Screening for Concurrent Substance Use and Mental Health Problems in Youth

CAMH

CONCURRENT DISORDERS KNOWLEDGE EXCHANGE AREA

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Table of Contents

Acknowledgments

This Screening for Concurrent Substance Use and Mental Health Problems in Youth came together because of the interest and efforts of many people.

The Research Team

This guide/resource/document would not be possible if it wasn't for the hard work and dedication of the research team: Brian Rush, Saulo Castel, Julian Somers, David Brown and Don Duncan. Authors of the research report are Brian Rush, Saulo Castel and Renee Desmond.

The Provincial Dissemination team

The Concurrent Disorders Screening and Youth Tools Project Team guided the direction of the knowledge exchange component of this work. We would like to recognize Sylvie Guenther, Beth Powell and Leona Murphy for providing leadership to the project. Brian Rush and Renee Desmond for their hours of meticulous reviews of articles and for always reporting their findings back to the team. Gloria Chaim for bringing her expertise and years of clinical experience to the table. Cindy Smythe, Chantal Wade, and Gilles Brideau for their hard work, invaluable insight and dedication to this project. Caroline Hebblethwaite for joining us early on and using her skill and experience to bring together all the information gathered into this useful guide. Christine Lebert for setting the stage and providing guidance through the beginning of the project. Christine Bois for her dedication and leadership in the area of concurrent disorders

The Concurrent Disorders Champions

The project team established a group of people who work with children and youth throughout Ontario who would take the information and findings out to their colleagues. These champions also participated in the research project by commenting on the practical use of the tools being reviewed and recommended. We wish to thank each and every one of you for bringing this project to life.

Context

Introduction

Program managers, clinicians and people working in prevention services and other planning and policy-related aspects of children services have highlighted the need for more evidence-based practice with respect to screening and assessment of mental health and substance use—related problems. The need is probably even more pressing with children and adolescents than with adults given the evidence that early recognition and treatment of substance use (and probably mental disorders) can reduce the length and outcome of the individual's overall treatment trajectory.

There is considerable research and development under way in many parts of Canada with respect to screening for co-occurring mental health and substance use disorders *among adults* presenting to mental health or substance use services, as well as to health care services such as primary care. However, screening (and assessment) tools and processes that have been tested with an adult population will not necessarily work with adolescents and younger children.

The project

This project was designed to produce research synthesis and advice that will help program managers and clinicians choose appropriate, well-validated, screening tools for this population.

From the outset the plan included a knowledge exchange focus[1] that had three critical features:

- Close engagement of an Expert Advisory Committee made up of program managers and clinicians drawn from addiction, mental health and child and adolescent psychiatry, as well as mental health and addiction treatment system planners. The Advisory Committee's mandate included facilitating the link to regional and provincial program funders and policy-makers in Ontario. The Committee was closely engaged in the development of the specifications of the review and synthesis process. Members were consulted regularly to ensure the

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[1] This knowledge exchange component applied only to the Ontario arm of the project. Members of the Ontario Advisory Committee are identified in Appendix A. Each Canadian jurisdiction, including British Columbia, will ultimately be responsible for this second stage, which focuses on dissemination and knowledge exchange. Inter-provincial/territorial collaboration in the dissemination stage will be encouraged, as well as opportunities for joint evaluation and research.

final product would meet the needs of end-users at multiple levels.

- A planned hand-off in Ontario to a provincial dissemination team and concurrent disorder champions. Some members of the research team are now serving as advisors to the dissemination team to support development and dissemination of a toolkit and other knowledge exchange activities.

- Development of a detailed technical report and this plain language summary. These two documents would also serve as a foundation for knowledge exchange activities at multiple levels and for multiple purposes in other jurisdictions outside Ontario.

Screening tool review

Background

Before beginning the review of the screening tools, the team collected and considered background information on screening and assessment (e.g., the context of children and adolescent psychopathology, the distinction between screening and assessment, the importance of context in considering different tools and procedures and the different types of validation process that are used in construction of screening and assessment tools). Thus, the answer to the question about what tool(s) "works" is both highly context dependent and related to the goals and research procedures used by the developer. This makes the choice among different options challenging even with a technical summary of the tool's psychometric and other properties in hand.

Process

Starting from a base of almost 3,500 abstracts and articles, and sifting and sorting through literally hundreds of screening and assessment tools and protocols, the team arrived at a subset of tools and studies for the more detailed review and "scoring." In the end, this was distilled to 33 articles and 20 different tools that were assessed in detail. A standard set of criteria was used for reporting the results of validation of diagnostic screening tools, followed by an overview of validity and reliability data with different populations and settings and applications in different cultural contexts. Tables 1 and 2 (page 22-23) summarize the results for the 20 tools. A more detailed description of the methodology begins on page 67.

The report is a snapshot

It is important to view this summary as a "snapshot" of screening tools that exist now and as they stand up against the set of criteria that was imposed upon the search and

synthesis process. The development of new tools, and improving the quality of data on existing tools, are ongoing processes of research and evaluation. Although some widely used, well-researched screening tools (e.g., the Massachusetts Youth Screening Instrument – Second version (MAYSI-2) did not meet the criteria for this project, we anticipate that research based on a diagnostic gold standard may be published in the near future. Similarly, relative newcomers to the field (e.g., the GAIN Short Screener) will no doubt be the subject of considerable research in the years to come.

Choice of criteria influences results

The final selection here is intimately tied to the various criteria and decisions made along the way. The team opted for an approach that not only allows for a meaningful comparison of the performance of various tools in a synthesis report such as this, but which also has the most meaning for the screening and assessment process itself. Other criteria would have led to a selection of different studies and undoubtedly different tools.

End-user input

In the summary tables (page 22-23), "stakeholder enthusiasm" is summarized for the different options. This feedback was collected from the group of CD champions in Ontario. However, getting and incorporating feedback on the tools and other important features of screening and assessment of mental health and substance use disorders will undoubtedly be an ongoing process involving various types of end-users engaged in practice, policy and/or research.

Why screen?

The case has already been argued quite strongly that universal screening for mental health and/or substance use disorders should be a routine part of the "care package" for adults in specialized substance use and mental health services, and in other health care services such as primary care. For youth and adolescents, the following factors constitute a strong rationale for effective screening and assessment of mental and/or substance use disorders, particularly in service delivery settings where children, youth and families present themselves for assistance:

- co-occurrence of substance use and mental health disorders
- early onset of substance use disorders
- early onset and high recurrence of mental health disorders
- success of early recognition and treatment.

Co-occurrence of substance use and mental health disorders

A large percentage of children experience multiple disorders. This is a cause for substantial concern largely because of the negative impact on treatment outcome and the challenges faced by young people and their families when navigating disparate service delivery systems. The extent of overlap across mental disorders, including substance use disorders, is considered to be higher among young people than among adults. This requires special attention in screening, assessment and treatment planning.

Early onset of substance use disorders

The earlier the onset of alcohol and/or other drug use (and of a diagnosable substance use disorder), the greater the odds of developing multiple and longer episodes of dependence. Earlier onset is also associated with increased likelihood of accessing treatment, and longer treatment "careers" in the future.

Early onset and high recurrence of mental disorders

Evidence suggests that mental disorders have an early age of onset and high rates of recurrence over the life course. The belief that early disorders strongly predict later

disorders is a strong component of broad-based screening programs that are focused on children's mental health/wellness and that aim to deliver preventive interventions.

Early recognition and treatment

Evidence suggests that early recognition and evidence-based treatment of substance use (and probably mental disorders) can make a positive difference to the life course and quality of life of those identified with such problems.

All these factors support clinicians', policy-makers' and researchers' interest in developing and deploying validated screening tools that help identify mental and substance use disorders among children and adolescents. This can also be seen as part of a larger effort to close the gap between research and evidence-based practice for child and adolescent psychiatry.

Selecting Screening Tools

There is no shortage of research literature dedicated to special issues and sub-topics related to screening and assessment of mental and substance use disorders among children and adolescents. The following points are most critical to understanding the choices made in this project. They guided the review and synthesis of information on various tools and they will influence the choice and implementation of tools in clinical or preventive contexts:

- screening and assessment are steps in a sequential, staged process
    - screening raises a red flag
    - screening can be a two-step process
- unique contexts and requirements for youth
- program setting will determine criteria (performance of a given test is dependent on the context in which it is implemented). The criteria include:
    - agency mandate
    - characteristics of the target population
    - purposes to which the results will be put
    - client engagement, motivation and the therapeutic alliance
    - availability of resources
    - policy and research requirements

Screening and assessment are steps in a sequential, staged process

Screening and assessment are components of a staged process that aims to identify and measure the mental health and substance use–related needs and behaviours of children and adolescents. It can be difficult to determine precisely where screening ends and assessment begins.

Screening raises a red flag

A screening process is intended to be an efficient way of raising a "red flag" about the possibility of a particular disorder or problem area, and a need for a more detailed assessment that informs service planning. In most service delivery settings it would be a waste of scarce resources to implement a full-blown mental health and/or substance use assessment for all children and adolescents presenting for help. Similarly, in a

preventive context, it would be a waste of resources to implement preventive services for those who do not truly need them.

Screening provides what Grisso and colleagues (Grisso et al., 2005)[2] refer to as "economical identification" whereas follow-up *assessment* refers to "more extensive and individualized identification of mental health [and substance use] needs of those youth whose screening results warrant future investigation" (Grisso et al., p. 12). The two processes may be aimed at essentially the same target conditions (i.e., mental health and substance use disorders) but screening does so much more tentatively.

Screening also tends to be done universally (i.e., virtually all clients) whereas assessment is a more selective and targeted process. Lastly, the results of the screening process imply the need for immediate action (typically additional assessment but perhaps also referral and linkage to other services). While assessment may identify immediate needs, it is usually more concerned with longer-term treatment planning and service coordination.

Screening and assessment tools

It is not the number of questions or administration time that make one tool a screener and another an assessment instrument. Some *screening* tools have the look and feel of more comprehensive assessment tools simply because they are lengthy and comprehensive in the coverage of disorders or problem domains. Some *assessment* tools may actually be briefer than some *screening* tools if the assessment tool focuses only on specific disorders, and the screening tool is multidimensional in its coverage. It is also important to distinguish between the screening or assessment *tool* and the screening or assessment *process*. Calling something a "screening tool" does not make it one—it depends on how it has been developed, for what purpose, and how it is linked to further assessment processes that will confirm or disconfirm the screening results.

Two-step screening

We have looked at a "two-staged" model of screening and assessment. It is also possible, however, to conceptualize the first stage—screening—as involving two distinct steps. Some mental health and substance use screening tools are designed to identify the possibility that the child or adolescent has *any* disorder, whereas other screening tools are much more specific, and aim in the one instrument to tentatively identify *one or more specific disorders*. So, a screening process may include two steps:

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[2] Grisso, T., Vincent, G. & Seagrave, D. (Eds.) (2005). *Mental Health Screening and Assessment in Juvenile Justice.* New York: Guilford Press.

(1) applying a very brief tool to determine "generalized caseness"

(2) a longer, more comprehensive tool to determine what could be called "disorder-specific caseness."

For example, a screening protocol for adults might use the brief GAIN-Short Screener or the K6 in step one and, depending on the results, follow up with the longer, 131-item Psychiatric Diagnostic Screening Questionnaire in step two to tentatively identify one or more very specific disorders. The goal of a very brief screening tool followed by a more comprehensive tool working together would be to use subsequent, and even more costly, assessment resources judiciously and efficiently.

Figure 1: A Staged Approach to Screening and Assessment

Goal	Brief Description
Stage 1: Screening –Tentative identification of generalized caseness	Brief screen for possibility of any substance use or mental disorder
Stage 2: Screening—Tentative identification of disorder-specific caseness	Longer screen for specific substance use or mental disorders
Stage 3: Assessment—Confirmation of specific disorders	Diagnostic assessment and treatment planning
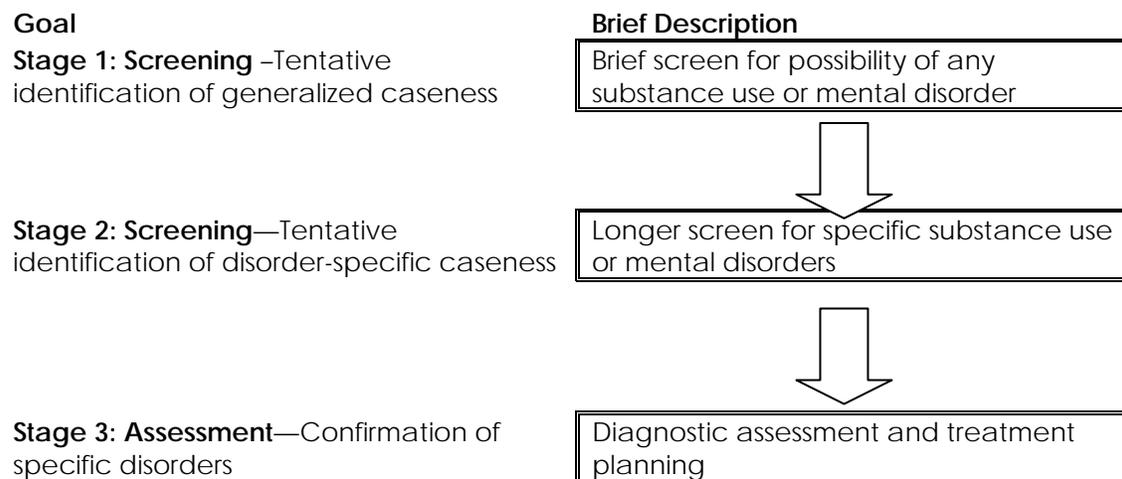
Unique contexts and requirements for youth

Screening tools designed for adults will not necessarily be appropriate and useful when used with children and adolescents. Mental disorders of adolescents, including substance use disorders, are not just "less mature" versions of adult disorders (or "older" versions of childhood disorders). They vary at different stages in the life course, and these differences evolve over time.

The main implications of the developmental perspective for screening tools and processes are:

- emotions or thoughts that might be considered "normal" at one age may be "abnormal" at another
- some disorders of childhood and adolescence may continue into adulthood if

untreated but other disorders will not (discontinuity). Discontinuity also applies to emotional states independent of a specific mental disorder, with the instability of mood in adolescence being particularly noteworthy. One implication is the need for periodic rather than one-time screening and assessment

- the likelihood of identifying more than one mental disorder is thought to be much higher in children and adolescents compared to adults. This may be a function of how disorders are defined for children and adolescents, and also that psychopathology is just more complex

- factors such as gender differences are particularly critical (e.g., boys more likely to experience externalizing disorders and girls more likely to have internalizing disorders). Gender differences also increase with age, with girls overtaking boys in terms of prevalence of mental disorder as they move into the later years of adolescence. Cultural and socio-economic differences are also important.

Program setting and needs will determine criteria

Agency mandate

The expectation and overall performance of a given test is also highly dependent on the context in which it is used. There are many doorways into mental health and/or substance use services and supports. These include specialized mental health and substance use services, primary care (including pediatric specialists and emergency services), family and children's services, social assistance, justice-related programs and institutions, and schools. The characteristics of the target population and the screening objectives vary with the treatment setting.

In most cases, when young people present to specialized substance use services a screening tool for substance use disorders is not needed. There is, however, a need for a screening tool that will help identify mental disorders. Similarly, a screening tool for substance use disorders is usually needed when children and adolescents present to mental health services. These specialized settings may be more motivated to implement the three-stage screening and assessment process identified above, and thus commit to the longer, more comprehensive screening tools that might not be practical for more generic health and social services.

Characteristics of the target population

The characteristics of the target population seen by various service delivery settings, and in particular, the age range of the population, will be critical to the selection of the screening tools. The younger the person, the greater the need to use tools that can be

completed by a parent or perhaps a teacher. Most tools aimed specifically at adolescents are based on self-report, as is the case with adults.

Purpose or purposes to which the results will be put

Grisso and colleagues (2005) emphasize that a given service that is considering the implementation of a screening process for mental and/or substance use disorders should clearly articulate how the results of the screening process will be used. They identify three main objectives:

- improving staff decision-making
- fulfilling regulatory requirements and professional standards
- managing resources.

Improving staff decision-making

Improving staff decisions is the most common reason for implementing a standard screening process. This goal relates back to the value of a two- or three-stage screening and assessment process as an aid to improved, and very individualized, treatment and support planning. While the goal in choosing a screening tool is to minimize the need for special qualifications or training, this will depend on how structured the tool is (i.e., how fixed or flexible the format for test administration), as well as the simplicity of tool itself (i.e., response categories and scoring procedures). Tools vary widely with respect to computerized versus manual scoring and the extent to which results may be "normed" for different subgroups, such as boys versus girls, or different age ranges. It is absolutely essential that the plan for using the results of a screening tool be prepared, documented in agency policy and procedures, widely communicated and adequately monitored and reinforced.

Regulatory requirements

Services may be required to screen for other types of problems (e.g., suicide risk or other safety needs). Services that have a long list of health and social problems to screen for will likely opt for brief screening tools for substance use and mental health problems.

Managing resources

Managing resources is the third area mentioned by Grisso and colleagues (2005). Examples include adjusting staff complements and skills to ensure coverage in particular topic areas, ensuring adequate linkages are in place with outside agencies for certain types of problems areas, and lobbying for additional funding.

Outcome monitoring

A fourth reason for screening, related in part to those articulated by Grisso and colleagues, is outcome monitoring. Some, but not all, screening tools are appropriate for this function. If the items are properly structured (e.g., aimed at symptoms or concerns that are recent rather than over the lifetime), and if the information that the tool provides is linked to the services that that client receives, it should be possible to link the screening function with outcome assessment.

Client engagement, motivation and the therapeutic alliance

Another aspect of the clinical application of a screening tool is the relationship between the question and answer format of a screening tool and the process of client engagement, motivation and therapeutic alliance. An effective screening process depends on having a good tool to use, but also on the competence of the staff in using it with clients in a non-threatening and engaging manner.

Availability of resources

Other contextual factors associated with choosing and implementing a screening tool include the availability of financial resources to acquire tools that are available only on a pay-per-use basis, the information infrastructure to support computerized administration, and adequate Internet access for online scoring and feedback.

The level of expertise required for administration, scoring and interpretation of screening tools varies significantly. The more comprehensive screening tools typically used in a three-stage screening and assessment model will require more training and expertise than the briefer tools commonly used in a two-stage model.

Policy and research requirements

Policy-related factors may be internal to the treatment service (e.g., adjusting internal policies related to the flow of clients through the internal delivery pathway) or external (e.g., calling for inter-agency agreements on how those with particular problems or disorders will be case-managed or referred). Internal policy issues also relate to the extent to which it is mandatory for all staff to use the screening tool(s) on a routine basis. Some staff will be "pro-tool" while others may strongly oppose their use, often because they feel that tools interfere with establishing good rapport with clients and their families. Although the factors underlying these differences in perception are not well-understood, the differences are critically important for systematic and sustainable use of any tool regardless of its psychometric performance.

At a regional or provincial level, a particular screening tool may be mandated for purposes of consistency in communication, public health surveillance, and/or performance monitoring.

Research objectives (e.g., monitoring trends over time in the characteristics of service recipients in relation to trends in the general population) may also influence the choice of screening tool. In this case policies should be in place that outline how the results can be used and whether, and how, others can access the results for purposes other than those for which the data were originally gathered.

Criteria used to judge the performance of a screening tool

Validity

In this study, our main focus was on studies, and the tools researched in these studies, that are based on constructs closely related to diagnostic criteria and formal DSM-based diagnoses (criterion-related validity). The DSM-based model was selected because of its predominant and critical role in current clinical guidelines, treatment planning and ongoing research.

DSM-based model

It was necessary to arrive at a common approach so as to have a basis for comparing tools. We opted to select and compare tools that were developed using DSM-based diagnoses in the validation process. This includes tools where the gold standard for comparison was based on the categorization of internalizing and externalizing disorders because of the proven value of this approach for children and adolescents.

Adopting another comparative approach would yield different results but we believe would be less useful in the context of the two- (or three-) staged model of screening and assessment that is the foundation of this project.

Validity and Reliability

Various types of validity are summarized by Grisso and colleagues (2005, p. 72).

- Content: How have the tool's intentions been translated into item content?

- Procedure: How is it administered?

- Norm sample: What types of young people have been involved in the tool's development?

- Internal integrity: Do the content and structure of the tool make sense?

- Dependability of measurement (usually called "reliability"): Does the tool measure consistently?

- Confidence and meaning (usually called "validity"): Does the tool measure what it claims to measure?

Reliability refers to how consistently the tool performs across different people who administer it (inter-rater reliability) and over different applications within the same time period (test-retest reliability). It also relates to how well the different items of a given tool work together (internal consistency). The reliability of a tool in a given situation is related to its validity or accuracy. It is difficult for something to be "on target" if the measurement approach itself is inconsistent.

Screening Tools: Fact Sheets

This section begins with two tables that list the 20 tools that emerged from the rating and review process (see p. 67 for a description of the process).

The tables are followed by fact sheets for each of the tools. The fact sheets include a brief description of the tools and information about:

- appropriate target populations
- administration options
- accessibility and cost
- how to obtain copies of the tools
- test development data.

Summary tables

These tables maintain the important distinction between tools that can be used to identify:

- mental disorders but not substance use disorders
- substance use disorders but not other mental disorders
- both mental and substance use disorders (i.e. dual-function).

Selecting a tool from within these broad categories will depend on factors such as the mandate of the service, and its current screening and assessment processes. There may be several advantages for a community network of mental health and substance use services to choose a "dual-function" tool so as to facilitate communication and coordination between services.

Age group

The tables are also organized by the age group for which the various tools have been validated, using the broad categories of "preschool to age 11" (Table 1) and pre-teens and teens aged "12 to 17"(Table 2). Note, however, this grouping was approximate as we also include the precise age range recommended for each tool, and that several tools span these two broad categories. We believe, however, that it is helpful to make some separation by target age in order to facilitate decisions on the adoption of a given tool in particular services or sectors.

Screening stage

Another key element of the summary charts is the breakdown provided for what we refer to as "Stage 1" or "Stage 2" screening tools. Essentially this separates tools that are designed to cast a wide net for "any" disorder or for broad clusters of disorders (e.g., internalizing and externalizing) from those tools that seek a much finer, but still tentative, identification of specific disorders or problem areas. Within the dual-function tools this distinction is captured nicely by the GAIN-Short Screener (GAIN-SS) and the DISC Predictive Scales (DPS). **Both** are screening tools but they differ in length, purpose and, therefore, coverage. Assessing the potential value of the tools in Tables 1 and 2 should therefore also be guided by the three-stage model advanced earlier for screening and assessment generally.

Input from end users

In the far right side of Tables 1 and 2 we summarize "stakeholder enthusiasm"; summary ratings developed based on feedback from a group of CD champions brought together to support the knowledge exchange process with respect to these screening tools. Following a webinar with the group that reviewed progress to date on the project and sought their input, participants were asked for more detailed feedback on the various tools. To date, feedback has been received from seven respondents, two of whom are from the same program. Five of the respondents work in substance abuse services, and two within a program for people with either mental health or substance use problems. Questions included what they liked most and least about each tool and how it may or may not work within their own program or the sector in which they work. They were also asked to indicate how important it was for a tool to identify both mental health and substance use problems and to rate the importance of various criteria in selecting a screening tool for their program. Virtually all agreed that it was "very important" for the same screening tool to identify both mental health and substance use problems. Participants were also asked to keep in mind the distinction between Stage 1 and Stage 2 screeners. Feedback from the CD champions also showed that the most important criteria for them in choosing a tool were (in order of importance):

- overall quality of the reliability and validity data,
- ease of scoring and interpretation
- brevity/administration time
- self-completion
- cost.

Given the scope of our review process and the many different types of input, it is challenging to summarize everything into a "best bet" category. Rather we recommend the use of this report, the summary tables, and the more detailed technical report as facilitating local, regional and provincial decision-making on the optimal tool or tools for different contexts. That said, there are three points that have come through loud and clear, and confirmed stakeholder feedback obtained to date. First, there is considerable value in considering various tools in the context of a staged approach to screening and assessment (i.e., Stage 1 and Stage 2 screeners followed by comprehensive assessment as dictated by the results). Secondly, there is a high value on selecting tools that screen for both mental AND substance use disorders. Thirdly, end-users want tools that come with strong reliability and validity data, and secondarily emphasize the practical issues such as ease of administration, scoring and brevity. Cost is an important consideration as well but does not dominate among various selection criteria.

Table 1: Summary of Screening Tools for Children Approximately Preschool to Age 11

Screening Tool	Screening Stage		Quality of Reporting			Strength of Reliability and Validity			Stakeholder Enthusiasm		
Mental Health but not SUD											
Pediatric Symptom Checklist (PSC). Age 4–16	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Youth Outcome Questionnaire (Y-OQ-12). Age 4–17	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Child Behavior Checklist (CBCL). Age 6-18	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Strengths and Difficulties Questionnaire (SDQ). Age 6–8	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Reporting Questionnaire for Children (RQC). Age 5–15	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Child Symptom Inventory-4 (CSI-4). Age 5–12	1st	2nd	High	Med	Low	High	Med	Low	Limited feedback		
Early Childhood Inventory-4 (ECI-4). Preschool	1st	2nd	High	Med	Low	High	Med	Low	Limited feedback		
Substance Use Disorder but no other MH											
No SUD only tools for this young age group											
Both SUD and other MH											
DISC Predictive Scales (DPS). Age 9–17	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
GAIN Short Screener (GSS). Age 10–17	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low

Table 2: Summary of Screening Tools for Pre-Teens and Adolescents Approximately Age 12–17

Screening Tool	Screening Stage		Quality of Reporting			Strength of Reliability and Validity			Stakeholder Enthusiasm		
Mental Health but not SUD											
Pediatric Symptom Checklist (PSC). Age 4–16	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Youth Outcome Questionnaire (Y-OQ-12. Age 4–17	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Child Behavior Checklist (CBCL). Age 6–18	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Strengths and Difficulties Questionnaire (SDQ). Age 11–16	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Youth Self-Report (YSR). Age 11–18	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Reporting Questionnaire for Children (RQC). Age 5–15	1st	2nd	High	Med	Low	High	Med	Low	Limited feedback		
General Health Questionnaire (GHQ). Age 11–15	1st	2nd	High	Med	Low	High	Med	Low	Limited feedback		
Substance Use Disorder but no other MH											
CRAFFT. Age 14–18	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
RAFFT. Age 13–18	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Drug Acknowledgement Scale (ACK). Age 14–18	1st	2nd	High	Med	Low	High	Med	Low	Limited feedback		
Alcohol/Drug Problem Proneness Scale (PRO). Age 14–18	1st	2nd	High	Med	Low	High	Med	Low	Limited feedback		
MacAndrew Alcoholism Scale-Revised (MAC-R). Age14–18	1st	2nd	High	Med	Low	High	Med	Low	Limited feedback		
DEP-ADO. Age 14–19	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Rutgers Alcohol Problem Index (RAPI). Adolescents	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Both SUD and other MH											
Problem Oriented Screening Instrument for Teenagers (POSIT). 12–19	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
DISC Predictive Scales (DPS). Age 9–17	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
GAIN Short Screener (GSS). Age 10–17	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low
Drug Use Screening Inventory (DUSI) and (DUSI-R). 12+	1st	2nd	High	Med	Low	High	Med	Low	High	Med	Low

Screening tools: mental health disorder only

Pediatric Symptom Checklist (PSC)

Youth Outcome Questionnaire (Y-OQ-12)

Child Behavior Checklist (CBCL)

Strengths and Difficulties Questionnaire (SCQ)

Youth Self-Report (YSR)

Reporting Questionnaire for Children (RQC)

Child Symptom Inventory-4 (CSI-4)

General Health Questionnaire (GHQ)

Early Childhood Inventory-4 (ECI-4)

Pediatric Symptom Checklist (PSC)

Brief description

The **Pediatric Symptom Checklist (PSC)** screens for psychosocial problems. It was developed for use in health care settings but its application has been extended to other care settings (e.g., preventative child health services, school-based health services, nursery schools) and general population in the community. In community settings it has been used as a measure of unmet need for mental health services. The original 35-item version was intended to raise a red flag about any psychosocial problem that warranted further investigation. A shorter version, the PSC-17, is organized around subscales derived from psychometric analysis. These scales are focused on internalizing, attention and externalizing problems. The use of the long version will depend on the objectives of the screening process and other contextual factors.

Appropriate target populations

Children between the ages of 4 and 16. Clinical as well as community samples.

Administration options

Parent answers the questionnaire based on his or her observations of the child.

Format(s) available

☒ self-administered (paper-and-pencil)

☐ self-administered (computer)

☒ clinician-administered

Time required

Less than five minutes.

Languages available

☒ English

☐ French

☒ Other (Spanish, Dutch)

Accessibility and cost

☒ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☐ fee for use

Where to access

For more information see the test developer's website:
http://www2.massgeneral.org/allpsych/pediatricsymptomchecklist/psc_home.htm.

Summary of test development data

Quality of reporting

High, based on STARD rating (see Appendix, p.76).

Summary of validity and reliability data

High, largely on the basis of the scope and strength of the validity and reliability data for both the original scale and the shorter PSC-17 from a variety of settings and age ranges.

Youth Outcome Questionnaire (Y-OQ-12)

Brief description

This 12-item scale is derived from the longer, well-established **Youth Outcome Questionnaire - 2.01**. It is a general measure of psychological distress and is intended to be used in the first stage of a two-stage screening process. People who score positive on the Y-OQ-12 are given the full Y-OQ-2.01 instrument. A score in the clinical range on the second stage instrument is then used as a marker for continuous outcome tracking.

Appropriate target populations

Children aged 4 to 17.

Administration options

Parent answers the questionnaire based on his or her observations of the child.

☒ self-administered (paper-and-pencil)

☐ self-administered (computer)

☐ clinician-administered

Time required

Approximately 10 minutes.

Languages available

☒ English

☒ French

☒ Other (Spanish, Swedish, Dutch)

Accessibility and cost

☐ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☒ fee for use (Contact Tameisha@OQMeasures.com for a quote.)

Where to access

www.oqmeasures.com or contact Tameisha@OQMeasures.com.

Summary of test development data

Quality of reporting

High, based on STARD rating (see Appendix, p. 76).

Summary of validity and reliability data

Moderate, largely because there is only one well-designed validation study.

Child Behavior Checklist (CBCL)

Brief description

The **Child Behavior Checklist (CBCL)** is a component of the Achenbach System of Empirically Based Assessment (ASEBA). The ASEBA is used to detect behavioural and emotional problems in children and adolescents. The CBCL is completed by parents. The other two components are the Teacher's Report Form (TRF) (completed by teachers), and the Youth Self-Report (YSR) (completed by the child or adolescent himself or herself). The 2001 revision of the CBCL, the CBCL/6-18 (used with children 6 to 18), is made up of eight syndrome scales:

- anxious/depressed
- depressed
- somatic complaints
- social problems
- thought problems
- attention problems
- rule-breaking behaviour
- aggressive behaviour.

These group into two higher order factors—internalizing and externalizing. The time frame for item responses is the past six months.

The 2001 revision also added six DSM-oriented scales consistent with DSM diagnostic categories:

- affective problems
- anxiety problems
- somatic problems
- ADHD
- oppositional defiant problems
- conduct problems.

The CBCL (and the YSR) are also scored on (optional) competence scales for activities, social relations, school and total competence. In 2001, options for multicultural norms were added allowing scale scores to be displayed in relation to different sets of cultural/societal norms. Scales were also added for obsessive compulsive disorder (OCD) and posttraumatic stress disorder (PTSD).

The CBCL consists of 113 questions, scored on a three-point Likert scale (0=absent, 1= occurs sometimes, 2=occurs often).

Appropriate target populations

Youth 6 to 18 years of age.

Administration options

Formats available

☒ self-administered (paper-and-pencil)

☒ self-administered (computer)

☐ clinician-administered

Items are self-administered, or given verbally if literacy is too low.

Time required

The problem items can be completed by most parents in about 10 minutes and the optional competence items in another 5 to 10 minutes.

Languages available

☒ English

☐ French

☒ Other (Translations are available in almost 60 languages.)

Accessibility and cost

☐ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☒ fee for use (Contact ASEBA for pricing; currently $295 for single user license.)

Where to access

ASEBA / Research Center for Children, Youth and Families
1 South Prospect Street
St. Joseph's Wing (3rd Floor, Room 3207)
Burlington, VT 05401
Telephone Number: 802-656-5130

E-mail (for orders and inquiries): mail@aseba.org

www.aseba.org

Eligibility to purchase ASEBA materials is determined on the basis of professional degree, licensing, relevant experience and acceptance of the conditions listed on the website (please see www.aseba.org for more information). The training required may differ according to the ways in which the data are to be used. Graduate training of at least the Master's degree level would ordinarily be expected.

Summary of test development data

Quality of reporting

High, based on STARD rating (see Appendix, p .76).

Summary of validity and reliability data

High, based largely on the variety and strength of the reliability and validity data across so many languages and cultural contexts.

Strengths and Difficulties Questionnaire (SDQ)

Brief description

The **Strengths and Difficulties Questionnaire (SDQ)** is used to identify behavioural and emotional problems in children and adolescents. It was developed in the U.K. and is used in many countries in clinical and epidemiological contexts.

The instrument produces scores for five subscales:

- conduct problems
- hyperactivity
- emotional problems
- peer problems
- prosocial behaviour.

Each subscale consists of five items.

Parent and teacher versions are available for those aged 3 to 16 and a youth self-report version is available for youth aged 11 to 16. Extended versions of the parent and teacher SDQ include an impact supplement that asks if the respondent thinks the child or adolescent has a problem with emotions, concentration behaviour or getting along with people. If the answer is yes, the parent/teacher is asked about chronicity, distress, social impairment and burden to others (Goodman, 1999).

Appropriate target populations

Parent and teacher versions are available for those aged 3 to 16 A youth self-report version is available for youth aged 11 to 16.

Administration options

Formats available

☒ self-administered (paper-and-pencil)

☐ self-administered (computer)

☒ clinician-administered

Designed for self-administration but they can be administered verbally if literacy is too low.

Time required

Administration time is approximately 10 minutes.

Languages available

☒ English

☒ French

☒ Other (Dutch, German, Swedish, Arabic, Urdu, Finnish, Portuguese, Italian, Spanish and Croatian—see website for details.)

Accessibility and cost

☒ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☐ fee for use

Where to access

www.sdqinfo.com

Summary of test development data

Quality of reporting

High, based on STARD rating (see Appendix, p. 76).

Summary of validity and reliability data

High, based largely on the variety and strength of the reliability and validity data across so many languages and cultural contexts.

Youth Self-Report (YSR)

Brief description

The **Youth Self-Report (YSR)** is one of a family of screening tools for behavioural and emotional problems in children and adolescents that comprise the Achenbach System of Empirically Based Assessments (ASEBA). The YSR is completed by the child or adolescent himself or herself, the Child Behavior Checklist (CBCL) is completed by parents and the Teacher's Report Form (TRF) by teachers. The 2001 revision yielded the YSR in its current form of 112 problem items in a six-month time period. The YSR is recommended for use only with children 11 years and older. The YSR, like the CBCL and the TRF, yields scores on eight empirically derived syndrome scales:

- anxious/depressed
- withdrawn/depressed
- somatic complaints
- social problems
- thought problems
- attention problems
- rule-breaking behaviour
- aggressive behaviour.

These group into two higher order factors: internalizing and externalizing.

The 2001 revision also added six DSM-oriented scales consistent with DSM diagnostic categories:

- affective problems,
- anxiety problems,
- somatic problems,
- ADHD,
- oppositional defiant problems
- conduct problems.

The YSR and the CBCL are also scored on (optional) competence scales for activities, social relations, school and total competence.

The YSR consists of 112 questions, scored on a three-point Likert scale (0=absent, 1= occurs sometimes, 2=occurs often).

Appropriate target populations

Adolescents 11 to 18 years of age.

Administration options

Paper-and-pencil and computer administration versions are available.

Formats available

☒ self-administered (paper-and-pencil)

☒ self-administered (computer)

☐ clinician-administered

Time required

Approximately 10 minutes.

Languages available

☒ English

☐ French

☒ Other (See website for details.)

Accessibility and cost

☐ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☒ fee for use (Contact ASEBA for pricing; currently $295 for single user license.)

ASEBA / Research Center for Children, Youth and Families
1 South Prospect Street,
St. Joseph's Wing (3rd Floor, Room 3207)
Burlington, VT 05401
Telephone Number: 802-656-5130
E-mail (for orders and inquiries): mail@aseba.org

Where to access

www.aseba.org

Summary of test development data

Quality of reporting

High, based on STARD rating (see Appendix, p. 76).

Summary of validity and reliability

High, based largely on the variety and strength of the reliability and validity data across so many languages and cultural contexts.

Reporting Questionnaire for Children (RQC)

Brief description

The **Reporting Questionnaire for Children (RQC)** is a 10-item instrument administered verbally to the caregivers of children. It was developed as part of a World Health Organization (WHO) collaborative study involving seven countries. The tool was designed as part of a two-stage screening and assessment protocol. The RQC was intended to be the first stage screen for developmental disability (then called mental retardation), significant degrees of emotional and behavioural disorder and psychotic disorders. The second stage was a standardized psychiatric interview.

Appropriate target populations

Children between the ages of 5 and 15.

Administration options

Formats available

☒ self-administered (paper-and-pencil)

☐ self-administered (computer)

☒ clinician-administered

Languages available

☒ English

☐ French

☒ Other (Contact authors for more information.)

Accessibility and cost

☒ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☐ fee for use

Where to access

Instructions are available from the authors; requests should be addressed to the Division of Mental Health, World Health Organization, Geneva.

Items are also available in: Giel, R., De Arango, M.V., Climent, C.E., Harding, T.W., Ibrahim, H.H.A., Ladrigoignacio, L., et al. (1981). Childhood mental disorders in primary health care: results of observations in four developing countries. *Pediatrics, 68* (5), 677–683.

Summary of test development data

Quality of reporting

Moderate, based on STARD rating (see Appendix, p. 76).

Summary of validity and reliability data

Low, largely on the basis of the limited application in North America, the time that has elapsed from the major validation studies and the lack of information on test reliability.

Child Symptom Inventory-4 (CSI-4)

Brief description

The **Child Symptom Inventory-4 (CSI-4)** is a DSM-IV-referenced rating scale that screens for emotional and behavioural symptoms of childhood disorders. There are both parent (97 items) and teacher versions (77 items). The CSI-4: Parent Checklist contains screens for 15 emotional and behavioral disorders, and the CSI-4: Teacher Checklist contains screens for 13 emotional and behavioral disorders. The CSI-4 can be scored to derive Symptom Count scores or Symptom Severity scores.

Appropriate target populations

Children between 5 and 12 years old.

Administration options

The CSI-4 can be administered paper-and-pencil to either the parent or teacher of the child.

Formats available

☒ self-administered (paper-and-pencil)

☐ self-administered (computer)

☐ clinician-administered

Time required

10 minutes

Languages available

☒ English

☐ French

☒ Other (Spanish)

Accessibility and cost

☐ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☒ fee for use

The CSI-4 Deluxe Kit contains the Consolidated Manual, 25 Parent Checklists, 25 Teacher Checklists, 50 Symptom Count score sheets (with scoring instructions, cutoff scores and rule-out diagnoses), and 50 Symptom Severity Profile (T scores) score sheets for both Parent and Teacher Checklists for $108.00.

Where to access

www.checkmateplus.com

Summary of test development data

Quality of reporting

Moderate, based on STARD rating (see Appendix, p.76).

Summary of validity and reliability data

Moderate, based largely on the fact there is, as yet, only one criterion-related validity study based on a diagnostic gold standard and also that study is based on boys only.

General Health Questionnaire (GHQ)

Brief description

The **General Health Questionnaire** was developed in England as a screening instrument to identify psychological distress among adults in primary care settings. The GHQ manual notes that it is not appropriate for use with children but that it has been used with adolescents. The original version comprised 60 items and subsequently various versions of different length have been constructed and validated (30-item, 28-item, 20-item and 12-item versions). There is currently no version defined specifically for adolescents.

Appropriate target populations

Not specified.

Administration options

Formats available

☒ self-administered (paper-and-pencil)

☐ self-administered (computer)

☐ clinician-administered

Time required

Languages available

☒ English

☐ French

☒ Other (Contact tool developers for more information.)

Accessibility and cost

☐ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☒ fee for use

Where to access

http://www.glassessment.co.uk/health_and_psychology/resources/general_health_questionnaire/faqs.asp?css=1

Summary of test development data

Quality of reporting

Low, based on STARD rating (see Appendix, p. 76).

Summary of validity and Reliability Data

Moderate, based largely on the fact there is one somewhat dated criterion-related diagnostic-based validity study, but emerging literature on other types of validity for use in the general population.

Early Childhood Inventory-4 (ECI-4)

Brief description

The **Early Childhood Inventory-4 (ECI-4)** measures the behavioural symptoms of the most relevant DSM-IV disorders among preschool children. The list of disorders includes ADHD, oppositional defiant disorder, conduct disorder, and a range of anxiety and depressive disorders. There are both parent and teacher versions. There is close to a one-to-one correspondence between ECI-4 items and DSM-IV items for each disorder.

The ECI-4: Parent Checklist contains 108 items that screen for 15 emotional and behavioural disorders, and the ECI-4: Teacher Checklist contains 87 items that screen for 13 emotional and behavioural disorders. The ECI-4 can be scored to derive Symptom Count scores or Symptom Severity scores.

Appropriate target populations

Preschool children aged 3 to 6 years. The main validation data come from a clinical sample and not the general population.

Administration options

The ECI-4 can be administered paper-and-pencil to either the parent or teacher of the child.

Formats available

☒ self-administered (paper-and-pencil)

☐ self-administered (computer)

☐ clinician-administered

Time required

10 minutes

Languages available

☒ English

☐ French

☐ Other

Accessibility and cost

☐ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☒ fee for use

The ECI-4 Deluxe Kit contains the Screening Manual, the Norms Manual, 25 Parent Checklists, 25 Teacher Checklists, 50 Symptom Count score sheets (with scoring instructions, cutoff scores, and rule-out diagnoses) and 50 Symptom Severity Profile (T scores) score sheets for both Parent and Teacher Checklists for $112.00.

Where to access

www.checkmateplus.com

Summary of test development data

Quality of reporting

High, based on STARD rating (see Appendix, p. 76).

Summary of validity and reliability data

Moderate, largely on the basis of there being only one published study examining the criterion-related validity of the measure. The data reported, however, do demonstrate excellent performance of the tool in this one sample.

Screening tools: substance use disorder only

CRAFFT Substance Abuse Screening Test

RAFFT

Alcohol/Drug Acknowledgement Scale (ACK)

Alcohol/Drug Problem Proneness Scale (PRO)

MacAndrew Scale—Revised (MAC-R)

DEP-ADO

Rutgers Alcohol Problem Index

CRAFFT Substance Abuse Screening Test

Brief description

The **CRAFFT** is a six-item measure that was designed for use with adolescent medical patients. It has promise for much wider application. The name CRAFFT is a mnemonic acronym for significant terms in the six questions. It was constructed from items selected from other screening tools (RAFFT, DAP and POSIT) that performed well and had high clinical relevance. Like the RAFFT, it was modelled after the well-known CAGE instrument for adults. It differs from the CAGE in that it that it covers both alcohol and other drugs (much like an adaptation of the CAGE known as the CAGE-AID that is used with adults). All six items are based on lifetime experience, that is "Have you, or do you, ever.…"

Appropriate target populations

Adolescents between the ages of 14 and 18. Some validation work has involved French-speaking adolescents of a similar age using the French version as well as First Nations people in an American sample.

Administration options

Formats available

☒ self-administered (paper-and-pencil)

☒ self-administered (computer)

☒ clinician-administered

The tool is typically administered verbally. It is, however, amenable to paper and pencil self-administration or computer adaptation.

Languages available

☒ English

☒ French

☐ Other

Accessibility and cost

☒ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☐ fee for use

Where to access

The CRAFFT Substance Abuse Screening Test is reprinted here:

C. Have you ever ridden in a **C**ar driven by someone (including yourself) who was high or had been using alcohol or drugs?

R. Do you ever use alcohol or drugs to **R**elax, feel better about yourself, or fit in?

A. Do you ever use alcohol or drugs while you are by yourself **A**lone?

F. Do you ever **F**orget things you did while using alcohol or drugs?

F. Do your **F**amily or **F**riends ever tell you that you should cut down on your drinking or drug use?

T. Have you ever gotten into **T**rouble while you were using alcohol or drugs?

For scoring instructions and more information, see:

Knight, J.R., Sherritt, L., Shrier, L.A., Harris, S.K. & Chang, G. (2002). Validity of the CRAFFT Substance Abuse Screening Test Among Adolescent Clinic Patients. *Archives of Pediatrics & Adolescent Medicine, 156,* 607–614.

Summary of test development data

Quality of reporting

High, based on STARD rating (see Appendix, p. 76).

Summary of validity and reliability data

High, based on the scope of the validity and reliability testing as well as testing in different populations.

RAFFT

Brief description

The **RAFFT** is very similar to the CRAFFT (described earlier). The five items cover alcohol as well as other drugs. It does not, however, seem to have been the subject of as much research as the CRAFFT.

Appropriate target populations

Adolescents between 13 and 18 years old. The only validation study was conducted in a health care delivery setting where prevalence of substance use disorder and other psychiatric issues is high.

Administration options

Formats available

☐ self-administered (paper-and-pencil)

☐ self-administered (computer)

☒ clinician-administered

Items are typically given verbally but would be amenable to paper and pencil or computerized format.

Languages available

☒ English

☐ French

☐ Other

Accessibility and cost

☒ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☐ fee for use

Where to access

The RAFFT is reprinted here:

R. Do you drink/drug to **R**elax, feel better about yourself, or fit in?

A. Do you ever drink/drug while you are by yourself, **A**lone?

F. Do any of your closest **F**riends drink/drug?

F. Does a close **F**amily member have a problem with drink/drugs?

T. Have you ever gotten into **T**rouble from drinking/drugging?

For more information, see:

Riggs, S.R. & Alario, A. (1989). Adolescent substance use instructor's guide. In C. Dube, M. Goldstein, D. Lewis, E. Myers & W. Zwick (Eds.), *Project ADEPT Curriculum for Primary Care Physician Training.* (pp. 1-57). Providence, RI: Brown University.

Summary of test development data

Quality of reporting

High, based on STARD rating (see Appendix, p.76).

Summary of validity and reliability data

Moderate, based largely on the limited number of validation studies and lack of reliability assessment.

Alcohol/Drug Acknowledgement Scale (ACK)

Alcohol/Drug Problem Proneness Scale (PRO)

MacAndrew Alcoholism Scale – Revised (MAC-R)

Brief description

These three scales are part of the Minnesota Multiphasic Personality Inventory-Adolescent (MMPI-A). Their development is closely related to that of the substance use scales in the adult version, the MMPI.

Adult version

Three substance use scales were developed using items from the MMPI. When the MMPI was revised, producing the MMPI-2, changes were made to the substance use scales. The revised adult scales are:

- MacAndrew Alcoholism Scale-Revised (MAC-R)
- Addiction Acknowledgement Scale (AAS)
- Addiction Potential Scale (formerly the Alcohol/Drug Problem Proneness Scale).

All three scales use MMPI and MMPI-2 items that are substance abuse-related but, because of the way they are worded, do not appear to the client to be asking about substance use. This use of unobtrusive items was done to minimize "faking."

Adolescent version

The adolescent version of the MMPI (the MMPI-A), has parallel substance use tools. These are:

- MacAndrew Scale – Revised (MAC-R)
- Alcohol/Drug Acknowledgement Scale (ACK)
- Alcohol/Drug Proneness Scale (PRO).

The three measures are embedded in the MMPI-A and are derived in the compilation and scoring of this much larger battery.

Appropriate target populations

Adolescents from 14 to 18 years old.

Administration options

The MAC-R, ACK and PRO are embedded in the MMPI-A and, therefore, administered as part of the MMPI battery.

Formats available

☒ self-administered (paper-and-pencil)

☒ self-administered (computer)

☐ clinician-administered

Languages available

☒ English

☐ French

☐ Other

Accessibility and cost

☐ no charge for use

☐ use requires permission of test developer

☒ use requires special training and/or professional or academic credentials

☒ fee for use. (Check www.pearsonassessments.com/mmpi_a.aspx for pricing.)

Where to access

Butcher, J. N., Williams, C. L., Graham, J. R., Archer, R. P., Tellegen, A., Ben-Porath, Y. S., & Kaemmer, B. (1992). *MMPI-A: Minnesota Multiphasic Personality Inventory-A: A Manual for administration, scoring, and interpretation.* Minneapolis: University of Minnesota Press.

Summary of test development data

Quality of reporting

Moderate, based on STARD rating (see Appendix, p.76).

Summary of validity and reliability data

Low, based largely on the limited number of validation studies, marginal performance in the studies identified and poor evidence of reliability.

DEP-ADO

Brief description

The **DEP-ADO** was designed to identify the problematic use of alcohol and other drugs. It is made up of eight questions addressing frequency of use in the past 12 months, substance use in the past month, the age of initiation, injection drug use, number of five or more drinks in a single occasion in the past 30 days and last 12 months, the negative effects associated with substance abuse (six domains covered); and the frequency of cigarette use. It was developed in Quebec and was tested with a French-speaking population, although an English-language version is also available. The DEP-ADO was designed for frontline workers.

Appropriate target populations

Adolescents aged 14 to 19 in community- as well as clinic–based populations.

Administration options

Formats available

☒ self-administered (paper-and-pencil)

☐ self-administered (computer)

☒ clinician-administered

The DEP-ADO is designed in an interview format but can be used as a self-report tool if the interviewer is available to answer any questions.

Time required

Completion time is estimated at between five to 10 minutes.

Languages available

☒ English

☒ French

☐ Other

Accessibility and cost

☒ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☐ fee for use

Where to access

http://www.risqtoxico.ca/documents/DEP-ADO_ang_V3_2.pdf

Summary of test development data

Quality of reporting

High, based on STARD rating (see Appendix, p. 76).

Summary of validity and reliability data

Moderate, largely because there is no reliability data and only one study of validity.

Rutgers Alcohol Problem Index

Brief description

The **Rutgers Alcohol Problem Index (RAPI)** screens for negative consequences of alcohol use[3] The RAPI was recently adapted with a modified instruction set that asks the respondent to rate the items based on the substances used.

Appropriate target populations

The adapted version has been tested only among homeless adolescents.

Administration options

Formats available

☒ self-administered (paper-and-pencil)

☐ self-administered (computer)

☐ clinician-administered

Time required

Ten minutes.

Languages available

☒ English

☐ French

☐ Other

Accessibility and cost

☒ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☐ fee for use

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[3] White, H.R. & Labouvie, E.W. (1989). Toward the assessment of adolescent problem drinking. *Journal of Studies on Alcoho, 50,* 30–37.

Where to access

Helene Raskin White, Ph.D.
Erich Labouvie, Ph.D.
Center of Alcohol Studies
Rutgers University
P.O. Box 969
Piscataway, NJ 08855-0969
(732) 445-3579

http://alcoholstudies.rutgers.edu/research/prevention_etiology/health_human_devel
opment/RAPI.html

Summary of test development data

Quality of reporting

Low, based on STARD rating (see Appendix, p.76)

Summary of validity and reliability data

Low, based on the limited validation work with this adapted version of the tool and
modified instruction set.

Screening tools: both mental health and substance use disorder

Problem-Oriented Screening Instrument for Teenagers (POSIT)

DISC Predictive Scales (DPS)

GAIN Short Screener (GSS)

Drug Use Screening Inventory (DUSI and DUSI-R)

Problem Oriented Screening Instrument for Teenagers (POSIT)

Brief Description

The POSIT is a multidimensional tool intended to identify adolescents needing further assessment in problem substance use and nine other functional areas. The other nine areas are:

- physical health
- mental health
- family relations
- peer relations
- educational status
- vocational status
- social skills
- leisure and recreation
- aggressive/delinquent behaviour.

The POSIT is made up of 139 yes/no questions that explore current functioning. The substance use/abuse scale has been the subject of most of the attention for criterion-related validation and other psychometric testing. It is made up of 17 items. A briefer 11-item version has been developed.

A follow-up questionnaire is also available and can be used as a descriptive measure in program evaluation.

Appropriate target populations

The POSIT has been tested in substance use, mental health, corrections and medical settings. It is aimed at adolescents aged 12 to 19 and with at least a fifth grade reading level. The scale has been adapted for use with Latin American Spanish and Portuguese-speaking populations.

Administration options

Formats available

☒ self-administered (paper-and-pencil)

☒ self-administered (computer)

☐ clinician-administered

Time required

Twenty to 30 minutes.

Languages available

☒ English

☐ French

☒ Other (Spanish, Portuguese)

Accessibility and cost

☒ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☐ fee for use

Where to Access

National Clearinghouse for Alcohol and Drug Information
P.O. Box 2345
Rockville, MD 20847-2345
1-900-729-6686
OR

Elizabeth Rahdert, Ph.D.
National Institute on Drug Abuse
National Institutes of Health
5600 Fishers Lane, Room 10A-10
Rockville, MD 20857
(301) 443-0107
er34g@nih.gov

PDF available from: http://eib.emcdda.europa.eu/html.cfm/index4439EN.html.

Computerized version

PowerTrain, Inc.
8201 Corporate Drive
Suite 1080
Landover, MD 20785
(301) 731-0900

Summary of test development data

Quality of reporting

High, based on STARD rating (see Appendix, p. 76).

Summary of validity and Reliability Data

High

DISC Predictive Scales (DPS)

Brief description

The **DISC Predictive Scales (DPS)** is a diagnosis-specific self-report inventory designed to identify youth who are likely to meet diagnostic criteria for one or more mental health disorders (including substance use disorders). The scales and related items are derived from a secondary analysis of a large epidemiological dataset containing responses to the full Diagnostic Interview Schedule for Children (DISC 2.3) and other DSM-III diagnostic information. The 56 items in the inventory refer to the past 12 months. The DISC scales are:

- simple phobia
- social phobia
- agoraphobia
- overanxious disorder
- obsessive compulsive disorder
- separation anxiety disorder
- eating disorders
- major depressive disorder
- ADHD
- oppositional defiant disorder
- conduct disorder
- alcohol/substance use disorder

Appropriate target populations

Validation data cover a juvenile justice population aged 9 to 17.

Administration options

Parent and youth self-report and the instrument is typically delivered via computer with items appearing on the screen and also heard by audio via headphones.

Formats available

☒ self-administered (paper-and-pencil)

☒ self-administered (computer)

☐ clinician-administered

Languages available

☒ English

☐ French

☐ Other

Accessibility and cost

☐ no charge for use

☒ use requires permission of test developer (A PDF copy of the tool is available from the author.)

☐ use requires special training and/or professional or academic credentials

☒ fee for use (The software version is $250 per installation.)

Where to access

Contact Chris Lucas for more information: casiasoftware@optonline.net or visit http://www.promotementalhealth.org/downloads/DISC%20Brochure.pdf

Summary of test development data

Quality of reporting

High, based on STARD rating (see Appendix, p.76).

Summary of validity and reliability data

High, but data on test-retest reliability would be helpful.

GAIN Short Screener (GSS)

Brief description

The **GAIN Short Screener (GSS)** is made up of 20 items (four five-item subscales). The tool is part of the Global Appraisal of Individual Needs (GAIN) family of screening and assessment measures. The GAIN-SS subscales identify:

- internalizing disorders
- externalizing disorders
- substance use disorders
- crime/violence.

The GAIN-SS was published in 2006 and has attracted considerable attention from policy-makers and program managers because of its brevity, as well as its coverage of the two broad domains of psychopathology (internalizing and externalizing disorders) and substance abuse. It has potential as a tool for both substance use services (to screen for mental disorders) and mental health services (to screen for substance use disorders). It is also a good option for primary care and other health and social services.

The response choices for each question are: past month, two to 12 months ago, more than a year ago, or never. The number of past-month symptoms is used as a measure of change; the number of past-year symptoms is used to indicate the probability of a current diagnosis; and the number of lifetime symptoms is used as a measure of lifetime severity.

Appropriate target populations

The GAIN-SS has been validated for subjects aged 10 to 17, as well adults.

Administration options

Formats available

☒ self-administered (paper-and-pencil)

☒ self-administered (computer)

☒ clinician-administered

Time required

Administration time is three to five minutes (longer with younger children).

Languages available

☒ English

☐ French

☒ Other (Spanish)

Accessibility and cost

☐ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☒ fee for use (PDF version is available at the Chestnut website; there is a licensing fee of approximately $100. See website for more information.)

Where to access

www.chestnut.org/LI/gain/GAIN_SS/GAIN-SS_Manual.pdf

Summary of test development data

Quality of reporting

High, based on STARD rating (see Appendix, p. 76).

Summary of validity and reliability data

Moderate, largely because the one validation study to date used diagnostic data derived from the same interview guide and same interview as the screening tool itself.

Drug Use Screening Inventory (DUSI) and (DUSI-R)

Brief description

The **Drug Use Screening Inventory (DUSI)** and a revised version **(DUSI-R)** were developed to identify consequences of alcohol and drug involvement. The DUSI is a 149-item multidimensional instrument that quantifies not only involvement with drugs and alcohol, but also associated problems in the areas of mental health and psychosocial domains. The DUSI-R consists of 159 items. One goal of the revised version was to incorporate a "lie scale" to account for denial of problem areas.

Both the original and revised versions cover 10 domains. These are:

- substance use
- behaviour problems
- health status
- psychiatric disorder
- social competency
- family adjustment
- school adjustment
- peer relations
- leisure/recreation.

The most recent study used the revised version to aggregate items into scales that implicate current and future psychiatric disorders, with scales derived for ADHD, conduct, antisocial, anxiety, depression and substance use disorders.

Appropriate target populations

Validated in adolescents 12 to 18 years old. The validation data for the revised tool focused on psychiatric disorders and included boys only. Validation studies have been conducted in Costa Rica with a Spanish version.

Administration options

Formats available

☒ self-administered (paper-and-pencil)

☒ self-administered (computer)

☐ clinician-administered

Time required

Twenty to 30 minutes

Languages available

☒ English

☐ French

☒ Other (Spanish)

Accessibility and cost

☐ no charge for use

☐ use requires permission of test developer

☐ use requires special training and/or professional or academic credentials

☒ fee for use (The developers recommend administration by drug counsellors and other qualified users.)

Where to Access

Ralph Tarter,
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Summary of test development data

Quality of reporting

Moderate, based on STARD rating (see Appendix, p.76).

Summary of validity and reliability data

Moderate, largely due to the best diagnostic validation data being confined to boys.

Appendix: Project Methodology

Project scope

The strategy for searching and reviewing the relevant literature was an iterative one that began by casting a wide net and instituting increasingly stringent criteria and rating processes to arrive at the most promising, well-validated and reliable screening tools. Within this general strategy, several important overriding criteria put some critical boundaries around the scope of the project and, by implication, the eventual end product. These criteria related to:

- age of the target audience for the tools
- tools for screening versus assessment purposes
- type of disorder or substance use/mental health problem
- types of tool and administration procedures
- language and cultural issues
- availability of research information in published versus "grey" literature
- accessibility of the tool (i.e., tools that are free-of-charge versus tools that have costs associated with them).

Literature search and review process

The search and review process was divided into six broad steps:

1. Gathering abstracts, titles and articles.

2. Trimming the list.

3. Validating the list of tools from the articles.

4. Broadening the search based on the identified tools themselves.

5. Rating the final subset of articles.

6. Describing the tools represented in the best validation studies.

Figure 2 provides a high level overview of the search, retrieval and review process. It integrates the steps incorporated in the initial search covering 1986–2006 and for a subsequent update that covered 2006-2008.

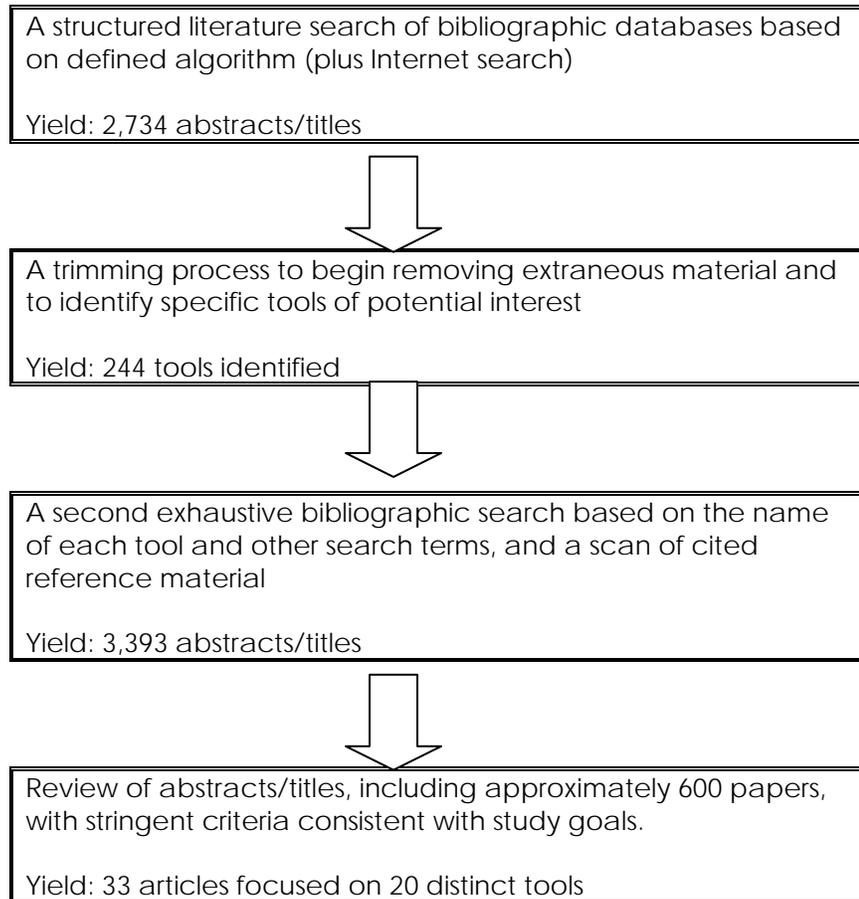**Figure 2: Overview of Steps in the Search and Retrieval Process**

A structured literature search of bibliographic databases based on defined algorithm (plus Internet search)
Yield: 2,734 abstracts/titles

A trimming process to begin removing extraneous material and to identify specific tools of potential interest
Yield: 244 tools identified

A second exhaustive bibliographic search based on the name of each tool and other search terms, and a scan of cited reference material
Yield: 3,393 abstracts/titles

Review of abstracts/titles, including approximately 600 papers, with stringent criteria consistent with study goals.
Yield: 33 articles focused on 20 distinct tools

Table 3 lists the screening tools in each of the three categories ("Mental Health but not SUD," "Substance Use Disorder but no other MH" and "Both SUD and other MH") that survived the iterative and rigorous review process. These tools in Table 3 also underwent a rating of the quality of the article against a set of recognized "quality of reporting criteria" designed specifically for diagnostic screening tools[4]. These criteria are known as the STARD criteria and are described in the next section.

In terms of the number of separate screening tools, this final stage of the review and rating process included:

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[4] Bossuyt, P.M., Reitsma, J.B., Bruns, D.E., Gatsonis, C.A., Glasziou, P.P., Irwig, L.M. et al. (2003). Towards complete and accurate reporting of studies of diagnostic accuracy: the STARD initiative. *British Medical Journal, 326,* 41–44.

- nine tools validated to screen for mental disorders but not substance use disorders

- seven tools validated to screen for substance use disorders but not other mental disorders

- four tools validated to screen for both mental and substance use disorders.

Table 3: Tools and Studies Emerging from the Search, Retrieval and Review Process

A. Mental Health but not SUD[5]			
Tool (9 tools in total)	Author/Reference[6]	STARD rating	# of articles
Pediatric Symptom Checklist (PSC)	Gardner, Lucas, Kolko & Campo (2007) Tzoumas, Tzoumas, Burlingame et al. (2007) Anderson, Spratt, Macias et al. (1999)	26 24 26	3
Youth Outcome Questionnaire (Y-OQ-12)	Tzoumas, Tzoumas, Burlingame et al. (2007)	26	1
Child Behavior Checklist (CBCL)	Ferdinand (2008) Gardner, Lucas, Kolko, & Campo (2007) Krol, De Bruyn, Coolen, & van Aarle (2006) Becker, Hagenberg, Roessner et al. (2004) Jensen, Salzberg et al. (1993)	24 26 20 24 20	5
Strengths and Difficulties Questionnaire (SDQ)	Lukumar, Wijewardana et al. (2008) Alyahri & Goodman (2006) Samad, Hollis, Prine, & Goodman (2005) Becker, Hagenberg, Roessner et al. (2004) Becker, Woerner, Hasselhorn et al. (2004) Hawes & Dadds (2004)	15 24 17 25 22 19	6
Youth Self-Report (YSR)	Ferdinand (2008) Doyle, Mick, & Biederman (2007) Becker, Hagenberg, Roessner et al. (2004)	24 15 24	3
Reporting Questionnaire for Children (RQC)	Tadesse, Kebede, Tegegne & Alem (1999)	23	1
Child Symptom Inventory-4 (CSI-4)	Sprafkin, Gadow, Salisbury et al. (2002)	23	1
General Health Questionnaire (GHQ)	Banks (1983)	18	1
Early Childhood Inventory-4 (ECI-4)	Sprafkin, Volpe, Gadow et al. (2002)	18	1

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[5] Tools included may also include subscales for other problem areas related to psychosocial issues and problems areas, but NOT substance use disorders specifically.
[6] Full reference is included in the reference list on page 72.

B. Substance Use Disorder but no other MH[7]			
Tool (7 tools in total)	**Author/Reference**	**STARD rating**	**# of articles**
CRAFFT	Bernard, Bolognini, Plancherel et al. (2005) Knight, Sherrit, Gates & Harris (2004) Knight, Sherrit, Shrier et al. (2002)	18 24 29	3
RAFFT	Bastiaens, Francis & Lewis (2000)	25	1
Alcohol/Drug Acknowledgement Scale (ACK)	Stein & Graham (2001)	21	1
Alcohol/Drug Problem Proneness Scale (PRO)	Stein & Graham (2001)	21	1
MacAndrew Alcoholism Scale-Revised (MAC-R)	Stein & Graham (2001)	21	1
DEP-ADO	Bernard, Bolognini, Plancherel et al. (2005)	18	1
Rutgers Alcohol Problem Index (RAPI)	Ginzler, Garrett, Baer & Peterson (2007)	9	1
C. Both SUD and other MH			
Tool (4 tools in total)	**Author/Reference**	**STARD rating**	**# of articles**
Problem Oriented Screening Tool for Teenagers (POSIT)	Latimer, O'Brien, McDouall et al. (2004) Danesco & Marques (2002) Latimer, Winters & Stinchfield (1997) McLaney, Del Boca & Babor (1994)	26 8 16 15	4
DISC Predictive Scales (DPS)	Roberts, Stuart & Lam (2008) McReynolds, Wasserman & Fisher (2007) Lucas, Zhang, Fisher et al. (2001)	25 23 26	3
GAIN Short Screener (GSS)	Dennis, Chan & Funk (2006)	22	1
Drug Use Screening Inventory (DUSI) and (DUSI-R)	Kirisci, Tarter, Mezzich & Reynolds (2008) Kirisci, Mezzich & Tarter (1995)	19 20	2

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[7] Tools included may also include subscales for other problem areas related to psychosocial issues and problems areas, but NOT mental disorders specifically.

Reference list for Table 3

Alyahri, A. & Goodman, R. (2006). Validation of the Arabic Strengths and Difficulties Questionnaire and the Development and Well-Being Assessment. *Eastern Mediterranean Health Journal, 12 Suppl 2*, S138-146.

Anderson, D. L., Spratt, E. G., Macias, M. M., Jellinek, M. S., Murphy, J. M., Pagano, M. et al. (1999). Use of the Pediatric Symptom Checklist in the pediatric neurology population. *Pediatric Neurology, 20,* 116-120.

Banks, M. H. (1983). Validation of the General Health Questionnaire in a young community sample. *Psychological Medicine, 13,* 349-353.

Bastiaens, L., Francis, G., & Lewis, K. (2000). The RAFFT as a screening tool for adolescent substance use disorders. *American Journal on Addictions, 9,* 10-16.

Becker, A., Hagenberg, N., Roessner, V., Woerner, W., & Rothenberger, A. (2004). Evaluation of the self-reported SDQ in a clinical setting: Do self-reports tell us more than ratings by adult informants? *European Child & Adolescent Psychiatry*, *13 Suppl 2*, 17-24.

Becker, A., Woerner, W., Hasselhorn, M., Banaschewski, T., & Rothenberger, A. (2004). Validation of the parent and teacher SDQ in a clinical sample. *European Child & Adolescent Psychiatry, 13 Suppl 2*, II11-16.

Bernard, M., Bolognini, M., Plancherel, B., Chinet, L., Laget, J., Stephan, P. et al. (2005). French validity of two substance-use screening tests among adolescents: a comparison of the CRAFFT and DEP-ADO. *Journal of Substance Use*, 10, 385-395.

Danseco, E. R. & Marques, P. R. (2002). Development and validation of a POSIT-Short Form: screening for problem behaviors among adolescents at risk for substance use. *Journal of Child & Adolescent Substance Abuse, 11(3), 17-36*.

Dennis, M. L., Chan, Y. F., & Funk, R. R. (2006). Development and validation of the GAIN Short Screener (GSS) for internalizing, externalizing and substance use disorders and crime/violence problems among adolescents and adults. *American Journal on Addictions, 15,* 80-91

Doyle, R., Mick, E., Biederman, J. (2007). Convergence between the Achenbach Youth Self-Report and structured diagnostic interview diagnoses in ADHD and non-ADHD youth. *The Journal of Nervous and Mental Disease, 195*, 350-352.

Ferdinand, R. F. (2008). Validity of the CBCL/YSR DSM-IV scales anxiety problems and affective problems. *Journal of Anxiety Disorders, 22,* 126-134.

Gardner, W., Lucas, A., Kolko, D. J., & Campo, J. V. (2007). Comparison of the PSC-17 and alternative mental health screens in an at-risk primary care sample. *Journal of the American Academy of Child & Adolescent Psychiatry, 46,* 611-618.

Ginzler, J. A., Garrett, S. B., Baer, J. S., & Peterson, P. L. (2007). Measurement of negative consequences of substance use in street youth: An expanded use of the Rutgers Alcohol Problem Index. *Addictive Behaviors, 32,* 1519-1525.

Hawes, D. J., & Dadds, M. R. (2004). Australian data and psychometric properties of the Strengths and Difficulties Questionnaire. *Australian and New Zealand Journal of Psychiatry, 38,* 644–651.

Jensen P. S., Salzberg A. D., Richters J. E., Watanabe H. K. (1993). Scales, diagnoses, and child psychopathology. I. CBCL and DISC relationships. *Journal of American Academy of Child & Adolescent Psychiatry, 32,* 397-406.

Kirisci, L. Mezzich, A., & Tarter, R. (1995). Norms and sensitivity of the adolescent version of the drug use screening inventory. *Addictive Behaviors*, *20*, 149-157.

Kirisci, L., Tarter, R., Mezzich, A., & Reynolds, M. (2008). Screening current and future diagnosis of psychiatric disorders using the Revised Drug Use Screening Inventory. *American Journal of Drug & Alcohol Abuse, 34*, 653-665.

Knight, J. R., Sherritt, L., Gates, E. A., & Harris, S. K. (2004). Should the CRAFFT substance abuse screening test be shortened? *Journal of Clinical Outcomes Management*, 11, 19-25.

Knight, J. R., Sherritt, L., Shrier, L. A., Harris, S. K., & Chang, G. (2002). Validity of the CRAFFT substance abuse screening test among adolescent clinic patients. *Archives of Pediatrics & Adolescent Medicine, 156,* 607-614.

Krol, N. P. C. M., De Bruyn, E. E. J., Coolen, J. C., & van Aarle, E. J. M. (2006). From CBCL to DSM: A Comparison of two methods to screen for DSM-IV diagnoses using CBCL data. *Journal of Clinical Child and Adolescent Psychology, 35,* 127-135.

Latimer, W. W., O'Brien, M. S., McDouall, J., Toussova, O., Floyd, L. J., & Vazquez, M. (2004). Screening for "substance abuse" among school-based youth in Mexico using the Problem Oriented Screening Instrument (POSIT) for Teenagers. *Substance Use and Misuse, 39,* 307-329.

Latimer, W. W., Winters, K. C., & Stinchfield, R. D. (1997). Screening for drug abuse among adolescents in clinical and correctional settings using the Problem-Oriented Screening Instrument for Teenagers. *American Journal of Drug and Alcohol Abuse, 23*, 79-98.

Lucas, C. P., Zhang, H., Fisher, P. W., Shaffer, D., Regier, D. A., Narrow, W. E. et al. (2001). The DISC Predictive Scales (DPS): Efficiently screening for diagnoses. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*, 443-449.

Lukumar, P., Wijewardana, K., Hermansson, J., Lindmark, G. (2008). Validity and reliability of Tamil version of strengths and difficulties questionnaire self-report. *Ceylon Medical Journal*, *53*, 48-52.

McLaney, M. A., Del Boca, F., & Babor, T. (1994). A validation study of the Problem-Oriented Screening Instrument for Teenagers (POSIT). *Journal of Mental Health, 3*, 363-376.

McReynolds, L. S., Wasserman, G. A., Fisher, P., & Lucas, C. P. (2007). Diagnostic screening with incarcerated youths: Comparing the DPS and Voice DISC. *Criminal Justice and Behavior, 34*, 830-845.

Roberts, N., Stuart, H., & Lam, M. (2008). High school mental health survey: Assessment of a mental health screen. *The Canadian Journal of Psychiatry, 53*, 314-322.

Roberts, N., Stuart, H., & Lam, M. (2008). High school mental health survey: Assessment of a mental health screen. *The Canadian Journal of Psychiatry, 53*, 314-322.

Samad L., Hollis C., Prince M., Goodman R. (2005) Child and adolescent psychopathology in a developing country: Testing the validity of the Strengths and Difficulties Questionnaire (Urdu version). *International Journal of Methods in Psychiatric Research*, *14*, 158-166.

Sprafkin, J., Gadow, K. D., Salisbury, H., Schneider, J., & Loney, J. (2002). Further evidence of reliability and validity of the Child Symptom Inventory-4: parent checklist in clinically referred boys. *Journal of Clinical Child and Adolescent Psychology, 31*, 513-524.

Stein, L. A. & Graham, J. R. (2001). Use of the MMPI-A to detect substance abuse in a juvenile correctional setting. *Journal of Personality Assessment, 77*, 508-523.

Tadesse, B., Kebede, D., Tegegne, T., & Alem, A. (1999). Childhood behavioural disorders in Ambo district, western Ethiopia. II. Validation of the RQC. *Acta Psychiatrica Scandinavica, Supplement 99,* 98-101.

Tadesse, B., Kebede, D., Tegegne, T., & Alem, A. (1999). Childhood behavioural disorders in Ambo district, western Ethiopia. II. Validation of the RQC. *Acta Psychiatrica Scandinavica, Supplement 99,* 98-101.

Tzoumas, A. C., Tzoumas, J. L., Burlingame, G. M., Nelson, P. L., Wells, M. G., & Gray, D. D. (2007). The Y-OQ-12: Psychosocial screening of youth in primary care medicine using items from an outcome measure. *Clinical Psychology & Psychotherapy, 14,* 488-503.

Rating the articles

The rating of the quality of reporting for each tool entailed the use of a formal set of criteria adopted from the STARD criteria for rating and reporting on diagnostic accuracy. Those criteria were further adapted for the purposes of this project. Complete and accurate reporting allows the reader to assess potential bias and judge the generalizability and applicability of the results. **The STARD checklist does not yield an assessment of the research findings *per se*, (i.e., a summary of how well a test actually performs against the reference standard) but rather an assessment of the quality of reporting of essential features of all phases of a validation study.** Results from the checklist, therefore, allow a reader to assess the likelihood that the results are unbiased and applicable to their own situation.

In Figure 3, the tools are ordered based on the STARD ratings. The left side of the chart shows the results for the four tools that serve the dual functions of screening for both mental health and substance use disorders (POSIT, DSP, GSS and the DUSI-R). The top scores among these four were the POSIT and the DPS with scores of 26, followed closely by the GSS with a score of 22. For the mental health tools that do not include a screening for substance use disorders, the majority yielded similar STARD scores (ranging from 23 to 26), with the two notable exceptions of the GHQ and the ECI-4 (scoring 18).

Figure 3: STARD Ratings for Articles on Mental Health–Related Tools
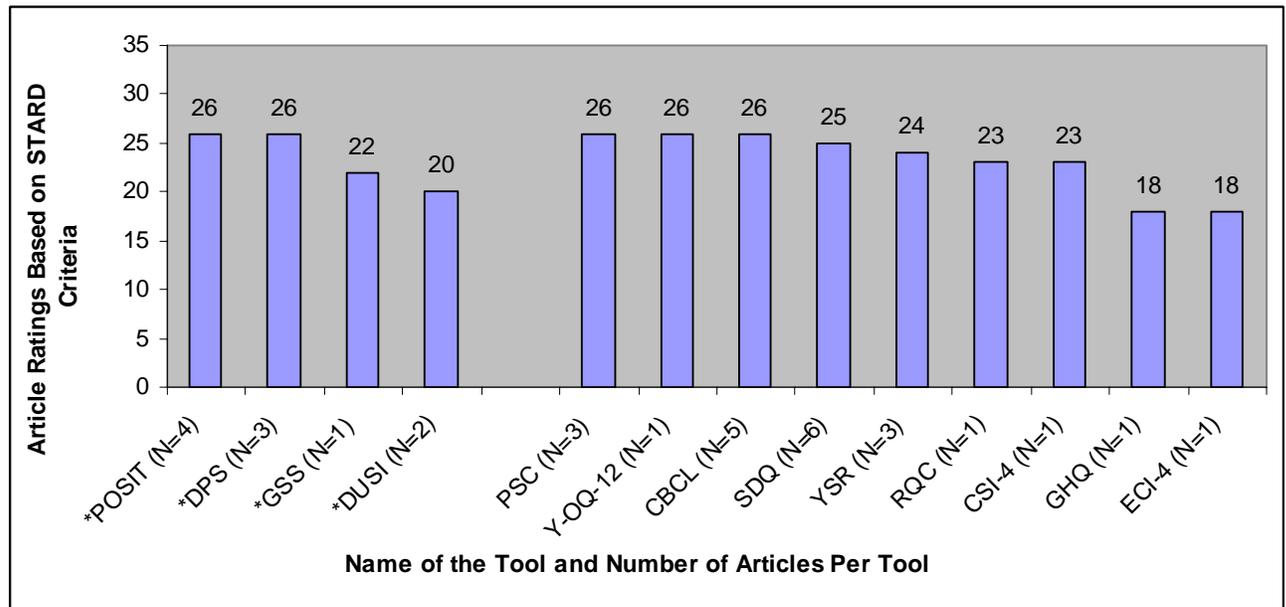

Figure 4 shows the ratings for the substance use–related screening tools, again with the "dual-function" tools grouped on the left, and those aimed exclusively on substance use disorders on the right. The STARD scores are the same for the dual-function tools as were shown in Figure 3—these are the same articles. For the substance use tools, the CRAFFT stands out with a score of 29; indeed it received the highest rating across all the tools being reviewed. The RAFFT follows with a rating of 25, and then the remainder lie fall closer to 20, with the exception of the RAPI that scored only 9. All the substance use–specific tools, with the exception of the CRAFFT, were the subject of only *one* article meeting our project criteria for validation design. This stands in contrast to many of the mental health–related tools in Figure 3.

Figure 4: STARD Ratings for Articles on Substance Use–Related Tools
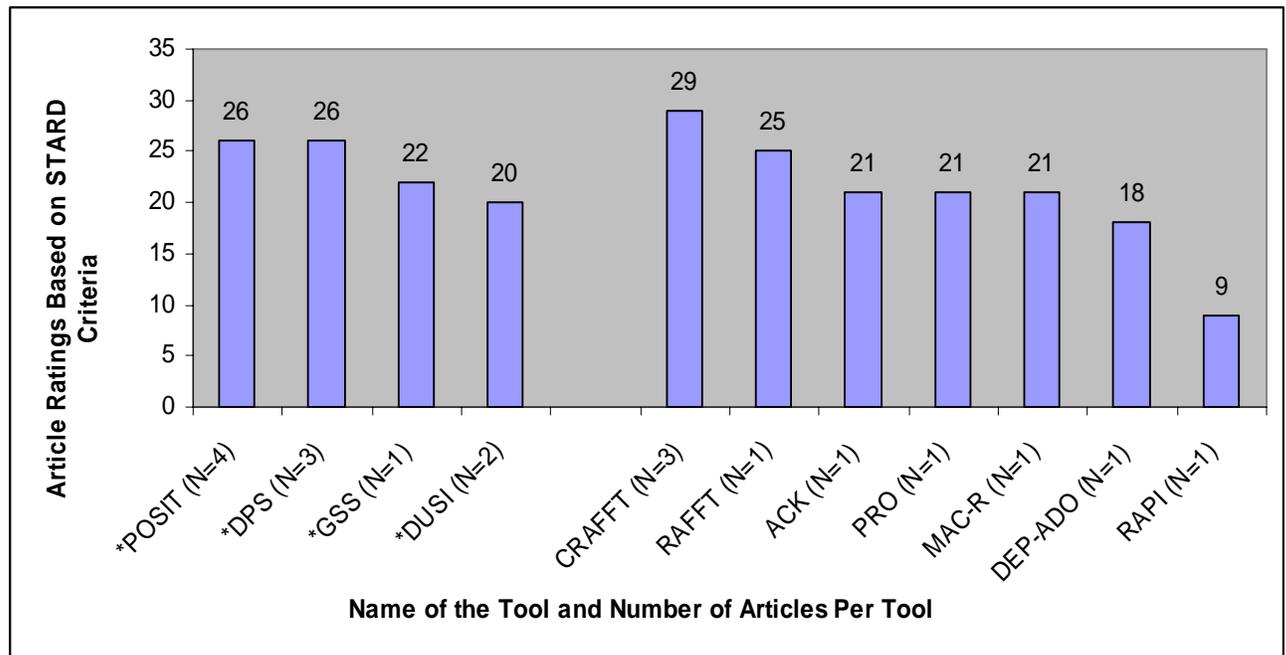
To get a better sense of relative scoring on the STARD, we looked across Figures 3 and 4, and also across the dual-function versus single-function tools, and derived three groups as follows:

- *"high" scores:* 25 and higher (POSIT, DPS, PSC, Y-OQ-12, SDQ, CRAFFT and RAFFT)
- *"moderate" scores:* 20-24 (GSS, DUSI-R, YSR, RCQ, CSI-4, ACK, PRO, MAC-R)
- *"low" scores:* less than 20 (GHQ, ECI-4, RAPI).

As already emphasized, the STARD scores, and the groupings based on relative magnitude of the scores, reflect the thoroughness of the reporting of key features of the research and not necessarily the quality of the screening test itself, its psychometric performance and other factors related to its value in certain settings and populations.