School-Age Children with Autism Spectrum Disorders: Screening and Identification

Lee A Wilkinson

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School-age children with autism spectrum disorders: screening and identification

Lee A. Wilkinson*
Nova Southeastern University, Center for Psychological Studies, College Ave., Fort Lauderdale, FL, USA

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Epidemiological studies indicate a worldwide increase in the prevalence of autism spectrum disorders (ASDs) over the past decade. ASDs are no longer considered rare conditions. Although the reason(s) for this rise are uncertain, research indicates that specialised intervention at an early age is vital for optimising the outcomes of children with ASD. However, not all children with milder forms of autism will be identified prior to school entrance. Hence, it is essential for educators and school-based support professionals to ensure that children who have risk factors and/or warning signs of ASD are identified and provided with special educational services as soon as possible. The aim of this article is to review five validated screening tools that hold promise for identifying at-risk school-age children in need of a more in-depth diagnostic assessment.

Keywords: autism; autism spectrum disorders; special needs; screening questionnaires; intervention

Introduction

Epidemiological studies indicate a worldwide increase in the prevalence of autism spectrum disorders (ASDs) over the past decade. Autism is much more prevalent than previously thought, especially when viewed as a spectrum of disorders. Surveys focusing on a broader definition of ASD, of which autism is a single form, have reported progressively rising annual incidence and prevalence estimates (Fombonne 2003; Wing and Potter 2002). This increase has been noted internationally in all countries recognising autism. For example, a recent review of 37 epidemiological studies conducted in 13 different countries and regions between 1966 and 2004 concluded that the best estimate of the prevalence of all ASDs in Europe and North America combined is approximately 0.6% (60/10,000 or approximately one per 160) of the population (Fombonne 2005). This convergence of estimates for all ASDs is noteworthy, particularly when based on studies with improved methodology. Although we do not have a representative sample for the USA, the Centers for Disease Control and Prevention (2007) Autism and Developmental Disabilities Monitoring report indicates an average prevalence estimate of 6.7 per 1000 eight-year-old children (or approximately one in 150 children with ASD). In the UK, the Medical Research Council’s (2001) Review of Autism Research: Epidemiology and Causes reported that there was good agreement that ASDs affect

*Email: lawilkinson@bellsouth.net
approximately 60 per 10,000 children under 8 years of age. A recent study of rates among a sample of nearly 60,000 children 9–10 years of age in South London revealed 116 per 10,000, or nearly double the estimated rate of 60 per 10,000 across countries (Baird et al. 2006; Fombonne 2005). At present, the best estimate is that autism now affects approximately one in 100 children aged 5–16 years of age in the UK, or approximately 133,500 children (Office of National Statistics 2005). Based on this statistic, one can predict that a majority of mainstream schools will have one or more children with ASD.

The dramatic rise in prevalence is further evident in the percentage of children with ASD receiving special educational services. For example, the number of students identified under the Individuals with Disabilities Education Improvement Act, Part B (IDEA 2004) criteria for autism in the USA grew more than 500% from 1995 to 2005 (US Department of Education 2006). Although a change in special education policy and greater availability of services seem likely to have contributed to this increase, a similar rise in rates has been reported in the UK (Wing and Potter 2002). The number of students with autism with a statement of special needs in England increased approximately 44% from 2004 to 2008 (Autism Education Trust 2008). Figures for the number of students with ASD on School Action Plus showed an even greater increase of 74% for the same time-period.

The explanations for the dramatic increase in the incidence and prevalence of ASD are varied and multifaceted. They include: changes in diagnostic criteria; improved identification; growing awareness among parents and professionals; conception of autism as a spectrum disorder; and greater availability of services (Fombonne 2005; Wing and Potter 2002). Whatever the reasons, the current prevalence figures hold clear-cut implications for professionals across the global educational community who face the challenge of identifying and providing early intervention for an increasing number of children with some form of ASD who may constitute 1% of the child population (Fombonne 2005; Wilkinson 2005).

Early behavioural intervention is acknowledged as a critical determinant in the course and outcome of ASD (Bryson, Rogers, and Fombonne 2003; Rogers and Vismara 2008). Research indicates that the outcomes for children with ASD can be significantly enhanced by early intensive intervention (Bryson, Rogers, and Fombonne 2003; Filipek et al. 1999; Wilkinson 2008). However, it is not unusual for children with milder forms of autism to go undiagnosed until well after entering school (Brock, Jimerson, and Hansen 2006). Research conducted in the both the USA and UK has consistently documented a gap between the age at which children with ASD can be potentially identified and the age at which they actually are identified. For example, a survey of parents in the UK found that autism was diagnosed on average at 5.5 years and higher-functioning ASD such as Asperger Syndrome at 11 years. In many instances, parents waited more than five years before a diagnosis was confirmed (Howlin and Moore 1997; Howlin and Asgharian 1999). Almost half of the families reported that the school system and other parents were the major source of assistance over time, rather than the medical health care community. Indeed, research indicates that only 3% of children with ASD are identified solely by non-school resources (Brock, Jimerson, and Hansen 2006). A recent survey of parents of school-age children with ASD across five countries found an average diagnosis at 7.5 years for Asperger syndrome and a consistent concern with the timeliness of identification and frustration with the delay in accessing services (Goin-Kochel, Mackintosh, and Myers 2006). Thus, it is critically important to identify those children in need of further assessment so as to reduce the time between symptom appearance and diagnosis (Goin-Kochel, Mackintosh, and Myers 2006).
The importance of early identification and specialised intervention programmes for ASD is emphasised by practice parameters published by the American Academy of Pediatrics Committee on Children with Disabilities (2001), the National Research Council (2001), and the Autism Working Group (National Autistic Society 2003) in the UK. Both the Individuals with Disabilities Education Act (IDEA) in the USA and the SEN and Disability Act of 2001 in the UK include provision for early identification and intervention, progress monitoring, inclusive education practices, and greater parental participation for children with special educational needs. Although the needs of children with ASD are complex, they can be accommodated in mainstream placements if provided with the appropriate supports (Jordan 2003; Wilkinson 2005).

Purpose

School-based professionals are now more likely to be asked to participate in the screening and identification of school-age children with ASD than at any other time in the recent past. Those who work with this age group should be prepared to recognise the presence of risk factors and/or early warning signs of ASD, engage in case finding, and be familiar with screening tools in order to identify children in need of further evaluation. The primary aim of this paper is to provide school professionals with a review of five screening instruments with promising psychometric properties for identifying school-age children who are most likely to have an ASD and thus, necessitate a comprehensive assessment.

The autism spectrum disorders

There is international and cross-disciplinary agreement on the primary characteristics and validity of autism as a diagnostic category (Ozonoff, Goodlin-Jones, and Solomon 2005; Tidmarsh and Volkmar 2003). The *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association 2000) and the tenth edition of the International Classification of Diseases (ICD-10) (World Health Organization 1993) list categories of pervasive developmental disorders, which include autism and four other associated disorders. The terms ‘pervasive developmental disorder’ (PDD) and ‘autism spectrum disorder’ (ASD) are used interchangeably to describe this overarching group of disorders characterised by delays or atypicality in social development, communication, neurocognition, and behaviour that vary in severity of symptoms, age of onset, and association with other childhood disorders (National Research Council 2001; Wing 2005). The five PDD/ASDs are: (1) Austistic Disorder; (2) Asperger Disorder; (3) Rett’s Disorder; (4) Childhood Disintegrative Disorder; and (5) Pervasive Developmental Disorder Not Otherwise Specified (PDDNOS). As continuous and generally lifelong disorders, all have serious clinical implications for personal, social, educational and other important areas of functioning. Of these disorders, Rett’s Disorder and Childhood Disintegrative Disorder are very rare conditions. They are also considered nonautistic PDDs in terms of course and outcome (Volkmar and Klin 2005). Throughout this article, the terms ‘autism’, ‘autistic’, and ASD refer to more capable (without intellectual disability[InD]) children with Autistic Disorder (or high-functioning autism), Asperger Disorder, and PDDNOS. These disorders are the ones observed most frequently among school-age children and those with the greatest relevance for the school professional. Table 1 summarises the characteristics and features of each ASD.
Screening for ASDs

Developing screening tools to identify the milder variants of autism tends to be especially difficult because the autism spectrum is comprised of a heterogeneous phenotype with imprecise boundaries, particularly at the higher end of the spectrum. Most existing rating scales for ASD were initially designed to establish a diagnosis for Autistic Disorder itself. Until recently, there were few validated screening measures available to assist in the identification of students who present with the core characteristics of the autistic phenotype on the higher end of the spectrum (Campbell 2005; Lord and Corsello 2005). We now have several promising instruments that can be used for the screening of school-age children.

The screening tools selected for review in this paper include two commercially published instruments, the Social Communication Questionnaire (SCQ) (Rutter, Bailey, and Lord 2003) and the Social Responsiveness Scale (SRS) (Constantino and Gruber 2005), and three validated research questionnaires, the Autism Spectrum Screening Questionnaire (ASSQ) (Ehlers, Gillberg, and Wing 1999), the Childhood Autism Spectrum Test (CAST) (Scott et al. 2002), and the Social Communication Disorders Checklist (SCDC) (Skuse, Mandy, and Scourfield 2005). The author conducted literature searches and consulted test catalogues in selecting commercially available screening measures. Literature reviews and validity studies were used to locate questionnaires specifically designed to identify the more subtle impairments associated with high-functioning ASD. All measures selected were considered to have sound psychometric properties, to be appropriate for school-age children, and time-efficient. Training needs were minimal and required little or no specific instruction to complete. However, interpretation of results presumed familiarity with ASD and experience in administering, scoring, and interpreting psychological tests.

Psychometric characteristics

The psychometric characteristics most frequently considered when evaluating screening measures are sensitivity and specificity. Both are important validity statistics that describe how well a test can identify true cases of a disorder. Sensitivity is the...
probability that a child with ASD will screen positive. Specificity is the probability that a child without ASD will screen negative. Sensitivity and specificity levels of 0.80 or higher are generally recommended (Coonrod and Stone 2005). False negatives (children with a disorder who screen negative) decrease sensitivity, while false positives (children without a disorder who screen positive) decrease specificity. An efficient screening tool should seek to minimise false negatives as these are children with likely ASD who remain unidentified (Goin-Kochel, Mackintosh, and Myers 2006; Johnson, Myers, and Council on Children with Disabilities 2007; National Research Council 2001). It is also important to note that a screening instrument’s predictive value will depend on the prevalence of the disorder in the population or group under consideration. For example, a screening measure may be expected to have higher positive predictive value and sensitivity when utilised with at-risk children who exhibit signs or symptoms of developmental delay, social skills deficits, or language impairment (Posserud, Lundervold, and Gillberg 2006).

Screening tools for school-age children

This section provides the reader with a summary description and review of each screening measure. Table 2 shows the ASD screening tools, together with information regarding format, administration time, validity, and applicable age ranges.

**ASSQ**

The ASSQ, formerly known as the Asperger Syndrome and High-Functioning Autism Questionnaire, is a parent and teacher questionnaire comprised of 27 items designed to discriminate between higher-functioning children with ASD and typically developing peers. The ASSQ has been widely used as a screening instrument in the UK and across northern Europe. The content addresses social interaction (11 items), verbal and non-verbal communication (six items), restricted and repetitive behaviours (five items), and motor clumsiness and associated symptoms (five items). Social items include questions related to difficulties with friendship (e.g., ‘Wishes to be sociable, but fails to make relationships with peers’); prosocial behaviour (e.g., ‘Lacks empathy’); and social communication (e.g., ‘Uses language freely but fails to make

<table>
<thead>
<tr>
<th>Measure</th>
<th>Age range</th>
<th>Format (no. items)</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Time to complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSQ</td>
<td>7–16</td>
<td>Questionnaire – parent and/or teacher (27)</td>
<td>0.91</td>
<td>0.86</td>
<td>10 minutes</td>
</tr>
<tr>
<td>CAST</td>
<td>4–11</td>
<td>Questionnaire – parent (37)</td>
<td>0.88</td>
<td>0.98</td>
<td>10 minutes</td>
</tr>
<tr>
<td>SCDC</td>
<td>4:0–16:0</td>
<td>Questionnaire – parent (12)</td>
<td>0.88</td>
<td>0.91</td>
<td>10 minutes</td>
</tr>
<tr>
<td>SCQ</td>
<td>4–adult</td>
<td>Questionnaire – parent (40)</td>
<td>0.96</td>
<td>0.80</td>
<td>10 minutes</td>
</tr>
<tr>
<td>SRS</td>
<td>4–18</td>
<td>Questionnaire – parent and/or teacher (65)</td>
<td>0.85</td>
<td>0.75</td>
<td>10–20 minutes</td>
</tr>
</tbody>
</table>

Notes: ASSQ, Autism Spectrum Screening Questionnaire; CAST, Childhood Autism Spectrum Test; SCDC, Social Communication Disorders Checklist; SCQ, Social Communication Questionnaire; SRS, Social Responsiveness Scale; \(^a\)Ehlers et al. (1999); \(^b\)Scott et al. (2002), Williams et al. (2005), http://autismresearchcentre.com/tests/cast_test.asp; \(^c\)Skuse et al. (2005); \(^d\)purchased from Western Psychological Services.
adjustment to fit social contexts or the needs of different listeners’). The respondent rates behavioural descriptions on a three-point scale, (0) ‘not true’; (1) ‘sometimes true’; and (2) ‘certainly true’. Two separate cut-off threshold scores are suggested. Parent scores of ≥ 19 and teacher scores of ≥ 22 are recommended as optimal cut-off points for identifying likely ASD cases while minimising the rate of false positives (Ehlers, Gillberg, and Wing 1999). These threshold scores are comparable to a sensitivity value of 0.62 for parent ratings and 0.70 for teacher ratings, and a specificity value of 0.90 (both parent and teacher ratings) in a clinical sample. Children with these sensitivity levels were 5.5 and 7.5 times more likely, respectively, to have an ASD than another developmental disorder. A lower cut-off threshold of ≥ 13 for parents and ≥ 11 for teachers increases sensitivity values to 0.91 and 0.90, respectively. While this threshold is recommended for use when it is essential to minimise the risk of missing mild autism cases (false negatives), these scores will increase the risk of false positives (Ehlers, Gillberg, and Wing 1999; Posserud, Lundervold, and Gillberg 2006). Research indicates that the ASSQ possesses strong test–retest reliability, acceptable inter-rater reliability, and good internal consistency, and that it significantly differentiates high-functioning ASD from other childhood disorder (Ehlers, Gillberg, and Wing 1999; Posserud et al. 2008).

**CAST**

The CAST, formerly titled the Childhood Asperger Syndrome Test, is a parent questionnaire based on the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association 1994) and the ICD-10 core features and behavioural indicators for autism, especially the milder variants such as high-functioning autism and Asperger Disorder. The CAST has a total of 37 items, of which 31 are key items that are summed to yield a total score (maximum possible score of 31). The remaining six items are control questions dealing with general development and are not scored. Social items include questions regarding peer relationships (e.g., ‘Does s/he join in playing games with other children easily?’) and play activities (e.g., ‘Does s/he prefer imaginative activities such as play-acting or story-telling, rather than numbers or lists of facts?’). The CAST demonstrates a sensitivity value of 1.0 and a specificity value of 0.97 when using a cut-off score of ≥ 15 in a large general population sample (Williams et al. 2005). Validation studies also report a strong correlation with both the Autism Diagnostic Observation Schedule (ADOS) (Lord et al. 2001) and the Autism Diagnostic Interview- Revised (ADI-R) (Rutter, LeCouteur, and Lord 2003), recognised ‘gold standard’ instruments for the assessment and diagnosis of autism. Research indicates that the CAST has good test–retest reliability and that it is a robust screening tool for identifying possible ASD cases in school-age populations (Allison et al. 2007; Williams et al. 2006).

**SCDC**

The SCDC is a questionnaire, completed by parents, that measures social reciprocity and verbal/nonverbal characteristics similar to those observed in ASD. There are 12 items, rated according to whether the corresponding behaviour has been observed during the past six months; whether the associated statements are ‘not true’, ‘quite or sometimes true’, or ‘very or often true’. Scores of 0–1–2 are assigned, so the maximum possible score is 24. The SCDC questions’ content comprises the domains
of social reciprocity (e.g., ‘Not aware of other people’s feelings’), non-verbal skills (e.g., ‘Does not pick up on body language’), and pragmatic language usage (e.g., ‘Cannot follow a command unless it is carefully worded’). The scale was derived from a principal components analysis of a longer instrument and represents a single dimension with strong internal consistency. Discriminant validity, measured in clinical population, predicted autism with a sensitivity of 0.90 and specificity of 0.69 with an obtained cut-off score of 9 points. Criterion validation showed modest correlations between the SCDC total score and ADI algorithm scores (qualitative abnormalities in reciprocal social interaction; qualitative abnormalities in communication; and restricted, repetitive, and stereotyped patterns of behaviour). A recent study of the SCDC with a large general population sample of children found that a maximum sensitivity of 0.88 and specificity of 0.91 were obtained with a cut-off score of 8 or more. Despite its brevity, the SCDC demonstrates high levels of sensitivity and specificity in relation to independently diagnosed cases of ASD in the general population. The SCDC-measured trait also has high heritability, which is similar in magnitude to the heritability of autistic traits measured by other screening scales.

**SCQ**

The SCQ, previously known as the Autism Screening Questionnaire, was initially designed as a companion screening measure for the ADI-R. The SCQ is a 40-item, parent/caregiver screening measure that identifies the symptomatology associated with disorders on the autism spectrum. Each item is scored 0 or 1 according to a yes/no response format. There are two separate versions available: Lifetime and Current. The Lifetime form is suitable for diagnostic screening purposes and the Current form useful for evaluating changes over time in children previously diagnosed with ASD. Questions include items in the reciprocal social interaction domain (e.g., ‘Does she/he have any particular friends or best friend?’), the communication domain (e.g., ‘Can you have a to and fro “conversation” with him/her that involves taking turns or building on what you have said?’) and the restricted, repetitive, and stereotyped patterns of behaviour domain (e.g., ‘Has she/he ever seemed to be more interested in parts of a toy or an object [e.g., spinning the wheels of a car], rather than using the object as intended?’). The SCQ is appropriate for individuals of any chronological age above four years of age. The total score obtained from the Lifetime form is interpreted with reference to a cut-off criterion. A threshold score of ≥ 15 is recommended to minimise the risk of false negatives and indicate the need for a comprehensive evaluation. The SCQ has been found to have good discriminative validity (Charman et al. 2007; Corsello et al. 2007). Comparing autism to other diagnoses (excluding mental retardation), this threshold score resulted in a sensitivity value of 0.96 and a specificity value of 0.80 in a large population of children with autism and other developmental disorders. A somewhat lower threshold may be considered if other risk factors are reported (e.g., sibling with autism or language impairment). A recent study of the properties of the SCQ in a cohort of children with ASD confirmed the utility of the SCQ as an efficient screener for at-risk groups of school-age children (Chandler et al. 2007).

**SRS**

The SRS is a brief quantitative measure of autistic behaviours in 4–18-year-olds. This 65-item rating scale was designed to be completed by an adult (teacher and/or parent
as respondent) who is familiar with the child’s current behaviour and developmental history. The questionnaire focuses on the child’s reciprocal social interactions, a core impairment in all pervasive developmental disorders. The SRS items measure the severity of ASD symptoms in the domains of social awareness, social information processing, reciprocal social communication, social anxiety/avoidance, and stereotypic behaviour/restricted interests. Each item is scored from 1 (not true) to 4 (almost always true). Scores are obtained for five treatment sub-scales: Social Awareness (e.g., ‘Is aware of what others are thinking or feeling’), Social Cognition (e.g., ‘Doesn’t recognise when others are trying to take advantage of him or her’), Social Communication (e.g., ‘Avoids eye contact or has unusual eye contact’), Social Motivation (e.g., ‘Would rather be alone than with others’), and Autistic Mannerisms (e.g., ‘Has an unusually narrow range of interests’). Interpretation is based on a single score reflecting the sum of responses to all 65 SRS questions. A total raw score of ≥ 75 was associated with a sensitivity value of 0.85 and specificity value of 0.75 for any ASD (Autistic Disorder, Asperger Disorder, or PDDNOS). The SRS demonstrates strong reliability across informants, acceptable internal consistency, and correlates highly with the ADI-R (Constantino et al. 2003; Lord and Corsello 2005). The SRS also affords the potential to reliably measure the severity of social impairment in the most common (and subtle) of autistic disorders, PDDNOS (Constantino and Gruber 2005).

Discussion

The screening instruments reviewed in this paper have demonstrated utility as efficient first-level screening questionnaires for identifying children across the broad autism spectrum that are in need of further assessment. In terms of their use, school professionals might consider the following multi-step procedure for the screening and assessment of students who demonstrate risk factors and/or warning signs of atypical development or where caregiver/parent concerns strongly suggest the presence of ASD symptoms.

Step one

The ASSQ, CAST, or SCDC can be utilised as an initial screen for students who present with elevated developmental risk factors and warning signs of autism. These questionnaires are useful in identifying the presence of the more broadly defined symptoms of higher-functioning ASD in general population settings. However, as with all screening tools, there will be some false negatives. Thus, children who screen negative, but who have a high level of risk and where caregiver and/or teacher concerns highly suggest ASD symptoms, might be given serious consideration for further screening or assessment (Filipek et al. 1999; Johnson, Myers, and Council on Children with Disabilities 2007). All children who exhibit developmental variations and behaviours consistent with an autism-related disorder should continue to be monitored, regardless of screening results.

Step two

Children who meet the threshold criteria on the ASSQ, CAST, or SCDC can be screened further with the SCQ and/or SRS to quantify the degree of ASD symptomatology. These instruments afford the ability to measure the approximate level of
symptom severity impairment in the domains of reciprocal social behaviour, pragmatic language and communication, and stereotypical behaviour and restricted range of interests (Constantino and Gruber 2005; Rutter, Bailey, and Lord 2003). As with the initial screening, students who screen negative, but display concerns in the social behaviour and communication domains, should continue to be observed and monitored.

**Step three**

Students who meet the threshold criteria in step two may then be referred for an in-depth assessment. Because the SCQ and SRS are strongly related to well-established and researched gold standard measures such as the ADI-R, the results from these screening measures can be used in combination with an interdisciplinary assessment of social behaviour, language and communication, adaptive behaviour, motor skills, sensory issues, and cognitive functioning to help determine eligibility for special education services (Corsello et al. 2007; National Research Council 2001; Ozonoff, Goodlin-Jones, and Solomon 2005). In addition to classification and diagnosis, a critical component of this final step in the screening and assessment process involves developing an individual profile of the student’s strengths, weaknesses, and unique needs that can be linked to intervention and treatment. Parents are also encouraged to be actively involved in the planning and implementation of the recommended programmes and services.

**Limitations**

The screening tools discussed in this paper can be recommended as reliable and valid tools for identifying children across the broad autism spectrum. However, they are not without limitations. As with any screening instrument, some students who screen positive will not be diagnosed with a disorder. On the other hand, some children who are not identified with a likely autism spectrum condition will go on to meet the diagnostic criteria for one. Hence, it is especially important to carefully monitor those students who screen negative so as to minimise misclassification and ensure access to intervention services (Bryson, Rogers, and Fombonne 2003).

A further caveat involves the potential effect of gender differences on screening for ASD. Research suggests that there may be sex differences in expression of the broader autism phenotype (Kopp and Gillberg 1992; Thompson, Caruso, and Ellerbeck 2003; Wilkinson 2008). Although few studies have examined gender-specific differences on various screening measures, the ASSQ, CAST, SCDC, and SRS have generally reported higher mean scores for boys than girls (Williams et al. 2008). For example, the SRS identifies two separate total raw score cut-offs, with a lower threshold for girls than for boys (Constantino and Gruber 2005). Thus, a higher cut-off threshold for boys might be considered when screening for autism traits in the general population (Williams et al. 2008).

None of the screening measures can differentiate between the autism spectrum sub-types. While screening tools may have utility in broadly identifying children with an autism spectrum condition, they are not recommended as stand alone diagnostic instruments and should be used only as part of a more comprehensive assessment. They may also perform differently in various countries owing to cultural interpretation of the questionnaires’ items. Likewise, a screening tool’s efficiency will be influenced by the practice setting in which it is used. Practitioners must weigh
the disadvantages of an inaccurate classification against the consequences of a delayed or missed diagnosis (Goin-Kochel, Mackintosh, and Myers 2006). Finally, autism-specific tools are not currently recommended for the universal screening of typically developing school-age children (Allison et al. 2007; Johnson, Myers, and Council on Children with Disabilities 2007). Focusing on children with identified risk-factors and/or developmental delays (second-level screening) increases predictive values and results in more efficient identification efforts (Coonrod and Stone 2005; Lee et al. 2007).

Concluding comments
School and mental health professionals play a vital role in screening, contributing to diagnostic activities, and guiding parents and educators to empirically supported interventions for children with ASD (Rogers and Vismara 2008). Research indicates that outcomes for children on the autism spectrum can be significantly enhanced with early intensive intervention (Bryson, Rogers, and Fombonne 2003). Yet, early intervention can only be implemented if the child is identified. Screening is the initial step in the diagnostic process.

Among the most pressing challenges in identifying students with ASD is the need for more coordinated efforts among various professionals and disciplines for the training of educators in evidence-based instruction and behavioural management practices, and for greater attention to the emotional and social well-being of children with ASD. Likewise, personnel preparation, ongoing instruction and training for all school professionals in the identification of the ‘red flags’ of ASD, and the importance of early referral for screening and assessment should be given priority in educational and programme planning.

References


