Psychosocial assessments for young people: a systematic review examining acceptability, disclosure and engagement, and predictive utility

Abstract: Adolescence and young adulthood are often turbulent periods in a person’s life. There are high rates of accidental deaths, suicide, mental health concerns, substance use, and sexual experimentation. Health care professionals need to conduct holistic assessments of clients in these developmental life stages to identify psychosocial risks and provide targeted early intervention and implement prevention strategies. The most useful psychosocial assessments for most health care professionals are those that can provide a complete picture of the young person’s life and circumstances. This article identifies psychosocial assessment instruments that can be used as an initial assessment and engagement tool with the general population of young people presenting for health care. We review the psychometric properties of each of the instruments, determining what type of instrument is most acceptable to young people, whether any can increase disclosure and improve engagement between young people and health professionals, and whether they have predictive utility. The search strategy complied with the relevant sections of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. A total of 89 published articles were identified, covering 31 different assessment instruments. Results indicated that those that were self-administered were most acceptable to young people, although it is unclear whether pen-and-paper or computer formats were preferred. Most psychosocial assessments can improve rates of disclosure and enhance engagement between young people and health professionals; however, worryingly, we found evidence that clinicians did not always respond to some of the most serious identified risks. Only for one instrument was there any mention of predictive utility. Future research should employ longitudinal approaches to determine the predictive utility of psychosocial assessments and focus on whether the use of new technologies can improve rates of disclosure.

Keywords: adolescence, emerging adults, mental health, intervention, prevention, risk

Introduction
Adolescence and young adulthood are significant periods of social, emotional, physical and neurophysiologic development. During this time, young people push barriers, take on new roles and responsibilities, and increasingly become more reliant on their peers and less so on their parents and caregivers. While most young people successfully navigate these challenges, there are many who require additional support, with rates of accidental deaths, drinking and driving, suicide, mental health concerns, substance use, and sexually transmitted diseases peaking during this time. Early identification of these behavioral risks and emotional problems enables health professionals to provide appropriate support and implement preventative strategies, which is likely to lead to significant reductions in rates of morbidity and mortality.
Although “adolescence” and “young people” continue to be defined in various ways, recently, there has been some consensus, with these terms together understood to concern the ages from 12 to 25 years, as this covers the complete transition from childhood to adulthood. Neurophysiologic evidence shows that adolescence is not just a period of transition within the social sphere, but also a period of transition for the brain in which there are distinctly different processes and structures. For example, research suggests that the adolescent brain may be less responsive to stimuli relative to adults or children, leading adolescents to take greater risks or seek novelty stimuli. Historically, services have been split into child and adolescent mental health services for those under 18 years of age, and adult mental health services for those over 18 years. However, these services often differ in their views on diagnosis, etiology, and treatment, which makes the transition between the two particularly difficult. This dichotomy of service provision requires young people to not only navigate their developmental transition into adulthood but also navigate a new health care system at the age of 18 years. Over the past decade, a new model of service delivery that suggests youth specific services should be provided to those aged 12–25 years has been gaining support. The aim of these services is to provide continuous and developmentally appropriate support to the young person until they reach adulthood.

When a young person presents for physical or mental health care, it is highly likely that there will be a number of psychosocial issues that should be addressed. While the young person may initially disclose a certain issue, health care professionals should take the opportunity to conduct a holistic assessment of the young person, as this can lead to early intervention or implementation of prevention strategies for issues or risks that may otherwise go unaddressed. Further, a complete psychosocial assessment provides health professionals with a holistic picture of the young person, which is needed for an individualized treatment program that is likely to lead to better long-term prognosis. However, getting young people to speak about risky behaviors or difficult issues is a challenge and is likely to be contingent on trust, confidentiality, and direct questioning.

Many psychosocial assessment instruments have been developed that provide health care professionals in multidisciplinary contexts with a framework with which to use to discuss with young people their psychological, social, behavioral, and environmental concerns. The effectiveness of these instruments is reliant on their acceptability to young people, their ability to create a space for disclosure and engagement between the young person and health professional, and their predictive utility in identifying possible future risks and concerns.

The current systematic review aimed to identify psychosocial assessment instruments available for use with the general population of young people by clinicians working in primary care and multidisciplinary contexts. The psychosocial instruments of interest were those that could be used during initial contact with the young person and asked about multiple domains of their life in order to improve engagement and understanding between the young person and health professional. The domains included psychological and emotional as well as behavioral, environmental, and social aspects. Specifically, we aimed to identify the characteristics of each of the instruments, including the age it was suitable for, the mode of administration and administration time frame, its psychometric properties, and the context/location in which the instrument had been tested. We were also interested in determining whether there were common domains covered by the instruments. Further, we examined whether young people were willing to complete the assessments and whether this was dependent on the mode of instrument administration, whether the instruments could increase disclosure and engagement between the young person and health care professional, and whether the instrument could predict any future risky behaviors or emotional problems. It was particularly important to identify instruments that could be used across the 12–25 year age range to recognize the emerging service model of youth-specific mental health care.

Methods
A systematic review of the literature was undertaken by reviewing all published studies that describe the use of a psychosocial assessment for young people that could be used in an initial assessment context to improve engagement between the young person and health professional, and provide a complete picture of the young person and their environment. Acceptable articles included all types of trials, systematic reviews, individual instrument reviews, and critical discussions. A “psychosocial assessment” was defined as an assessment or instrument that provides information about multiple psychosocial areas of a young person’s life. The assessment could be self-administered, in the form of a structured or semi-structured interview, or a combination of these. To be considered “psychosocial” the instrument had to cover both psychological and social/environmental aspects. “Young people” were defined as those aged 12–25 years old.
The search methodology and reported findings comply with the relevant sections of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. Initially, a broad search strategy was implemented covering all studies published in English between January 1, 1980 and July 12, 2012 from MEDLINE®, Embase, PsycINFO® and the Cochrane Central Register of Controlled Trials databases. The search terms used were: “psychosocial” OR “multidimensional” AND “assess*” OR “measure*” OR “screen” AND “adolescen*” OR “young*” OR “child” OR “tool*”; and “therap*” AND “Engag*.” The Mental Measurements Yearbook database was searched using the terms “psychosocial” OR “multidimensional.” Additionally, all eleven volumes of Test Critiques and the reference books Measures for Clinical Practice, Assessment in Psychiatric and Mental Health Nursing, Oxford Handbook of Paediatrics, Behavioural, Social, and Emotional Assessment of Children and Adolescents, Major Psychological Assessment Instruments, and The Handbook of Psychological Testing were searched by hand to identify any other psychosocial instruments that met the study inclusion criteria. Further studies were identified through searching by hand the references of relevant studies and reviews.

Following the database search, abstracts and titles were scanned and irrelevant studies were removed; the remaining full-text articles were assessed for eligibility by both authors. The final eligibility criteria were that the article evaluated or discussed a psychosocial assessment that was: in English, for young people aged 12–25 years, for use with the general population, did not require proxy input from any other persons, and provided information about multiple psychosocial domains in the young person’s life. Instruments that asked about multiple domains but only provided a single overall score or outcome measure were excluded, as were those primarily used to diagnose a specific mental disorder. Further, instruments stated as only being for those aged 18 years and older were excluded to keep the review manageable; however, it was recognized that this would exclude a number of viable instruments for those in the 18–25-year-old age group.

Although the search was extensive, authors were not contacted to ascertain further information or to obtain unpublished work. A further systematic review for every published article on the identified instruments was not conducted, as the aim was to identify all psychosocial instruments that met the inclusion criteria; it was not to identify every published article on each of the identified instruments. Figure 1 shows the PRISMA flow diagram for study inclusion.

**Results**

**Search results**
The search strategy identified 89 published articles covering 31 different psychosocial instruments. Of the 89 articles, 44 were research trials, 40 were individual instrument reviews, and five were systematic reviews. The median number of identified references for each instrument was two, with the most referenced instrument being the HEADSSSS assessment with nine identified articles. The key characteristics of the 31 identified instruments are summarized in Table 1.

**Instrument summary**

**Acceptable age range**
The Structured Pediatric Psychosocial Interview (SPP) had the lowest recommended minimum age of use, at five years. While the Personal Problems Checklist for Adolescents (PPCA) had an age range of 13–17 years, there were also alternate forms of the instrument for those aged 5–12 years and 18+ years. Taking into account the three versions of the PPCA, this instrument covered the widest possible range of ages. The mean minimum age in reported studies was 11.42 years and the mean maximum age was 20 years.

**Administration time**
Of all the assessments, the minimum suggested administration time was three minutes, which was for HEADSSSS. The maximum suggested administration time was 90 minutes, which was for both HEADSSS and the Life Stressors and Social Resources Inventory—Youth Form (LISRES-Y). HEADSSSS had the largest suggested possible administration time range of 87 minutes. The mean administration time for all assessments was 27.53 minutes.

**Method and mode of administration**
While the aim of each of the instruments identified is to help promote engagement between the young person and health professional through discussions of the young person’s answers/results, many instruments were designed to be initially self-completed either using pen-and-paper or computer-assisted administration formats. Twenty-three instruments were identified as being purely self-administered, two were delivered purely in a structured/semi-structured interview, and six instruments could be delivered via either self-administration or interview. In terms of the mode of administration, at the time of research, 17 instruments were only available in a paper format for completion using a pen, one was only available in a computer/online format; two were only available in a face-to-face interview format; five
were available in both paper and online/computer versions; and six were available in all three formats: paper, online/computer, and face-to-face interview.

**Validity and reliability**

The construct, content, and criterion validity and the internal consistency and test–retest reliability were evaluated for each instrument and are summarized in Table 2. Evidence of validity and reliability coefficients was obtained solely from the articles identified within the search strategy. If there was no mention of any type of validity or reliability, evidence was noted as unclear. Evidence of construct validity was found for twelve instruments, content validity was present for 26 instruments, and criterion validity evident for 14 instruments. The Life Experiences Questionnaire (LEQ), Personal Inventory, Brief Life History Inventory (BLHI), and Psychological/Social History Report made no mention of any type of validity. Internal reliability coefficients were available for 19 instruments and test–retest reliabilities available for 12 instruments. Only KIDSCREEN, Behavior Assessment System for Children, Second Edition (BASC-2), Personality Inventory for Youth (PIY), Self-Description Questionnaire 2 (SDQ-2), and the Strengths and Difficulties Questionnaire (SDQ) had evidence for all three types of validity as well as internal and test–retest reliability.

**Location/context**

Half the instruments had been tested in multiple contexts. Eight instruments had only been tested in the initial instrument development or to obtain norms; these occurred in either a school or community context (four in each). Two instruments had only been tested in a general practice setting, one in an emergency department/hospital setting and one in a youth-specific mental health setting.
Domains
To identify the domains covered by each instrument and determine whether common domains existed, the individual domains of each instrument were categorized under one of 43 possible common domain headings. In some cases, domains covered within the instruments could fit more than one common domain category; for example, the HEADSSS assessment includes suicide and depression under the one domain name; therefore, this was included under both the anxiety/depression/mood and suicide domains during categorization. This was the case for a number of instruments and different domains. In other cases, instrument domains were more highly specified than the common domain name may indicate. For example, the Multidimensional Adolescent Assessment Scale (MAAS) included the separate domains of “mother problems,” “father problems,” and “family problems” – these domains were combined and categorized under the common domain name of “family.” The Instrument for Monitoring Adolescent Health Issues and the Psychological/Social History Report separated the domains for exercise and diet, and these were combined and categorized under the common domain name of “eating/body issues.” The Adolescent Health Review (AHR), Guidelines for Adolescent Preventive Services (GAPS), Instrument for Monitoring Adolescent Health Issues, MAAS, and Hilson Adolescent Profile (HAP) all contain separate domains for alcohol, cigarette use, and drug use; these were combined under the common domain name “substance use/abuse.” Finally, the AHR, GAPS, KIDSCREEN, MAAS, BLHI, BASC-2, HAP, LISRES-Y, PPCA, Psychological/Social History Report, Quickview Social History, SDQ-2, and Youth Risk and Resilience Inventory (YRRI) all ask specifically about education and omit work/employment; these were included within the “education/work” common domain category.

The number of domains covered by each instrument ranged from three in the YRRI, to 16 in the HAP. The average number of domains per instrument was nine. The most commonly included category was “social relations,” covered by 21 different instruments. This category included both social and intimate relationships and support. The domains covered by two or more instruments (and the number of instruments that covered them), in order were: social relations (21), education and work (19), mental health (18), physical health (17), emotional distress (15), harm or violence to self or others (12), sexuality (12), family relations (11), substance use/abuse (11), eating/body issues (11), rule-breaking behavior/conduct disorder or legal history (10), home environment (10), anxiety/depression/mood (8), psychosis/mania (8), hyperactivity (8), suicide (6), leisure activities/hobbies (6), self-esteem (5), material well-being/financial status (5), concentration/productivity (5), emotional control (5), autonomy (4), stress (4), somatization (4), family medical/mental health history (4), general risk-taking behavior (4), place in community (3), personality (2), spirituality/religion (2), developmental history (2), and presenting problem (2).

Article results
Acceptability to young people
To determine whether the instruments were acceptable to young people, completion rates and rates of disclosure were investigated. The systematic review of 105 studies reporting health risk behaviors by Brener et al found that self-administered questionnaires identified higher rates of risk behaviors than interviewer-administered questionnaires. Patients in the study by Silber and Rosenthal also indicated that it was initially easier to state their problems on paper using the Mile Square Questionnaire (MSQ) than to state them verbally to the health care provider.

Findings of differences in disclosure rates between online and paper versions of various instruments were mixed. In a pilot study of a computerized version of the SDQ, Truman et al found no differences in response rates between the paper and online versions; however, there was significantly better user satisfaction with the online version. The systematic review by Silber and Rosenthal found that computer-assisted self-administration questionnaires resulted in higher rates of reporting illegal drug use, suicidal behavior, and high-frequency sexual behaviors than paper versions. In contrast, Beebe et al found that risk behaviors were generally more likely to be reported using a paper version of the AHR than using an online version. However, this difference was only significant within the domains of alcohol quantity and substance use disorder. Higher scores were also found for a paper version of the Child Health Questionnaire Child Form (CHQ-CF) compared with an Internet version. These differences were statistically significant for the domains of general behavior, role functioning – physical, mental health and family activities. However, less data were missing when the Internet version of the CHQ-CF was utilized.

Disclosure and engagement
Disclosure and engagement were evaluated by identifying results focusing on each instrument’s ability to create
| Measure                                      | Reference(s)                   | Domains                                                                                                                                                                                                 | Context/location instrument tested | No. of items | Age     | Modality                                      | Administration time |
|---------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------|---------|----------------------------------------------|---------------------|
| Adolescent health review (AHR)              | Beebe et al.27                 | Lack of exercise, poor nutrition, unhealthy weight control, family interaction problems, problems at school, emotional distress, suicidal behavior, violent behavior, sexual activity, cigarette smoking, alcohol use, marijuana use, substance abuse/dependence, physical or sexual abuse | Multiple                          | 30           | 12+     | Self-Administered (computer)                 | 3–5 mins            |
|                                             | Harrison et al.42,43           |                                                                                                                                                                                                        |                                   |              |         |                                              |                     |
| Adolescent psychopathology scale           | Konold,44 Piersel45            | Clinical disorders, personality disorders, psychosocial problems, response style indicators                                                                                                          | –                                 | 346          | 12–19   | Self-Administered (pen and paper and computer scoring) | 45–60 mins          |
| Adquest                                    | Elliott et al.29               | Education/work, safety, health, sexuality, substance use/abuse, personal life/family life, other                                                                                                        | Youth specific mental health service | 80           | 10–21   | Self-Administered (pen and paper)            | 20 mins             |
|                                             | Giannone et al.46              |                                                                                                                                                                                                        |                                   |              |         |                                              |                     |
|                                             | Peake et al33                  |                                                                                                                                                                                                        |                                   |              |         |                                              |                     |
| Behavior assessment system for children, second edition (BASC-2) | Gladman and Lancaster,47 Merenda,48 Tan49 | Anxiety, attention problems, attitude to school, attitude to teachers, atypicality, depression, hyperactivity, interpersonal relations, locus of Control, relations with parents, self-esteem, self-reliance, sensation seeking, sense of inadequacy, social stress, somatization| Multiple                          | 176          | 12–21   | Self-Administered (pen and paper)            | 30 mins             |
|                                             |                                |                                                                                                                                                                                                        |                                   | 185          | 18–25   |                                              |                     |
| Brief life history inventory (BLHI)         | Mattei et al50                | General information, present problems, history, family life, education, miscellaneous                                                                                                                | Multiple                          | 72           | 12–18   | Self-Administered (pen and paper)            | 30–40 mins          |
| Child behavior checklist –Youth self-report (CBCL-YSR) | Achenbach and Ruffle51        | Anxious/depressed, withdrawn/depressed, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, aggressive behavior                                                                 | –                                 | 112          | 11–18   | Self-Administered (pen and paper and computer) | 10 mins             |
| Child health questionnaire –Child completed form (CHQ-CF87) | Houghton et al52 Landgraf and Abetz,53 Raat et al54 Waters et al54,55 | Physical functioning, role/social-physical, general health perceptions, bodily pain, role/social emotional, role/social behavior, self-esteem, mental health, family activities, family cohesion | Multiple                          | 87           | 5–18    | Self-Administered (pen and paper)            | 16–25 mins          |
| Comprehensive quality of life scale–School version (ComQol-S5) | Cummins et al56 Gullone and Cummins57 | Material well-being, health, productivity, intimacy, safety, place in community, emotional well-being                                                                                               | School                            | 44           | 12–18   | Self-Administered (pen and paper)            | 15–20 mins          |
| Guidelines for adolescent preventive services (GAPS) | Epner et al.30 Gadomski et al38 Klein et al31 | Medical history, family information, specific health issues, eating/weight/body, school, friends and family, weapons/violence, tobacco, drugs, development/relationships, emotions, special circumstances, self | General practice                   | 72           | 11–15   | Self-Administered (pen and paper)            | 15 mins             |
|                                             |                                |                                                                                                                                                                                                        |                                   | 61           | 16–21   |                                              |                     |
| Measure                                                      | Authors                                           | Description                                                                 | Administration | Time       | Notes                   |
|--------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------|----------------|------------|-------------------------|
| HEADSSS                                                      | Carr–Cregg and Manocha, Cohen et al, Goldenring and Cohen, Goldenring and Rosen, Jones et al, Parker et al, Sanci et al, Van Anstel et al, Yeo et al | Home and environment, education and employment, activities, drugs and alcohol, relationships and sexuality, suicide and depression, safety/conduct difficulties and risk taking, anxiety and eating, psychosis and mania | Multiple       | 12–25      | Interview              |
| Health and daily living form, second edition (HDL-2)         | Haynes, Kagee                                      | Individual functioning, stressful life circumstances, social network resources, help-seeking responses | –             | 12–18      | Self-Administered (pen and paper) interview | 30–45 mins |
| Hilson adolescent profile (HAP)                             | Calkins and Walker, Hess                          | Guardedness, alcohol, drugs, educational adjustment difficulties, law/society violations, frustration tolerance, antisocial/risk-taking attitudes, rigidity/obsessiveness, interpersonal/assertiveness difficulties, home life conflicts, social/sexual adjustment, health concerns, anxiety/phobic avoidance, depression/suicide potential, suspicious temperament, unusual responses | Multiple       | 310        | Self-Administered (pen and paper)           | 45 mins   |
| Instrument for monitoring adolescent health issues           | Stanton et al                                    | Tobacco use, alcohol use, other substance use, sun exposure, leisure, dietary habits, exercise and illness, sexual health, mental health, violence, safety, injury | Community      | 12–18      | Self-Administered (pen and paper)           | 35 mins   |
| Juvenile wellness and health survey (JWHS-76)                | Steiner et al                                    | General risk taking behavior, mental health problems, sex related risk, eating and dietary problems, general health problems | School         | 10–18      | Self-Administered (pen and paper)           | 50 mins   |
| Kidscreen                                                   | Rajnil et al, Ravens–Sieberer et al               | Physical well-being, psychological well-being, moods and emotions, self-perception, autonomy, parent relation and home life, financial resources, peers and social support, school environment, bullying | Community      | 8–18       | Self-Administered (pen and paper and computer) Interviews (over the phone or face-to-face) | 15–20 mins |
| Life experiences questionnaire (LEQ)                         | Newcomb et al                                    | Family/parents, accident/injury, sexuality, autonomy, deviance, relocation, distress | School         | 16–18      | Self-Administered (pen and paper)           | 15–20 mins |
| Life stressors and social resources inventory-youth form (LISRES-Y) | Crehan, Daniels and Moos, Oosterhof              | Physical health, school, home and money, parents, siblings, extended family, boyfriend/girlfriend, friends, social activities | Multiple       | 12–18      | Self-Administered (pen and paper)           | 30–90 mins |
| Mile square questionnaire (MSQ)                             | Silber and Rosenthal                             | Personal/family, school/work/friends, body/weight, somatic concerns/cancer, sexuality/birth control, drinking/drugs | ED/Hospital     | 10–25 years | Self-Administered (pen and paper)           | 5–30 mins |

(Continued)
| Measure | Reference(s) | Domains | Context/location | instrument tested | No. of items | Age | Modality | Administration time |
|---------|--------------|---------|------------------|-------------------|--------------|-----|----------|-------------------|
| Multidimensional adolescent assessment scale (MAAS) | Mathiesen et al⁵⁵ | Depression, self-esteem, mother problems, father problems, personal stress, friend problems, school problems, aggression, family problems, suicide, guilt, confused thinking, disturbing thoughts, memory loss, alcohol abuse, drug abuse | Community | 177 | 10–21 years | Self-Administered (Pen and paper) | 30–45 mins |
| Offer self-image questionnaire, revised (OSIQ) | Allen,⁷⁷ Furlong and Karna,⁷⁸ Jacob⁷⁷ | Impulse control, family functioning, emotional tone, self-confidence, body image, vocational attitudes, social functioning, ethical values, self-reliance, mental health, sexuality, idealism | Community | – | 13–18 | Self-Administered (Pen and paper or micro-computer disk) | 30 mins |
| Personal inventory | Grossman,⁷⁹ Ireton,⁸⁰ Randall⁸¹ | Well-Being, life concerns, emotional-mental status, life stress, personality, life satisfaction/desire for change | General practice | 37 | 16+ | Self-Administered (Pen and paper) | 10–15 mins |
| Personal problems checklist for adolescents (PPCA) | Martens,⁸² McCarthy,⁸³ Santmire⁸⁴ | Social and friends, appearance, attitudes and opinions, parents, family and Home, school, money, religion, emotions, dating and sex, health and habits, job, crises | Multiple | 240 | 5–12, 13–17, 18+ | Self-Administered (Pen and paper) | 10–20 mins |
| Personality inventory for youth (PIY) | Lachar and Gruber,⁸⁵ Marchant and Ridenour,⁸⁶ Wrobel et al⁸⁷ | Cognitive impairment, impulsivity/distractibility, delinquency, family dysfunction, reality distortion, somatic concern, psychological discomfort, social withdrawal, social skill deficits | Multiple | 270 | 9–19 | Self-Administered (Pen and paper) | 45 mins |
| Psychological/social history report | Mattei et al⁸⁸ | Presenting problem, family history, developmental history, education, financial status, employment history, medical history, marital/family status, diet/exercise, psychological/life stressors, religion, alcohol and drug history | Multiple | – | 17+ | Self-Administered (Computer) | 30–45 mins |
| Quality of life profile—adolescent version (QLP-A) | Bradford,⁸⁹ Raphael et al⁹⁰ | Physical being, psychological being, spiritual being, physical belonging, social belonging, community belonging, practical becoming, leisure becoming, growth becoming | School | 54 | 14–20 years | Self-Administered (Pen and paper) | 40 mins |
| Quickview social history (Quickview) | Dixon,⁹¹ Starr⁹² | Developmental history, family of origin, educational history, marital history, legal history, military history, symptom screen (Psychological and physical) | Multiple | 235 | 16+ | Self-Administered (Pen and paper or computer) | 30–45 mins |
a space for discussion of relevant domains between the health professional and young person. The introduction of a psychosocial assessment instrument was found to improve engagement between the young person and health professional, thereby improving the clinician’s understanding of the young users and their environment, in the studies by Beebe et al., Elliott et al., Epner et al., Klein et al., Parker et al., Peake et al., Silber and Rosenthal, Van Amstel et al., and Yi et al. Specifically, clinicians in the study by Elliott et al. stated that Adquest was able to: identify issues important to the adolescents, identify which domains the young person was ready to discuss right away – and which needed to be returned to at a later time, signal to the young person that it was okay to disclose information about relevant domains, and organize the young person’s thoughts and issues ahead of time by providing them with a format for self-reflection. Further, clinicians felt that the section titles and introductions were able to indicate the organization’s philosophy on domains, provide a “common language” for clinical assessment and discussion, and give permission for them to ask the young person difficult questions. Similar responses were provided by physicians using the MSQ, who stated that the instrument helped “break the ice”; provided a legitimate reason to ask young people about other issues that might be of concern to them; and indicated to young people that doctors were available to them to talk about emotional and psychosocial concerns, not just their presenting physical need.

Unfortunately, four studies found that clinicians ignored certain domains that were identified as issues for the young person. In the evaluation of GAPS, it was found that general practitioners (GPs) discussed all the identified risk behaviors with the young person in only 23% of cases. In 62% of cases, the GP discussed half or more of the identified risk behaviors, and in 15% of cases they discussed fewer than half of the identified risks. Epner et al. found that GPs were least likely to respond to behaviors regarding weapons and violence or depression and abuse. A follow-up with young participants in the study by Klein et al. found that adolescents reported receiving less counseling around their identified risks than the clinicians reported they had provided. Van Amstel et al. found that the inclusion of a HEADSSS stamp on emergency department patient records significantly increased documentation of the education, alcohol, and smoking domains, but that the domains of home environment, substance use/abuse, and sexual activity continued to be ignored by physicians. A retrospective review of 100 medical records and the HEADSSS assessment by Yeo et al. found only seven records showed that a complete screen had been conducted.
Table 2 Instrument psychometric properties.

| Measure                                                      | Construct | Content | Criterion          | Cronbach's alpha range | Test-retest range | Test-retest time frame |
|--------------------------------------------------------------|-----------|---------|--------------------|------------------------|-------------------|-----------------------|
| AHR                                                          | Unclear   | Yes     | Yes                | –                      | –                 | –                     |
| Adolescent psychopathology scale                             | Yes       | Yes     | Unclear            | >0.80                  | –                 | –                     |
| Adquest                                                      | Unclear   | Yes     | Unclear            | –                      | –                 | –                     |
| BASC-2                                                       | Yes       | Yes     | Yes                | Upper 0.60's-Upper 0.80's | Upper 0.70's-Lower 0.90's | 8–65 days             |
| BLHI                                                         | Unclear   | Unclear | Unclear            | –                      | –                 | –                     |
| CBCL-YSR                                                     | Unclear   | Yes     | Yes                | –                      | –                 | –                     |
| CHQ-CF87                                                     | Yes       | Yes     | Yes                | 0.69–0.92              | –                 | –                     |
| ComQol-S5                                                    | Yes       | Yes     | Unclear            | 0.75–0.83              | 0.40–0.88         | 1 week                |
| GAPS                                                         | Yes       | Yes     | Unclear            | –                      | –                 | –                     |
| HEADSSS                                                      | Unclear   | Yes     | Unclear            | –                      | –                 | –                     |
| HDL-2                                                        | Yes       | Yes     | Unclear            | 0.77–0.92              | –                 | –                     |
| HAP                                                          | Unclear   | Yes     | Yes                | 0.67–0.90              | 0.74–0.95         | 2–4 week              |
| Instrument for monitoring adolescent health issues          | Unclear   | Yes     | Unclear            | –                      | 0.21–0.99         | 2 weeks               |
| JWHS-76                                                      | Yes       | Yes     | Unclear            | 0.56–0.81              | –                 | –                     |
| Kidscreen                                                    | Yes       | Yes     | Yes                | 0.77–0.89              | 0.56–0.77         | 2 weeks               |
| LEQ                                                          | Unclear   | Unclear | Unclear            | 0.94–0.98              | –                 | –                     |
| LISRES-Y                                                     | Unclear   | Yes     | Yes                | 0.68–0.93              | 0.13–0.60         | 12–15 months          |
| MSQ                                                          | Unclear   | Yes     | Unclear            | –                      | –                 | –                     |
| MAAS                                                         | Yes       | Yes     | Unclear            | 0.74–0.97              | –                 | –                     |
| OSIQ                                                         | Unclear   | Yes     | Yes                | 0.45–0.90              | 0.63              | 2 years               |
| Personal inventory                                           | Unclear   | Unclear | Unclear            | 0.42–0.82              | 0.20–0.56         | 2 month               |
| PPCA                                                         | Unclear   | Yes     | Unclear            | –                      | –                 | –                     |
| PIY                                                          | Yes       | Yes     | Yes                | >0.70                  | 0.77–0.91         | –                     |
| Psychological/social history report                          | Unclear   | Unclear | Unclear            | –                      | –                 | –                     |
| QLP-A                                                        | Unclear   | Yes     | Unclear            | 0.65–0.94              | –                 | –                     |
| Quickview                                                    | Unclear   | Yes     | Unclear            | –                      | –                 | –                     |
| RAAPS                                                        | Yes       | Yes     | Unclear            | –                      | –                 | –                     |
| SDQ-2                                                        | Yes       | Yes     | Yes                | 0.75–0.90              | 0.72–0.88         | 7 weeks               |
| SPPI                                                         | Unclear   | Unclear | Yes                | 0.43–0.93              | 0.60              | 1–4 months            |
| SDQ                                                          | Yes       | Yes     | Yes                | 0.59–0.75              | 0.65–0.83         | –                     |
| YRRI                                                         | Unclear   | Yes     | Yes                | >0.80                  | –                 | –                     |

Predictive utility

Only the article by Jacob,37 which reviews the Offer Self-Image Questionnaire, Revised (OSIQ), was found to mention an instrument’s ability to predict future risks or psychosocial issues. The author refers to an earlier longitudinal study conducted by Offer and Offer in 1975, in which the OSIQ was shown to be able to identify “normal” adolescent males who were likely to develop minimal psychological problems in the future. No other articles presented information on the predictive utility of the psychosocial assessment instruments.

Discussion

This systematic review has highlighted the many psychosocial assessment instruments that are available to improve engagement between health care professionals and young people who present for health care within a generalist primary care or multidisciplinary context. Most of the instruments were appropriate for use with young people aged 12–20 years. The administration times averaged about half an hour, which is appropriate for many clinical visits, although may be too long in time-restricted general practices.38 The majority of instruments were designed to be initially self-administered using a pen on a paper questionnaire and then to have the answers discussed between the young person and health care professional. This format is likely to suit many contexts, as young people can complete the instrument prior to the appointment, leaving more time to discuss the relevant issues within the session. The contexts and locations in which the instruments had been used varied widely, although it was encouraging to see that half had been used in multiple environments, as it has been recommended that in the future multidisciplinary teams provide health and mental health care.39 In terms of psychometric properties, only about a third had documented validity and reliability. The domains covered...
by the instruments were varied, although the most common were social relations, education/work, mental health, physical health, emotional distress, harm or violence to self or others, and sexuality – all of which are immediately relevant to the majority of young people.

In terms of acceptability to young people, there is clear evidence for the use of an instrument that is initially self-administered over those delivered via an interview format. This is probably why over 93% of the identified instruments used this method of administration. In terms of whether self-administration should occur by pen-and-paper or computer-assisted formats, the evidence is varied. However, it should be noted that the articles examining the relationship between form of administration and disclosure rates are at least 5–6 years old – technology use has increased dramatically over this period, and young people are likely to be much more familiar and comfortable with computer-assisted formats. Thus, future studies should readdress this issue and extend their investigation into different computer-assisted formats, such as completing the form on a smartphone or tablet device, which are likely to be more private than completing the form on a large desktop computer as was used in the studies identified by this review.

This review provides some evidence that the use of a psychosocial instrument can improve engagement between health professionals and young people, mostly by giving health professionals a legitimate reason to ask difficult questions that otherwise may not have been raised. Unfortunately, much of the support for using psychosocial assessment instruments is derived from the anecdotal views of clinicians, whose jobs they make easier, not from the young people who have to respond to them or from empirical evidence. Additionally, it is very concerning that in four studies, all of which use different instruments, clinicians failed to discuss with the young person some of the most serious risks they had identified. Most concerning is that these studies took place in general practices and community health centers. While it is well recognized that GPs are often time poor, it is also known that for young people, a GP is often the first professional they turn to for help. Physicians need to respond to all the risks identified by the young person in a confidential and caring manner, as a negative past experience, such as telling a professional about an issue and not receiving an appropriate response, will significantly reduce the likelihood of a young person seeking future help. Therefore, if a health professional decides to use an assessment instrument, they must follow-up on any risks that it identifies, not just those they have time for or those they feel comfortable addressing.

Interestingly, there is a significant gap in the literature regarding the ability of psychosocial assessment instruments to predict future psychological disorders or risky behaviors, with only the study by Jacob mentioning the predictive ability of an instrument – the OSIQ. While it is likely that this evidence is lacking because none of the studies were longitudinal, it is also possible that health professionals are simply not providing long-term follow-up. Having an instrument that clinicians can use to identify possible future issues will reduce rates of morbidity and mortality only if preventative measures are implemented and follow-up is undertaken. Future studies should be prospective to determine whether the instrument has predictive ability and whether health professionals provide the necessary preventive supports.

Overall, the most appropriate instrument in terms of acceptability, engagement, and disclosure is one that is self-administered and then appropriately followed-up by the clinician. It should ask about domains that are relevant to all young people and prioritize those that are immediately relevant, such as social interaction, education and/or employment, mental health and emotional distress, harm to self or others, and sexuality. The currently available instruments that address these domains, are available in a self-administered format, and have been shown to increase engagement and disclosure include the AHR, Adquest, and GAPS. The AHR is the only instrument of these three that has also been tested in multiple contexts.

Limitations
While the thorough search strategy employed by this review identified a large number of psychosocial assessment instruments and evaluative papers for each, a systematic search of every published article for each of the instruments was not conducted. Therefore, it is possible that there is published evidence related to the psychometric properties of some of the instruments that has not been reported.

Conclusion
Psychosocial assessment instruments are essential tools for health care professionals working with young people because they improve detection of risks and engagement by helping clinicians to broach difficult issues. However, if a health professional decides to use a psychosocial instrument and the young person indicates a risky behavior or emotional concern, it is imperative that the health professional makes time to deal with it appropriately.

Self-administered instruments are most acceptable to young people, although it has not been determined whether
pen-and-paper or computer-assisted formats are preferred. Only one instrument has been shown to be useful in predicting any type of future risk.

Which tool is most appropriate for a clinician will depend on the domains they are most interested in, their preferred mode of delivery or available resources, available time frame, and whether they work in a multidisciplinary environment. The only tool which is currently available in a self-administered format, covers all domains relevant to most young people, has been tested in multiple contexts, and can be completed in a short period, is the AHR.

Future research should focus on conducting longitudinal studies to determine the predictive utility of these instruments. It would also be beneficial to determine whether there is any empirical evidence to support the anecdotal statements from clinicians concerning levels of engagement and whether young people themselves feel the instruments help them disclose and engage. Additionally, research should be conducted to determine the suitability for instruments such as the GAPS in multidisciplinary contexts, and to determine whether any of the instruments delivered currently by interview, such as the HEADSSS, could be transformed into a self-administered format to increase its acceptability to young people. Such research has the potential to provide clinicians with a wider choice of appropriate instruments to suit their individual and organizational needs.

Disclosure
The authors report no conflicts of interest in this work.

References
1. Spear LP. The adolescent brain and age-related behavioral manifestations. Neuroscience and Biobehavioral Reviews. 2000;24(4):417–463.
2. Minino AM. Mortality among teenagers aged 12–19 years: United States, 1999–2006. Hyattsville, MD: U.S Department of Health and Human Services: Centers for Disease Control and Prevention, National Center for Health Statistics. 2010: http://www.cdc.gov/nchs/data/databriefs/db37.pdf.
3. Mulye TP, Park MJ, Nelson CD, Adams SH, Irwin CE, Jr, Brindis CD. Trends in adolescent and young adult health in the United States. Journal of Adolescent Health. 2009;45(1):8–24.
4. Merikangas KR, He JP, Burstein M, et al. Lifetime prevalence of mental disorders in U.S. adolescents: results from the National Comorbidity Survey Replication–Adolescent Supplement (NCS-A). Journal of the American Academy of Child and Adolescent Psychiatry. 2010;49(10):980–989.
5. Goldenring JM, Cohen E. Getting into adolescent heads. Contemporary Pediatrics. 1988:75–79.
6. McGorry P, Parker A, Purcell R. Youth mental health services. InPsych. 2006;August 2006. http://www.psychology.org.au/publications/inspsych/youth_mental_health/.
7. Giedd JN, Blumenthal J, Jeffries NO, et al. Brain development during childhood and adolescence: a longitudinal MRI study. Nature Neuroscience. 1999;2(10):861.
8. Colrain IM, Baker FC. Changes in sleep as a function of adolescent development. Neuropsychology Review. 2011;21(1):5–21.
9. Singh SP, Evans N, Sireling L, Stuart H. Mind the gap: The interface between child and adult mental health services. Psychiatric Bulletin. 2005;29(8):292–294.
10. Singh SP. Transition of care from child to adult mental health services: the great divide. Current Opinion in Psychiatry. 2009;22(4):386–390.
11. McGorry P, Purcell R. Youth mental health reform and early intervention: Encouraging early signs. Early Intervention in Psychiatry. 2009;3(3):161–162.
12. McGorry P. Reforming youth mental health. Australian Family Physician. 2006;35(5):314–314.
13. AHRQ. The guide to clinical preventive services 2010–2011: Recommendations of the US preventive services task force. USA: Department of Health and Human Services. 2011.
14. RACP. Routine adolescent psychosocial health assessment–Position statement: Author. 2008.
15. Drake RE, Mueser KT, Brunette MF, McHugo GJ. A review of treatments for people with severe mental illnesses and co-occurring substance use disorders. Psychiatric Rehabilitation Journal. Spring 2004;27(4):360–374.
16. Booth ML, Bernard D, Quine S, et al. Access to health care among Australian adolescents young people’s perspectives and their sociodemographic distribution. Journal of Adolescent Health. 2004;34(1):97–103.
17. Moher D, Liberati A, Tetzlaff J, Altman DG, The PG. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. PLoS Med. 2009;6(7):e1000097.
18. Corcoran K, Fischer J. Measures for Clinical Practice: A Sourcebook. Vol 1. 2nd ed. New York, The Free Press; 1987.
19. Barker PJ. Assessment in psychiatric and mental health nursing: In search of the whole person. Cheltenham, UK: Stanley Thornes Publishers; 1997.
20. Tasker RC, McClure RJ, Acrerini CL, eds. Oxford handbook of paediatrics. Oxford: Oxford University Press; 2008.
21. Merrell KW. Behavioural, social, and emotional assessment of children and adolescents. 3rd ed. New York: Lawrence Erlbaum Associates; 2008.
22. Newmark CS. Major psychological assessment instruments. 2nd ed. Boston: Allyn and Bacon; 1996.
23. Kline P. The handbook of psychological testing. London: Routledge; 1993.
24. Brener ND, Billy JOG, Grady WR. Assessment of factors affecting the validity of self-reported health-risk behavior among adolescents: evidence from the scientific literature. Journal of Adolescent Health. 2003;33(6):436–457.
25. Silber TJ, Rosenthal JL. Usefulness of a review of systems questionnaire in the assessment of the hospitalized adolescent. Journal of Adolescent Health Care. 1986;7(1):49–52.
26. Truman J, Robinson K, Evans AL, et al. The Strengths and Difficulties Questionnaire: A pilot study of a new computer version of the self-report scale. European Child and Adolescent Psychiatry. 2003;12(1):9–14.
27. Beebe TJ, Harrison PA, Eunkyung P, McRae Jr JA, Evans J. The effects of data collection mode and disclosure on adolescent reporting of health behavior. Social Science Computer Review. Winter 2006. 2006;24(4):476–488.
28. Raat H, Mangunkusumo R, Landgraf J, Kloeck G, Brug J. Feasibility, reliability, and validity of adolescent health status measurement by the Child Health Questionnaire Child Form (CHQ-CF): internet administration compared with the standard paper version. Quality of Life Research. 2007;16(4):675–685.
29. Elliott J, Nembhard M, Giannone V, Surko M, Medeiros D, Peake K. Clinical Uses of an Adolescent Intake Questionnaire: A heud as a Bridge to Engagement. Social Work in Mental Health. 2004;3(1–2):83–102.
30. Epner J, Levenberg PB, Schoeny ME. Primary care providers' responsiveness to health-risk behaviors reported by adolescent patients. Archives Of Pediatrics and Adolescent Medicine. 1998; 152(8):774–780.

31. Klein JD, Allan MJ, Elster AB, et al. Improving adolescent preventive care in community health centers. Pediatrics. 2001;107(2):318.

32. Parker A, Hetrick S, Purcell R. Psychosocial assessment of young people: Refining and evaluating a young people friendly assessment interview. Australian Family Physician. 2010;39(8):585–588.

33. Peake K, Epstein I, Mirabito D, Surko M. Development and utilization of a practice-based, adolescent intake questionnaire (Adquest): Surveying which risks, worries, and concerns urban youth want to talk about. Social Work in Mental Health. 2004;3(1–2):55–82.

34. Van Amstel LL, Lafleur DL, Blake K. Raising our HEADSS: adolescent psychosocial documentation in the emergency department. Academic Emergency Medicine: Official Journal Of The Society For Academic Emergency Medicine. 2004;11(6):648–655.

35. Yi CH, Martyn K, Salerno J, Darling-Fisher CS. Development and clinical use of rapid assessment for adolescent preventive services (RAAPS) questionnaire in school-based health centers. Journal of Pediatric Healthcare. 2009 Jan–Feb;2009,23(1):2–9.

36. Yeo MSM, Bond LM, Sawayer SM. Health risk screening in adolescents: room for improvement in a tertiary patient setting. The Medical Journal Of Australia. 2005;183(8):427–429.

37. Jacob SE. 'Offer self-Image questionnaire, revised': Test review. Applied Psychological Measurement. 1997;21(5):373–379.

38. Konrad TR, Link CL, Shackelton RJ, et al. It's about time: physicians' perceptions of time constraints in primary care medical practice in three national healthcare systems. Medical Care. 2010;48(2):95–100.

39. Vreeland B. Bridging the gap between mental and physical health: A multidisciplinary approach. Journal of Clinical Psychiatry. 2007; 68(Suppl);26–33.

40. Chow P, Kang M, Sanci L, Newham V, Bennett DL. Adolescent health: Enhancing the skills of general practitioners in caring for young people from culturally diverse backgrounds, GP resource kit. Sydney: NSW Centre for the Advancement of Adolescent Health and Transcultural Mental Health Centre 2008.

41. Rickwood D, Deane FP, Wilson CJ, Ciarrochi J. Young people's help-seeking for mental health problems. Australian e-Journal for the Centre for the Advancement of Adolescent Health. 2005; 4(3):Supplement. www.auseumet.com/journal/vol4is3_supp/rickwood.pdf.

42. Harrison PA, Beebe TJ, Park E. The adolescent health review: A brief, multidimensional screening instrument. The Journal Of Adolescent Health: Official Publication Of The Society For Adolescent Medicine. 2001;29(2):131–139.

43. Harrison PA, Beebe TJ, Park E, Rancone J. The adolescent health review: Test of a computerized screening tool in school-based clinics. Journal of School Health. 2003;73(1):15–20.

44. Konold TR. [Review of the test Psychopathology Scale]. In The fourteenth mental measurements yearbook. 2001. Retrieved from http://ovidsp.tx.ovid.com.ezproxy1.canberra.edu.au/sp-3.5.1a/ovidweb.cgi?l=S&J=DCLFPKIDEDDPFCNPCKECFCBLNAAJAA00&Complete+Reference=S.sh.14%7c6%7c7c1.

45. Piersel WC. [Review of the test Adolescent Psychopathology Scale]. In The fourteenth mental measurements yearbook. 2001. Retrieved from http://ovidsp.tx.ovid.com.ezproxy1.canberra.edu.au/sp-3.5.1a/ovidweb.cgi?l=S&DCLFPKIDEDDPFCNPCKECFCBLNAAJAA00&Complete+Reference=S.sh.14%7c6%7c7c1.

46. Giannone V, Medeiros D, Elliott J, Perez C, Carlson E, Epstein I. Adolescents' self-reported risk factors and desire to talk about family and friends: implications for practice and research. Social Work in Mental Health. 2004;3(1/2):191–210.

47. Gladman M, Lancaster S. A review of the behaviour assessment system for children. School Psychology International. 2003;24(3):276.

48. Merenda PF. BASC: Behavior assessment system for children. Measurement and Evaluation in Counseling and Development. 1996; 28(4):229–232.

49. Tan CS. Test review behavior assessment system for children (2nd ed). Assessment For Effective Intervention. 2007;32(2):121–124.

50. Mattei MH, Killian GA, Dorfman W. Brief Life History Inventory. In: Keyser DJ, Sweetland RC, eds. Test critiques. Vol 10. Austin, TX: PRO-ED, Inc.; 1994:102–109.

51. Achenbach TM, Ruffle TM. The child behavior checklist and related scales for assessing behavioral/emotional problems and competencies. Pediatrics in Review. August 1, 2000. 2000;21(8):265–271.

52. Houghton F, Gleeson M, Kelleher K. The use of the Child Health Questionnaire (CHQ-CF87) in a rural Irish context. The Irish Journal of Psychology. 2003;24(1–2):35–45.

53. Landgraf JM, Abetz LN. Functional status and well-being of children representing three cultural groups: initial self-reports using the CHQ-CF87. Psychology and Health. 1997;12(6):839–854.

54. Waters E, Salmon LA, Wake M, Wright M, Hesketh KD. The health and well-being of adolescents: A school-based population study of the self-report Child Health Questionnaire. Journal of Adolescent Health. 2001;29(2):140–149.

55. Waters E, Wright M, Wake M, Landgraf J, Salmon L. Measuring the health and well-being of children and adolescents: a preliminary comparative evaluation of the Child Health Questionnaire in Australia... including commentary by Stein REK. Ambulatory Child Health. 1999;5(2):131–141.

56. Cummins RA, Mccabe MP, Romeo Y, Gullone E. Validity Studies the Comprehensive Quality of Life Scale (Comqol): Instrument Development and Psychometric Evaluation on College Staff and Students. Educational and Psychological Measurement. Summer 1994. 1994;54(2):372–382.

57. Gullone E, Cummins RA. The Comprehensive Quality of Life Scale: A psychometric evaluation with an adolescent sample. Behaviour Change. 1999;16(2):127–139.

58. Gadomski A, Bennett S, Young M, Wissow L.S. Guidelines for adolescent preventive services: the GAPS in practice. Archives Of Pediatrics and Adolescent Medicine. 2003;157(5):426–432.

59. Carr-Gregg M, Manocha R. Bullying–effects, prevalence and strategies for detection. Australian Family Physician. 2011;40(3):98–102.

60. Cohen E, Mackenzie RG, Yates GL. HEADSSs, a psychosocial risk assessment instrument: Implications for designing effective intervention programs for runaway youth. Journal of Adolescent Health. 1991;12(7):539–544.

61. Goldenring MJ, Rosen DS. Getting into adolescent heads: an essential update. Patient Care for the Nurse Practitioner. 2004:28p.

62. Jones S, Mertyn E, Alhucema P, Monagle P, Newall F. HEADSS assessment for adolescents requiring anticoagulation therapy. Archives Of Disease In Childhood. 2012;97(5):430–433.

63. Sanci L, Grabsch B, Chondros P, et al. The prevention access and risk taking in young people (PARTY) project protocol: a cluster randomised controlled trial of health risk screening and motivational interviewing for young people presenting to general practice and motivational interviewing for young people presenting to general practice. BMC Public Health. 2012;12(1):400.

64. Haynes SD. [Review of the test Health and Daily Living Form, Second Edition]. In The fifteenth mental measurements yearbook. 2003. Retrieved from http://ovidsp.tx.ovid.com.ezproxy1.canberra.edu.au/sp-3.5.1a/ovidweb.cgi?l=S&E=HFFIPLHFAADDPPNPCKEGCGIEB MAA00&Complete+Reference=S.sh.14%7c1%7c1.

65. Kage A. [Review of the test Health and Daily Living Form, Second Edition]. In The fifteenth mental measurements yearbook. 2003. Retrieved from http://ovidsp.tx.ovid.com.ezproxy1.canberra.edu.au/sp-3.5.1a/ovidweb.cgi?l=S&E=HFFIPLHFAADDPPNPCKEGCGIEB MAA00&Complete+Reference=S.sh.14%7c1%7c1.

66. Calkins DL, Walker CE. Hilson adolescent profile. In: Keyser DJ, Sweetland RC, eds. Test critiques. Vol 10. Austin, TX: PRO-ED, Inc.; 1994:102–109.

67. Hass A. [Review of the test Hilson Adolescent Profile]. In The fourteenth mental measurements yearbook. 2001. Retrieved from http://ovidsp.tx.ovid.com.ezproxy1.canberra.edu.au/sp-3.5.1a/ovidweb.cgi?l=S&E=HFFIPLHFAADDPPNPCKEGCGIEB MAA00&Complete+Reference=S.sh.31%7c1%7c1.
68. Stanton WR, Willis M, Balanda KP. Development of an instrument for monitoring adolescent health issues. Health Education Research. 2000;15(2):181–190.

69. Steiner H, Pavek S, Pitts T, McQuivey R. The Juvenile Wellness and Health Survey (JWHS-76): A School Based Screening Instrument for General and Mental Health in High School Students. Child Psychiatry and Human Development. Winter 1998. 1998;29(2):141–155.

70. Rajmil L, Alonso I, Berra S, et al. Use of a children questionnaire of health-related quality of life (KIDSCREEN) as a measure of needs for health care services. Journal of Adolescent Health. 2006;38(5):511–518.

71. Ravens-Sieberer U, Gosch A, Rajmil L, et al. The KIDSCREEN-52 quality of life measure for children and adolescents: Psychometric results from a cross-cultural survey in 13 European countries. Value in Health (Wiley-Blackwell). 2008;11(4):645–658.

72. Newcomb MD, Huba GJ, Betler DM. A multidimensional assessment of stressful life events among adolescents: Derivation and correlates. Journal of Health and Social Behavior. 1981;22(4):400–415.

73. Crehan KD. [Review of the test Life Stressors and Social Resources Inventory-Youth Form]. In The thirteenth mental measurements yearbook. 1992. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb.cgi?&S=EH$FFPLPLHADDFFNPNCPKEGCIEBMA00&Complete+Reference=S.sh.33%7c1%7cT.1

74. Daniels D, Moos RH. Assessing life stressors and social resources among adolescents: Applications to depressed youth. Journal of Adolescent Research. 1990;5(3):268–289.

75. Oosterhof A. [Review of the test Life Stressors and Social Resources Inventory-Youth Form]. In The thirteenth mental measurements yearbook. 1992. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb.cgi?&S=EH$FFPLPLHADDFFNPNCPKEGCIEBMA00&Complete+Reference=S.sh.33%7c1%7cT.1

76. Mathisen SG, Cash SJ, Hudson WW. The multidimensional adolescent assessment scale: A validation study. Research on Social Work Practice. 2002;12(1):9–28.

77. Allen SJ. [Review of the test Offer Self-Image Questionnaire, Revised]. In The twelfth mental measurements yearbook. 1995. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb.cgi?&S=HCNGFPKKOFDDPCNPCKAHBFGBDOEA00&Complete+Reference=S.sh.14%7c1%7cT.1

78. Furlong MJ, Kano M. [Review of the test Offer Self-Image Questionnaire, Revised]. In The twelfth mental measurements yearbook. 1995. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb.cgi?&S=HCNGFPKKOFDDPCNPCKAHBFGBDOEA00&Complete+Reference=S.sh.14%7c1%7cT.1

79. Grossman FM. [Review of the test a Personal Inventory]. In The ninth mental measurements yearbook. 1985. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb.cgi?&S=HBNPFPEIDDFPKGKNCNPKHOBCTBFAA00&Complete+Reference=S.sh.14%7c1%7cT.1

80. Ieront H. A personal inventory. Journal of Family Practice. 1980;11(1):137–140.

81. Randall J. [Review of the test A Personal Inventory]. In The ninth mental measurements yearbook. 1985. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb.cgi?&S=HBNPFPEIDDFPKGKNCNPKHOBCTBFAA00&Complete+Reference=S.sh.14%7c1%7cT.1

82. Martens B. [Review of the test Personal Problems Checklist for Adolescents]. In The tenth mental measurements yearbook. 1989. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb.cgi?&S=ACKHPDPOEDDEPEKNCPKIELBPKIGAA00&Complete+Reference=S.sh.31%7c1%7cT.1

83. McCarthy P. Personal problems checklist for adolescents. In: Keyser DJ, Sweetland RC, eds. Test critiques. Vol 10. Austin, TX: PRO-ED, Inc.; 1994:531–536.

84. Santmire TE. [Review of the test Personal Problems Checklist for Adolescents]. In The tenth mental measurements yearbook. 1989. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb.cgi?&S=ACKHPDPOEDDEPEKNCPKIELBPKIGAA00&Complete+Reference=S.sh.31%7c1%7cT.1

85. Lachar D, Gruber CP. Development of the personality inventory for youth: A self-report companion to the personality inventory for children. Journal of Personality Assessment. 1993;61(1):81–98.

86. Marchant GI, Ridenour A. [Review of the test Personality Inventory for Youth]. In The thirteenth mental measurements yearbook. 1998. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb.cgi?&S=ACKHPDPOEDDEPKCPKIELBPKGAA00&Complete+Reference=S.sh.14%7c6%7cT.1

87. Wrobel TA, Lachar D, Wrobel NH, Morgan ST, Gruber CP, Neher IA. Performance of the personality inventory for youth validity scales. Assessment. 1999;6(4):367–379.

88. Mattei MI, Killian M, Dorfman W. Psychological/sociocultural history report. In: Keyser DJ, Sweetland RC, eds. Test critiques. Vol 10. Austin, TX: PRO-ED, Inc.; 1994:553–561.

89. Bradford R, Rutherford DL, John A. Quality of life in young people: ratings and factor structure of the Quality of Life Profile-Adolescent Version. Journal of Adolescence. 2002;25(3):261–274.

90. Raphael D, Rukholm E, Brown I, Hill-Bailey P. The quality of life profile—adolescent version: Background, description, and initial validation. Journal of Adolescent Health. 1996;19(5):366–375.

91. Dixon D. [Review of the test Quickview Social History]. In The thirteenth mental measurements yearbook. 1998. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb.cgi?&S=ACKHPDPOEDDEPKCPKIELBPKIGAA00&Complete+Reference=S.sh.35%7c1%7cT.1

92. Starr ER. [Review of the test Quickview Social History]. In The thirteenth mental measurements yearbook. 1998. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb.cgi?&S=ACKHPDPOEDDEPKCPKIELBPKIGAA00&Complete+Reference=S.sh.35%7c1%7cT.1

93. Salerno J, Marshall VD, Picken EB. Validity and reliability of the rapid assessment for adolescent preventive services adolescent health risk assessment. Journal of Adolescent Health. 2012;50(6):595–599.

94. Atlas J. [Review of the test Self-Description Questionnaire-I, II, III]. In The thirteenth mental measurements yearbook. 1998. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb/cgi?&S=OHBPFPJOLDDDEPHNCNPKIELBLCBGLHA00&Complete+Reference=S.sh.30%7c6%7cT.1

95. Boyle GJ. Self-description questionnaire 2. In: Keyser DJ, Sweetland RC, eds. Test critiques. Vol 10. Austin, TX: PRO-ED, Inc.; 1994:632–643.

96. Gable R. [Review of the test Self-Description Questionnaire-I, II, III]. In The thirteenth mental measurements yearbook. 1998. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb.cgi?&S=OHBPFPJOLDDDEPHNCNPKIELBLCBGLHA00&Complete+Reference=S.sh.30%7c6%7cT.1

97. Isonio S. [Review of the test Self-Description Questionnaire-I, II, III]. In The thirteenth mental measurements yearbook. 1998. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb/cgi?&S=OHBPFPJOLDDDEPHNCNPKIELBLCBGLHA00&Complete+Reference=S.sh.30%7c6%7cT.1

98. Lennings C1, Lawler JR. Self concept: A study of marsh’s self description questionnaire (SDQ-2). Social Behavior and Personality. 1992;20(4):243–245.

99. Marsh HW, Parker J, Barnes J. Multidimensional adolescent self-concepts: Their relationship to age, sex, and academic measures. American Educational Research Journal. 1985;22(3):422–444.

100. Piersel WC. [Review of the test Structured Pediatric Psychosocial Interview]. In The tenth mental measurements yearbook. 1989. Retrieved from http://ovidsp.tx.ovid.com.proxy1.canberra.edu.au/sp-3.5.1/ovidweb/cgi?&S=OHBPFPJOLDDDEPHNCNPKIELBLCBGLHA00&Complete+Reference=S.sh.30%7c6%7cT.1

101. Webb TE, Very KD, Krill CE. Childhood hemophilia: A measure of a self-reported psychosocial distress. The Journal of Genetic Psychology: Research and Theory on Human Development. 1985;146(2):281–282.
102. Weinberg RA. [Review of the test Structured Pediatric Psychosocial Interview]. In The tenth mental measurements yearbook. 1989. Retrieved from http://ovidsp.tx.ovid.com.ezproxy1.canberra.edu.au/sp-3.5.1a/ovidweb.cgi?&S=O0HBFPJJO1LDEPHNCPKJBLBGHLAA00&Complete+Reference=S.sh.32%7c1%7c1.

103. Goodman R, Meltzer H, Bailey V. The strengths and difficulties questionnaire: A pilot study on the validation of the self-report version. European Child and Adolescent Psychiatry. 1998;7(3):125–130.

104. Mello D. Normative data for the Strengths and Difficulties Questionnaire in Australia. Australian Psychologist. 2005;40(3):215–222.

105. Percy A, McCrystal P, Higgins K. Confirmatory factor analysis of the adolescent self-report strengths and difficulties questionnaire. European Journal of Psychological Assessment. 2008;24(1):43–48.

106. Ruchkin V, Jones S, Vermeiren R, Schwab-Stone M. The strengths and difficulties questionnaire: The self-report version in American urban and suburban youth. Psychological Assessment. 2008;20(2):175–182.

107. Cosden M. [Review of the test Youth Risk and Resilience Inventory]. In The seventeenth mental measurements yearbook. 2007. Retrieved from http://ovidsp.tx.ovid.com.ezproxy1.canberra.edu.au/sp-3.5.1a/ovidweb.cgi?&S=LCNIFPAJCDEPHNCPKAEFBBPLA00&Complete+Reference=S.sh.14%7c1%7c1.

108. Konald TR. [Review of the test Youth Risk and Resilience Inventory]. In The seventeenth mental measurements yearbook. 2007. Retrieved from http://ovidsp.tx.ovid.com.ezproxy1.canberra.edu.au/sp-3.5.1a/ovidweb.cgi?&S=LCNIFPAJCDEPHNCPKAEFBBPLAA00&Complete+Reference=S.sh.14%7c1%7c1.