conjunction with DSM-IV diagnoses is therefore recommended in clinical practice. These scales are faster to apply than an interview and provide a good complement in assesment. This incremental validity in diagnostic process is more notable in the case of the YSR, and less so in that of the CBCL. The contribution of the DSM-Oriented scales with respect to that of the Empirical Syndromes scales in the prediction of DSM-IV diagnoses does not appear to be so relevant. However, certain limitations must be considered when interpreting these results, such as the sample size for the YSR, which was more reduced than the CBCL sample, and the low number of participants in certain diagnostic groups, which may have decreased the power in some analyzes. The results of this study are generalizable only to children who attend psychological consultations.Future studies will need to overcome the limitations of this investigation by studying the performance of the DSM scales in non-clinical populations.

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