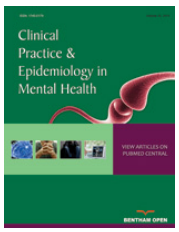

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REVIEW ARTICLE

Early Detection of Behavioral and Emotional Problems in School-Aged Children and Adolescents: The Parent Questionnaires

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Abstract:

Introduction:

Early detection of behavioral and emotional problems in children and adolescents is relevant. For this purpose, the use of questionnaires completed by parents is applicable. Parent questionnaires are also useful preliminary support to the clinical investigation.

Methods:

Validated tools for the analysis of behavioral and emotional problems suitable for school-age subjects are analyzed in their characteristics and possibilities of use.

Results:

The following are the main characteristics of the instruments examined. The Child and Adolescent Symptom Inventory 4&5, Parent Checklist (CASI-4&5) and Behavior Assessment System For Children - Parent Rating Scales 2&3 (BASC-2&3) include a high number of questions, with exploration extended to almost all possible pathologies.

The Child Behavior Check-List (CBCL) has less items (113), but only 48 refer to DSM pathologies. The use of CASI, BASC and CBCL carries a cost because they are copyrighted.

The Pediatric Symptom Checklist (PSC) has 35 items, but only 17 have a reference to 3 clinical areas. The Strength & Difficulties Questionnaire (SDA) is very short (25 items) and concerns only the main externalizing and internalizing disorders. The Child and Adolescent Behavior Inventory (CABI) has 75 items and explores a wide range of psycho-pathological issues, likewise CASI and BASC. PSC, SDA and CABI can be used free of charge.

Conclusion:

The comparison of the characteristics of the aforementioned questionnaires can guide the psychiatrist and the epidemiologist in choosing the most suitable tool for what is proposed to be assessed, in relation to practicability, extension of the areas explored and costs.

Keywords: BASC, CABI, CASI, CBCL, Parent questionnaire, PSC, SDQ.

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1. INTRODUCTION

1.1. The Importance of Early Detection.

It is increasingly clear that mental health is largely based on appropriate life experience and conduct and on any corrective actions that must take place early in the development of the individual. The awareness of this fact makes itincreasingly necessary for a civil society to guarantee conditions of mental hygiene ("primary prevention"), which aims to avoid or correct all the factors and elements that can negatively affect mental health, and of a "secondary prevention", which aims to identify early and adequately treat those who present symptoms of a disorder.

The identification phase of secondary prevention is strongly based on diagnostic screening, for which the most practical place to implement is the school. Diagnostic screenings in school are strongly recommended [1 - 4].

For an early identification in school age, the most suitable

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tools appear to be those that involve parents in asking for information on the emotions and behavior of their children. Teachers may be helpful in reporting externalizing behaviors, but they can hardly detect internalizing problems unless they are very relevant. Children at least 8 years old and adolescents can answer appropriate self-administered questionnaires, which are reliable, within certain limits, for the internalizing disorders, but not for the externalizing ones. Obviously, the use of the three sources ("multi-informant assessment") gives the possibility of having more reliable data, even if further work is needed to evaluate the differences found.

1.2. The Questionnaires For Parents

Parent questionnaires are probably the most used tools. They can be used both in the clinic as a first or further data collection to be used in subsequent evaluations, and for epidemiological studies. They can also be used by the pediatrician, who can have them filled out by the parents to assess the possible existence of problems such as to recommend the intervention of a pedopsychiatrist.

The questionnaires can be "targeted", that is specific for a certain problem (*e.g*. anxiety disorders or a type of anxiety disorder such as social anxiety) or "broad-band", that is aimed at exploring at least the most frequent and predominant clinical conditions. In this mini-review, we focus on broad-band instruments, indeed aiming to underline the importance of an extensive exploration of psychopathology, in order to give the clinician as much information as possible on the problems presented by the child-adolescent.

In their formulation, the questionnaires can present the items grouped according to the clinical problems to be explored or distributed randomly. This second case makes a direct evaluation of the results impractical, thus requiring the use of a correction grid.

Like all diagnostic tools, these questionnaires must be "validated". This term refers to different procedures, of which the most important, indeed fundamental, is the ability to differentiate the subject with pathology from one without. It is also important that the instrument is able to identify the type of pathology (*e.g*. depressive) and not simply indicate in a generic way that the subject may have a pathology. In the validation procedure, the comparison with another well-validated instrument is frequently used. However, this comparative validation between instruments ("concurrent validity") cannot be a guarantee of the ability to identify a clinical state of pathology. It is necessary that the results provided by the instrument are compared with the definitive clinical data, that is the clinical diagnose(s) obtained through appropriate multiple evaluations. The closer the results are to the clinical data, evaluated as "sensitivity", "specificity", "accuracy" and ROC evaluation, the greater the clinical validity of the instrument. The other types of validation are elements that do not add much to the clinical criterion validity.

1.3. Purpose of the Review

This review aims to analyze those questionnaires for parents of school-aged subjects, who explore behavioral and emotional problems on a wide range; only those for which there are adequate validation data, are taken into consideration. The analysis concerns the composition of the questionnaires, in relation to the problem areas explored, the number of items and their clinical relevance, and assesses their different characteristics and the results of comparative studies among them.

2. METHODOLOGY

The questionnaires were chosen on the basis of those mentioned in English literature in epidemiological and clinical studies in the sectors of "parent questionnaires", "school-age subjects" and a broad spectrum of "behavioral and emotional problems". Those exploring single problem areas and those that were not accompanied by adequate validation studies were excluded. A basis for verifying the completeness of usable tools was the systematic review performed by Thabrew *et al* (2017) [4].

3. RESULTS

3.1. Characteristics of Some Parent Questionnaires

The characteristic elements of the broadband, structured and validated parent questionnaires are described below, following the order of first publication. A summary is shown in Table **1**.

3.1.1. Pediatric Symptom Checklist (PSC)

PSC [4 - 6] is a 35-item questionnaire for subjects 4 years old and above. PSC gives a total problem score, with a cut-off score of 28 as a criterion for a disorder; however, further studies identified cutoff scores ranging from 12 to 24.

In a screening on school-age children, Jellinek *et al*. [7] found PSC having a specificity of 0.68 and a sensitivity of 0.95. Several children, whose pediatricians' ratings had indicated adequate functioning, were identified by the PSC as having substantial psychosocial dysfunction and requiring further evaluation.

To overcome the limit of a global assessment for the presence of pathology, subsequently, the authors indicated 3 groups of items (see the website of the Massachusetts General Hospital): 1.attention problem (5 items), 2.internalizing (5 items), 3.externalizing (7 items) subscales, being the other 18 items unattributed. The relevant 17 items have been proposed as Pediatric Symptom Checklist-17 (PSC-17). The validation study of PSC-17 [8] using ROC procedures, established a cut-off of 15 (on a maximum score of 34).

Mean sensitivity of PSC resulted .75 (95% CI .08) and mean specificity .88 (95% CI .04) on the basis of 28 studies evaluated by Lavigne *et al*. [9, 10].

PSQ is available online, free of charge.

3.1.2. Child Behavior Check-List (CBCL)

This parent questionnaire [10] includes 113 (+7) questions related to behavioral problems of children and adolescents 6-18 years. It is by far the most widely used (over 2300 citations in PubMed).

Initially, on the basis of factor analysis, the CBCL was

subdivided into 8 syndromic scales: 1. Anxious/Depressed, 2. Withdrawn/Depressed, 3. Somatic Complaints (all 3 summed as Internalizing disorders), 4. Social Problems, 5. Thought Problems, 6. Attention Problems, 7. Rule-Breaking Behavior, 8. Aggressive behavior (7 and 8 summed as Externalizing disorders), plus one scale as "other problems". A "dysregulation profile" (CBCL-DP) has been proposed [11] for the case of simultaneous extreme values on the syndrome scales 1. Anxious/Depressed, 6. Attention Problems, and 8. Aggressive Behavior. The CBCCL-DP has been suggested to be associated with disruptive behavior disorders, suicidal behavior, and reduced need for sleep. However, according to Deutz *et al*. [12], it only "reflects a broad syndrome of dysregulation that exists in addition to specific syndromes of emotional symptoms, conduct problems, and hyperactivity-inattention".

An obsessive-compulsive scale (CBCL-OCD) with 8 items has also been proposed [13]; however, among the 8 items only 3 result specific of OCD according to the DSM (item 9: Can't get his/her mind off certain thoughts - obsessions; item 31: Feels he/she might think or do something bad; item 66: Repeats certain acts over and over - compulsions), the other referring to anxiety or various though problems.

The original syndromic scales of CBCL, derived from the first-factor analysis, do not correspond to the current classification of psychopathological groups; moreover, several items do not appropriately refer to the indicated syndromic area. This led to a new grouping of items under 6 scales [14] consistent with the DSM-IV-TR definitions [15] and valid also for the DSM-5 [16].

The six DSM-oriented scales of CBCL comprise 55 of the total 113 items, selected for their correspondence to the symptoms indicated by the DSM-IV (still valid for the DSM-5) as belonging to the following diagnostic groups: affective (= depressive; 13 items), anxiety (6), somatic (7), attention-deficit hyperactivity (7), oppositional-defiant (5) and conduct (17) problems.

Note that the "somatic problem" scale is not an index of a "Somatic symptom disorder". This is not identified by the number of somatic symptoms (which gives the score at the scale), but by the excessive focus on the symptoms, which causes emotional distress and anxiety. Therefore, the clinical hallmark of the "Somatic symptom disorder" is a focalized anxiety, and not the presence of a greater or lesser number of somatic symptoms. Therefore, the somatic scale does not correspond to a clinical disorder, and consequently, the actual DSM-oriented scales are 5, including 48 items.

Validity and reliability of the DSM-oriented scales have been documented [14]. Normative data for children and adolescents 6 to 18years old are available and the kit that is sold includes the ability to get T scores by entering raw data into a computer program. Two age groups are distinct: 6-11 and 12- 18 years old.

Mean sensitivity of CBCL resulted in .63 (95% CI .08) and mean specificity .84 (95% CI .06) on the basis of 22 studies evaluated by Lavigne *et al*. [9].

There is a version for teacher (TRF), in which about 20 CBCL items have been modified.

The use of CBCL is covered by copyright.

3.1.3. Strengths and Difficulties Questionnaire (SDQ)

The SDQ parent version [17], used also for teachers, is a brief screening questionnaire that can be completed by the parents of children-adolescents aged 4 and older. The scale asks for 25 attributes, a few positive and others negative. The 25 items are divided between 5 scales, the first 4 exploring 1) emotional symptoms (5 items), 2) conduct problems (5 items), 3) hyperactivity/inattention (5 items), 4) peer relationship problems (5 items); added together, the 20 items generate a total "difficulty" score. Further, 5 items constitute the "prosocial behaviour" score ("strength" score).

The SDQ identified over 70% of individuals with conduct, hyperactivity, depressive and some anxiety disorders, according to Goodman *et al*. [18]. SDQ scores above the 90th percentile predicted a substantially raised probability of independently diagnosed psychiatric disorders [19]. In relation to the specific problem of ADHD, the predictive validity of the SDQ was satisfactory [20].

A dysregulation profile of the SDQ (SDQ-DP), like the CBCL-DP, according to Deutz *et al*. [12] has the limitation already reported under the heading CBCL.

The mean sensitivity of SDQ resulted in .65 (95% CI .08) and mean specificity .76 (95% CI .07) on the basis of 32 studies evaluated by Lavigne *et al*. [9].

German, Finnish and Dutch versions of SDQ are validated. The parent-SDQ (and teacher-rated SDQ) resulted valid and reliable for different ethnic groups within the Dutch society, however, with differences in reliability and validity of the subscales, which makes its interpretation difficult for certain ethnic groups [21].

The use of the SDQ is free, available online.

3.1.4. Child and Adolescent Symptom Inventory 4 (CASI-4) Parent Checklist

The CASI-4R brings together the CSI-4, usable for children 5 and 12 years old and contains 97 items, and ASI-4, for teenagers 12-18 years containing 120 items [22 - 24]. The CASI-4R Parent Checklist for subjects 5 to 18 years contains 142 items.

Since 2013, updated according to the new nosographic changes made from the DSM-IV to the DSM-5, there is the CASI-5 version, that includes all of the items from the CASI-4R (http://www.checkmateplus.com/product/casi5.htm).

The CASI-4&5 are 4-points scales. Items are grouped in relation to the psychopathological areas they explore. The symptoms of the following disorders are assessed: ADHD, oppositional defiant disorder, conduct disorder, generalized anxiety disorder, social phobia, separation anxiety disorder, major depressive episode, manic episode, dysthymic disorder, schizophrenia, autistic/Asperger's disorder, anorexia, and bulimia. One or two key symptoms of each of the following disorders are also included: obsessive-compulsive disorder,

specific phobia, panic attack, motor tics, vocal tics, and substance use.

Reliability, convergent and discriminant validity, and clinical utility (intended as sensitivity and specificity *versus* DICA-P interview diagnoses) were confirmed by Sprafkin *et al*. [25].

There is also a Teacher Checklist (CASI-4R-TC) containing 105 items.

The use of CASI-4&5 is covered by copyright.

3.1.5. Behavior Assessment System for Children-2&3 (BASC-2&3)

This "system" is a comprehensive set of rating scales that in addition to Parent Rating Scale (PRS) includes a Teacher Rating Scales (TRS, with 100 to 139 items), a Self-Report of Personality (SRP, completed by the child or adolescent) and a Student Observation System [26].

The BASC-PRS has three versions with varying numbers of items for different age groups (preschool, 134 items; child, 160 items; adolescent, 150 items); it uses a 4-point scale.

It includes the following scales: Activities of Daily Living, Adaptability, Aggression, Anxiety, Attention Problems, Atypicality, Conduct Problems, Depression, Functional Communication, Hyperactivity, Leadership, Learning Problems, Social Skills, Somatization, Study Skills, and Withdrawal.

According to Kamphaus & Frick [27], the BASC-PRS exhibits good correlations with analogous scales from other parent rating scales. In Korean children, Song *et al*. [28] found BASC-PRS valid for measuring developmental psychopathology.

The BASC series is covered by copyright.

3.1.6. Child and Adolescent Behavior Inventory (CABI)

The CABI [29, 30] questionnaire consists of 75 questions to parents/caregivers. These explore a wide range of problem areas: somatic, anxiety, phobias, obsessive-compulsive, insecurity, depression, irritability, oppositional-defiant, conduct, impulsivity, hyperactivity, attention deficit, reality evaluation, social relationships, sphincter control, bulimia, anorexia, sex interest, smoking, alcohol and substance abuse, school performance and being bullied.

In the CABI, some problems that can belong to two or more disorders are grouped separately: "sleep problems", located among somatic symptoms, according to DSM-5 can be part of both depression and generalized anxiety; "irritability", held as a separate subscale, can be part of depression, generalized anxiety and oppositional defiant disorder. In this way, the pedopsychiatrist more correctly assesses their clinical significance.

Psychometrics properties, including internal consistency, factor analysis, normative data together with a comparative and clinical criterion evaluation on a small number of cases are reported by Cianchetti *et al*. [29, 30]. Predictive validity for the clinical diagnosis on 462 subjects has been recently published [31]. The normative data are different in relation to gender and age, and 3 age groups are distinct: 6-10, 11-13 and 14-18 years old.

The use of the CABI is free, available on Cianchetti *et al*. [29] or by direct request to the author.

3.2. Studies Comparing The Parent Questionnaires

A comparison between the above-described questionnaires was carried out almost exclusively between CBCL and the others, probably because CBCL is largely the most widespread and therefore has been taken as the main reference tool. To make it easier for the reader to evaluate the differences between the questionnaires, the items of CBCL, CABI and SDQ are compared with the DSM-5 diagnostic criteria in Tables (**2**-**5**).

3.2.1. PSC

The PSC as a total score was effective in identifying subjects with psychosocial problems taking as reference the CBCL total assessment scores [32, 33]. Similar results were obtained with a simultaneous comparison with total scores of CBCL and of SDQ by Vogels *et al*. [34]. The reduced form PSC-17 was compared with the total scores of CBCL, showing excellent classification accuracy [35]. It should be noted that these are data relating to the total score, therefore indicating the presence of problems, without specification on their type.

3.2.2. CBCL

As indicated above, see each of the other instruments.

3.2.3. SDQ

Scores from the SDQ and CBCL have been reported as highly correlated and equally able to discriminate psychiatric from non-psychiatric cases, with the SDQ significantly better than the CBCL at detecting inattention and hyperactivity, and at least as good at detecting internalising and externalising problems [36].

Comparable diagnostic accuracy of SDQ and CBCL in detecting common emotional and behavioral disorders was also found by Kovacs & Sharp [37].

Table 1. Main characteristic of the parent questionnaires described.

Parent Questionnaire	Reference	Age Range	Number of Items	Problems Evaluated	Grouping of Items	Validation	Cost Per Single Administration
PSC	Jellinek et al. 1986	4 to 18	35	attention (5 items), internalizing (5 items), externalizing (7 items), various (18 items)	no (needs grid)	yes	free
CBCL	Achenbach 1991	6 to 18	113	affective (13 items), anxiety (6), somatic (7), ADHD (7), ODD (5), conduct (17)	no (needs grid)	yes	US$ 1.80*

(Table 1) cont.....

SDQ	Goodman 1997	4 to 18	25	emotional (5 items), conduct (5 items), hyperactivity/inattention (5 items), peer relationship (5 items)	yes	yes	free
CASI-4&5 (CSI-4 & ASI-4)	Gadow & Sprafkin 1998	5 to 18 (5 to 12 & 12 to 18)	142&173 (97 & 120)	ADHD, ODD, conduct, generalized anxety, social anxiety, separation anxiety, major depressive, dysthymic/persistent depressive, DMDD, mania, schizophrenia, ASD, anorexia, bulimia, OCD, specific phobia, panic attack, tics, substance use	yes	yes	US$ 2.50
BASC 2&3, PRS	Reynolds & Kamphaus 2004	6 to 11 & 12 to 21	139 to 175	activities of daily living, adaptability, aggression, anxiety, attention, atypicality, conduct, depression, communication, hyperactivity, leadership, learning, social skills, somatization, study skills, withdrawal.	no	yes	US$ 3.97*
CABI	Cianchetti et al. 2013	6 to 18	75	somatic, anxiety, phobias, OCD, insecurity, depression, irritability, ODD, conduct, ADHD, reality evaluation, social relationships, sphincter control, bulimia, anorexia, sex interest, substance abuse, school, being bullied	yes	yes	free
* calculated by Thebrew et al., 2017 [4]							

Table 2. Depressive problems: comparison of the items of the CBCL, CABI and SDQ questionnaires and the DSM-5 diagnostic criteria.

DSM-5		**CBCL**		**CABI**			**SDQ**
Depressed mood	-	103.Unhappy, sad, or depressed	14.Cries a lot	19. He cries for no reason or about unimportant things	20. He often seems sad	21.He is often in a black mood (“depressed” mood)	13.Often unhappy, depressed or tearful
Loss of interest or pleasure	-	5.There is very little he/she enjoys	-	23.He shows no interest, not even in pleasant things	-	-	-
Weight loss or weight gain, or decrease or increase in appetite	Appetite or weight disturbance	24.Doesn't eat well		67.He has recently lost a lot of weight	-	-	-
Insomnia or hypersomnia	-	76.Sleeps less 77.Sleeps more	100.Trouble sleeping	3.He finds it difficult to fall asleep or says he does not sleep well	4.His sleep is disturbed by nightmares or waking up during the night	-	-
Slowing down of thought and a reduction of physical movemen	Psychomotor agitation or retardation	102.Underactive, slow moving, or lacks energy	-	-	-	-	-
Fatigue or loss of energy	-	54.Overtired without good reason	-	25.He is often tired or listless; everything exhausts him	-	-	-
Feelings of worthlessness or excessive or inappropriate guilt	-	52.Feels too guilty	35.Feels worthless or inferior	24. He feels inferior to others; he has low self-esteem	26.He blames himself too much	-	-
Diminished ability to think or concentrate, or indecisiveness,	Poor concentration	8.Can't concentrate, can't pay attention for long	-	49.He has trouble concentrating while doing his homework	-	-	15.Easily distracted, concentration wanders
Recurrent thoughts of death, recurrent suicidal ideation	Suicidality	18.Deliberately harms self or attempts suicide	91.Talks about killing self	27. He has sometimes said he does not want to live any longer	28. He has hurt himself or tried to hurt himself	-	-

Table 3. Anxiety problems: comparison of the items of the CBCL, CABI and SDQ questionnaires and the DSM-5 diagnostic criteria.

DSM-5	CBCL	CABI	SDQ
Excessive anxiety and worry	112.Worries	6.He tends to worry about everything	8.Many worries or often seems worried
Restlessness or feeling keyed up or on edge	45.Nervous, highstrung or tense	5.He appears tense and/or anxious	16.Nervous or clingy in new situations, easily loses confidence
Being easily fatigued	-	25.He is often tired or listless; everything exhausts him	-
Difficulty concentrating or mind going blank	-	49.He has trouble concentrating while doing his homework	15.Easily distracted, concentration wanders
Irritability	86.Stubborn, sullen or irritable	29.He is very irritable	5.Often loses temper
Muscle tension	-	-	-
Sleep disturbance (difficulty falling or staying asleep, or restless unsatisfying sleep)	-	3.He finds it difficult to fall asleep or says he does not sleep well	-
-	50.Too fearful or anxious	-	24.Many fears, easily scared
-	11.Clings to adult or too dependent	8.It is hard for him to be separated or far from his parents	-
-	30.Fears going to school	7.He worries about school too much	-
-	29.Fears certain animals, situations or places	11.He is excessively afraid of something (e.g dark, be alone, insects, thieves)	-

Table 4. ADHD problems: comparison of the items of the CBCL, CABI and SDQ questionnaires and the DSM-5 diagnostic criteria.

DSM-5	CBCL	CABI	SDQ
Aa.Often fails to give close attention to details or makes careless mistakes	-	49.He has trouble concentrating while doing his homework	*25.Good attention span, sees chores or homework through to the end*
Ab.Often has difficulty sustaining attention in tasks or play activities	8.Can't concentrate, cant' pay attetion for long	50.He has trouble paying attention to something for a long period	-
Ac.Often does not seem to listen when spoken to directly	-	-	-
Ad.Often does not follow through on instructions and fails to finish schoolwork, chores, or duties	4.Fails to finish things he/she starts	-	-
Ae.Often has difficulty organizing tasks and activities	-	-	-
Af.Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort	-	-	-
Ag.Often loses things necessary for tasks or activities	-	-	-

(Table 4) cont.....

Ah.Is often easily distracted by extraneous stimuli	78.Inattentive or easily distracted	-	15.Easily distracted, concentration wander
Ai.Is often forgetful in daily activities	-	-	-
-	-	51.He gets tired very quickly even when he is playing	-
Ha.Often fidgets with or taps hands or feet or squirms in seat.	10.Can't sit still, restless or hyperactive	-	10.Constantly fidgeting or squirming
Hb.Often leaves seat in situations when remaining seated is expected	-	47.He cannot sit down for a long time but has to get up	2.Restless, overactive, cannot stay still for long
Hc.Often runs about or climbs in situations where it is inappropriate	-	48.He runs and jumps everywhere in an exaggerated way	-
Hd.Often unable to play or engage in leisure activities quietly.	-	-	-
He.Is often "on the go," acting as if "driven by a motor"	-	46.He is always moving around and cannot stay still	-
Hf.Often talks excessively.	93.Talks too much	-	-
Hg.Often blurts out an answer before a question has been completed	-	-	-
Hh.Often has difficulty waiting his or her turn	-	44.He tends not to take turns when he is playing	-
Hi.Often interrupts or intrudes on others	-	45.He interrupts, disturbing games or others' conversations	-
-	41.Impulsive or acts without thinking	46.He is impulsive and acts before thinking	*21.Thinks things out before acting*
-	104.Unusually loud	-	-

Table 5. Oppositional-defiant problems: comparison of the items of the CBCL, CABI and SDQ questionnaires and the DSM-5 diagnostic criteria.

DSM	CBCL	CABI	SDQ
Often loses temper	95.Temper tantrums or hot temper	32.He is quick-tempered and has fits of anger	5.Often has temper tantrums or hot tempers
Is often touchy or easily annoyed	86.Stubborn, sullen, or irritable	29.He is very irritable	-
Is often angry and resentful	-	30.He often gets angry, even about unimportant things	-
Often argues with authority figures or, for children and adolescents, with adults -	3.Argues a lot	-	-
Often actively defies or refuses to comply with requests from authority figures or with rules	22.Disobedient at home 23.Disobediant at school	33.He does not obey and it is difficult to make him obey	*7.Generally well behaved, usually does what adults request*
Often deliberately annoys others	-	38.He bothers and intentionally annoys others	-
Often blames others for his or her mistakes or misbehavior	-	-	-

(Table 5) cont.....

Has been spiteful or vindictive at least twice within the past 6 months.	-	-	-
-	-	34.He does not follow the rules	-
-	-	37.He quarrels frequently	-

In a study by Sheldrick *et al*. [38], where total scale values were considered, the SDQ showed a mean positive predictive value around 77%, against CBCL around 61%, and mean sensitivity around 19%, against CBCL around 38%. In the study by Kuhn *et al*. [39], SDQ and DAWBA adequately predicted the presence of an ICD-10 disorder.

The Dutch version of the SDQ, similar to the English and German versions, has equal validity as the Dutch ASEBA for screening children, according to Janssens & Deboutte [40].

3.2.4. CASI-4, CSI/ASI-4

The ratings of the parent version of the Child Symptom Inventory (CSI-4) converged and diverged in a theoretically consistent pattern with respective scales of the CBCL and the Diagnostic Interview for Children and Adolescents-Revised-Parent Version (DICA-P), and boys with specific DICA-P diagnoses received significantly higher corresponding CSI-4 parent symptom ratings than boys not so diagnosed [25].

3.2.5. BASC

The validity of the BASC-PRS has been found comparable to that of the CBCL/4-18 for assessing childhood ADHD and disruptive behavior [41], while according to Ostrander *et al*. [42] for distinguishing ADHD students from non-ADHD students the BASC model was more parsimonious and accurate than the CBCL. While the correlations between similarly named scales on the BASC-2 and CBCL were nonsignificant, according to Jacola *et al*. [43], BASC-2 and CBCL were not statistically different from each other in sensitivity to change of youth treatment outcome [44]. More recently, Gabrielli *et al*. [45] stated that the BASC-2 PRS, when compared to the CBCL, consistently performed well as a measure of behavioral outcome in the assessment of youth in foster care.

3.2.6. CABI

The comparison of the CABI with CBCL had the purpose of verifying their degree of predictivity towards the final clinical diagnosis, *i.e*., the ability to discriminate the pathological from the non-pathological, which is the basic objective of these tools. The CBCL, as mentioned above, it is able to provide data only in relation to 5 areas of clinical diagnosis (the 6th, "somatic symptoms" is not a clinically autonomous area, a said above in the section "CBCL"). For this reason, even if the CABI explores a much broader range of pathologies, the comparison has taken place in relation to these 5 areas, *i.e*., 1. affective problems (a term used by CBCL to indicate "depression"), 2. anxiety, 3. ADHD, 4. ODD and 5. CD. A study on 462 subjects [29] found that the accuracy values (probability of correct classification) were high for both instruments, and significantly better for CABI anxiety and ADHD scales, and for CBCL ODD and CD scales; no significant difference was found for depression scales. The areas under the curve of the receiver operating characteristic analysis confirmed anxiety and ADHD scales of the CABI having a better predictive ability than those of the CBCL, with not statistical differences between the other scales.

4. DISCUSSION

4.1. Considerations for the Use of Tools

The parent questionnaires above described obtained the general validation criteria for the proposed use. The choice of the questionnaire to be used must, therefore, be based on the different characteristics.

1. The first point should be the number of emotional and behavioral problems for which the questionnaire can give the clinician information on their presence or not in the examined subject. The clinician must decide whether it is sufficient for him to have information on the main externalizing and internalizing conditions, in which case he can use a short tool like SDQ and PSC. Instead, if he requires a predictive orientation extended to many more clinical problems, he must use one of the other tools. He must keep in mind that the CBCL gives information only on 5 psychopathological areas (depression, anxiety, ADHD, ODD, CD), even if these are the most frequent, while BASC, CABI and CASI give information on almost all the psychopathological areas and this it is important because screening should allow wide-ranging explorations.

2. Another point is the commitment required by the parent to complete the questionnaire, which depends on the number of items. It is likely that in a screening in schools, which parents do not always access very willingly, requesting answers to a high number of items is a disincentive for a careful and correct compilation. BASC and CASI, and CBCL to a lesser extent, are therefore disadvantaged in this condition.

If, on the other hand, the compilation is proposed to a parent who has asked for a consultation for the child, he is certainly interested in responding scrupulously and will commit himself to a high number of items, even if it will be easier for him to deal with an intermediate number.

It should also be considered how many items are really useful for assessing the presence of the clinical disorder. For example, the CBCL has 113 items (+ 7 somatic), but only 48 explore the pathologies that can be identified by the questionnaire; therefore, the parent is called to respond on a high number of items that the clinician is not able to use in relation to the pathology.

3. In cases of use of the questionnaires as a preliminary, in association with the clinical examination, the grouping of the items according to the psychopathological areas, as happens in the CABI and the CASI, is an advantage for the examiner. Before facing the direct interview with the parent, with a glance at the answers he can become aware of the problems in relation to which he will have to deepen the interview.

Furthermore, the parent, who comes to consult for a specific problem, faced with a wide series of questions on different situations, will be able to realize problems that he had not spontaneously detected; thus, signaling them, he will help the clinician not to miss any comorbidities, which are frequent in developmental psychopathology.

4. A final criterion for the choice, not insignificant in case of very wide use as for the screening, is the cost that involves the use of those tools that are covered by copyright, like BASC, CASI and CBCL (Table **1**).

CONCLUSION

As observed, the tools available are not few, but each has its strengths and weaknesses. The next commitment should be to perfect the existing ones in order to reach the choice of a more limited number of questionnaires that allow a wide exploration.

To facilitate the use in preparation for the clinical visit, it would be advisable to group the items according to the problems explored.

Last but not least, in the interest of the whole community, it is desirable that the tools be freely available to all psychiatrists

Summary Points

- Early detection of behavioral and emotional problems in children and adolescents is relevant.
- During the school years, it can avail of the collaboration of parents through questionnaires, a series of these being described here.
- Different parent questionnaires are examined, whose characteristics are outlined in relation to the accuracy of the information they provide for identifying undiagnosed pathologies.
- Parent questionnaires are also a useful source of preliminary information for the clinical interview.
- For the choice of the instrument, the clinician will evaluate, in addition to the possible costs, the ability to explore and identify a large number of problematic conditions in the most accurate way.

LIST OF ABBREVIATIONS

ADHD	=	Attention Deficit Hyperactivity Disorder
ASEBA	=	Achenbach System of Empirically Based Assessment
BASC-2&3	=	Behavior Assessment System for Children - Parent Rating Scales 2&3
CABI	=	Child and Adolescent Behavior Inventory
CASI-4&5	=	Child and Adolescent Symptom Inventory - Parent Checklist 4&5
CBCL	=	Child Behavior Check-List
CD	=	Conduct Disorder
DAWBA	=	Development And Well-Being Assessment
DSM-IV and -5	=	Diagnostic and Statistical Manual for Mental Disorders, 4th and 5th editions
OCD	=	Obsessive-Compulsive Disorder
ODD	=	Oppositional Defiant Disorder
PSC	=	Pediatric Symptom Checklist
SDQ	=	Strengths and Difficulties Questionnaire

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CONFLICT OF INTEREST

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