Screening for behavioral health problems in primary care

Carol C. Weitzman and John M. Leventhal

Purpose of review

The epidemiology of behavioral health disorders in children and the current literature on the identification of these problems within primary care are reviewed. Suggestions are offered on how to implement screening within primary care settings.

Recent findings

The prevalence of behavioral health problems in children is approximately 12–27% yet the detection of these problems within the primary care setting is much lower. Although identification may be improving, underidentification and limited referral for services remain a significant problem. Few physicians use standardized instruments or DSM-IV criteria to identify children. Families, in addition, often do not disclose behavioral health concerns about their child to their physician. Multiple barriers exist for successful screening, including lack of training, limited time and poor reimbursement. Recent evidence suggests that a number of well validated instruments are now available for behavioral health screening within primary care.

Summary

Pediatric settings hold the potential to be an optimal environment to address behavioral health concerns due to the frequent contact and trusted relationship many families have with their pediatrician. There is new evidence that screening can be thoughtfully implemented and that system change around the detection of behavioral health problems is possible.

Keywords

behavioral health, mental health, primary care, screening

Curr Opin Pediatr 18:641–648. © 2006 Lippincott Williams & Wilkins.

Yale University School of Medicine, Department of Pediatrics, Connecticut, USA

Correspondence to Carol Cohen Weitzman, MD, Yale University School of Medicine, Department of Pediatrics, 333 Cedar St, New Haven, CT 06520, USA
Tel: +1 203 688 4548; fax: +1 203 785 3932; e-mail: carol.weitzman@yale.edu

Current Opinion in Pediatrics 2006, 18:641–648

Abbreviations

ADHD attention-deficit/hyperactivity disorder
GSMS Great Smoky Mountains Study

1040-8703

Introduction

The high prevalence of behavioral health disorders in children of all ages and the lack of recognition and treatment of these disorders have forced the medical profession to examine this disparity and to identify new approaches to meet children's mental health needs more fully. Furthermore, the lack of available mental health services for children in this country has placed increasing pressure on pediatricians to recognize and treat children with a range of behavioral health disturbances. Conceptually, pediatric settings are an optimal environment to detect and address behavioral health concerns and disorders because up to 50% of all pediatric office visits address some behavioral, psychosocial, and/or educational concerns [1], and approximately 75% of children with psychiatric problems are seen within primary care settings [2].

The epidemiology of behavioral health disorders in children and the current literature on the identification of behavioral health problems within primary care settings are here reviewed. In addition, we discuss the strategies and tools for screening children for behavioral health disorders, while accounting for some of the challenges and barriers that currently exist.

Epidemiology

The prevalence of psychopathology in children and adolescents is approximately 12–27% [1,2,3••,4,5]. These prevalence rates vary depending on the population examined; for example, higher rates of behavioral health disorders have been identified in disadvantaged populations. In a recent report by Costello *et al.* [6••,7] that examined a large, longitudinal cohort of children between ages 9 and 16 (Great Smoky Mountains Study – GSMS), the 3-month prevalence for any behavioral health disturbance was 13.3%, and 6.8% of these cases represented a serious emotional disturbance. Cumulative prevalence revealed that by age 16 years, fully 36.7% of children had met DSM-IV criteria for one or more disorders. Boys had a greater likelihood of having a disorder, and this was primarily attributed to a higher prevalence of both conduct disorders and attention-deficit/hyperactivity disorder (ADHD). Girls had significantly higher rates of depression and anxiety disorders.

In the GSMS, when the prevalence rates for behavioral health disorders were examined by age, there appeared to be two different ages of expression of behavioral health disorders. During each age group, different behavioral health problems predominated. The highest prevalence

for any behavioral health disturbance was in 9–10-year olds and the lowest prevalence was found in 12-year olds. As the prevalence of early childhood disorders decreased, rates of adolescent behavioral problems began to rise after age 12. Early childhood disturbances included diagnoses such as ADHD, separation anxiety disorder, oppositional defiant disorder, enuresis, and encopresis. Adolescent behavioral health issues included depression, social phobia, substance use disorders, and generalized anxiety disorders. Conduct disorders tended to be expressed first in the earlier age group, with 75% having symptoms before age 10 and 89% before age 13. Early-onset behavioral health disorders tended to be more male-predominant, while the adolescent disorders tended to have a greater representation of females.

Overall, the prevalence rates for childhood-onset behavioral health disorders have been estimated to be as follows: ADHD (9% for boys, 3% for girls depending on the diagnostic criteria used), anxiety disorders (9%), depression (2% for school-aged children, 5% for young adolescents and 8% for older adolescents), and conduct disorder (6–16% for boys and 2–9% for girls depending on the population examined and the criteria used) [1,6••,8]. Results from more recent studies suggest that these values may be inflated and accurate population estimates may be lower than previously reported in cross-sectional studies [6••].

Comorbidity is an important issue to consider when examining the prevalence of behavioral health disorders. In the GSMS report, 25.5% of children with a diagnosis had two or more diagnoses. The strong association between ADHD and Oppositional Defiant Disorder and between Anxiety and Depression primarily accounted for these rates. These high rates of comorbidity and the associations between specific diagnoses have been confirmed in multiple studies [1,8] and have important implications for screening and identification of behavioral health disorders.

Preschoolers represent another important group where there is growing awareness of significant behavioral health issues. Prevalence rates of behavioral health problems have been estimated to range from 7 to 24% [9]. Diagnostic categories reflect a developmental continuum and, in addition to behavioral health disorders noted earlier, include other diagnoses such as relational disturbances (e.g. parent–child difficulties and attachment problems) and regulatory problems, such as eating and sleeping disturbances.

Identification of behavioral health disorders within pediatric practices

Multiple studies have demonstrated that pediatricians significantly underidentify children with behavioral health disorders [1,2,4,10–12]. In contrast to the epidemiological prevalence rates for behavioral health disorders in children, pediatric providers have been reported to identify approximately 4–17% of children with such disturbances [3••,10]. Studies have indicated that 55–82% of parents who reported problematic behaviors or concerns about their child's behavior as part of a research protocol did not discuss these concerns with their pediatric provider [1,4,12,13]. Detection rates were lowest when the physician used no standardized screening instrument to aid in the identification of children with behavioral health problems [14]. Pediatricians tend to use DSM-IV criteria and standardized measures most often when screening for ADHD [15,16•], but overall, physicians used DSM criteria or standardized tools in only 23% of visits where psychosocial problems were recognized. Not surprisingly, physicians' ability to detect child behavior health problems increased substantially when parents reported concerns to the clinician during the visit [12].

Recent studies from the Netherlands, though, contrast with some of these findings and report that physicians do detect psychosocial problems in 25% of school-aged children presenting for pediatric visits [11]. Physicians in this study, however, seem to have detected different problems from those reported by parents when they completed the Child Behavior Checklist (CBCL) about their children's behaviors. For example, pediatric providers failed to detect psychosocial problems in 71% of toddlers and 43% of school-aged children who were in the clinical range on the CBCL as reported by parents [10,11].

Additional evidence for improved detection comes from a recent comparison of data collected in 1979 and 1996. These data suggest that, since 1979, there has been a trend towards increased identification of children with behavioral health problems. Clinicians substantially increased the detection of behavioral health problems during pediatric visits from 6.8% in 1979 to 18.7% in 1996. The detection of attentional problems showed the greatest increase [5]; this increase is probably because physicians report high levels of comfort in making the diagnosis of ADHD [2]. In contrast to the increased detection of ADHD, the identification of children with mood/anxiety disorders is low even when physicians identify high rates of psychosocial problems [17]. Limited recent literature suggests that pediatricians are developing increased comfort levels in making the diagnosis of anxiety and depression and that they have more confidence in the psychopharmacologic management of these conditions [2]. This literature, however, reflects practice patterns in a narrow geographical region and may not reflect national trends.

Table 1 Barriers to screening

Barriers to screening
Limited training of physicians
Limited time
Poor reimbursement
Lack of disclosure by parent
Reluctance to label children by pediatrician
Limited access to mental health services
Limited knowledge of community resources
Lack of office strategies to integrate screening into well child visits

Importance of early detection of behavioral health problems in children

In addition to the importance of identifying children with behavioral health problems so they can receive appropriate interventions, there is also mounting evidence that early identification and treatment of clinical and subclinical behavioral health problems may avert the unfolding of significant mental health problems in adulthood. For example, chronic low-grade dysthymia in childhood has been recognized as a 'gateway disorder' to major depression or bipolar disorder later in life [1]. There is also clear evidence that some adult mental health problems begin in childhood. For example, a cohort of children who have been followed since birth in New Zealand has begun to show that in individuals with a psychiatric diagnosis at age 26, three-quarters had a diagnosis by age 18 and one-half had one by age 15 [6••,18].

Barriers to screening

A number of barriers (Table 1) to successful screening of children for behavioral health disturbances within pediatric practice have been identified [3••,9,19]. In one study, pediatricians surveyed reported that they had a lack of training in behavioral health problems during residency, and when asked in which areas of behavioral health they received the best training, 57% reported none [2]. Most physicians who reported none, however, had been in practice for more than 5 years, while more recent graduates reported higher levels of training in behavioral health disorders, with the greatest emphasis on ADHD. Physicians felt least prepared to manage depression and anxiety, and this correlates with lower rates of detection for these problems. Physicians' reluctance to diagnose children was due to diagnostic uncertainty, concern about comorbid conditions and hesitation to make a diagnosis that they believed parents were not ready to accept. In a small survey of physicians, although the vast majority felt prepared to discuss psychosocial issues with parents, only 14% felt they had enough time to do this, and 100% felt they were not adequately reimbursed for these efforts [20].

There is a recent report from the Assuring Better Child Health and Development Project (ABCD) in North Carolina describing their experience in successfully implementing statewide developmental and behavioral screening [21••]. Table 2 describes 'pearls' based on their experience. One of their key reasons for success was utilizing a PDSA cycle (plan, do, study, act) to assess the implementation of initiatives and make modifications where they were needed. For a practice to implement successful screening procedures, there will be 'front-end' work, but the fruits of this investment in time can be greater efficiency during visits, greater parent and physician satisfaction, stronger community partnerships and improved detection of children with behavioral health problems.

Choosing standardized screening measures

When considering implementing a screening strategy, a number of issues need to be addressed by the clinician and the practice to ensure success. In a recent report discussing screening for behavioral and developmental problems in young children, Bergman described a 10-point checklist that has been modified for this paper and that can be used to select and critique screening tools (Table 3) [19]. It is important for pediatricians to keep in mind the distinction between a screening measure, whereby a large number of asymptomatic individuals are tested for a particular problem, and an assessment measure that is designed to help practitioners determine with greater certainty the degree of impairment, the nature of the condition and whether the child identified in a screen could benefit from an intervention [19].

Table 2 Screening implementation 'pearls'

Screening implementation 'pearls'
Identify a physician champion who will maintain this initiative as a priority
Map practice workflow to determine who will be responsible for each task and when
Train all office staff who will have any involvement with the screening
Identify community partners (mental health and early intervention providers, agencies that provide family support) and establish logistics of communication and referral
Identify and obtain existing educational materials (handouts, existing curricula, on-line presentations for families and physicians, posters) and available CME programs (on-line, chapter AAP, and national Developmental-Behavioral Pediatrics review course)
Before beginning screening, consult with parents and obtain their feedback at regular intervals
Plan at the onset for regular staff meetings to review progress and identify challenges
Pilot screening before practice-wide implementation
Collect data on the number of completed and uncompleted screens and use information to troubleshoot and improve workflow
Consider creating an office resource guide that includes community support information and how-tos for implementation of screening

Table 3 Screening checklist questions

Screening checklist questions
What is the focus of the screen? (broad compared with problem-focused)
How does it measure what it says it measures? (types of questions, strength-based or deficit-based)
Who will administer the screening measure and what does it take to administer the screen? (Does the parent complete the measure in the waiting room; what is required of office staff time?)
Who provides the information for the screen? (parent report, child report, direct observation)
Who scores the screen and how complex is the screening methodology? (office staff compared with physician scoring, requires computer to score or by hand)
What is the age range of children who can be screened with this instrument?
How long does it take to administer the screen?
What does it cost to administer this screen? (Can the measure be photocopied or is it copyright-protected?)
What are the psychometrics of the screen?
Is the screen culturally relevant to the population that will be screened? (normative population)
What is the literacy level required for parents to complete the screen?

This table has been adapted from Bergman D. Screening for Behavioral Developmental Problems: Issues, Obstacles, and Opportunities for Change. National Academy for State Health Policy; 2004. pp. 1–20.

Simonian advocates using a two-tiered approach to the identification of children: the first level would be a broad, brief and cost-effective measure to screen and, if the screen is positive, it would be followed by a more comprehensive, diagnostic evaluation [3••]. Clinicians need to establish what their goals are for screening, and these goals will then guide which screening measures are most appropriate for their practice.

Psychometric considerations

When choosing instruments for use as part of a screening program, it is important to consider the psychometric properties of the instrument and to use screens only as they were designed. The inappropriate uses of behavioral health measures can lead to high misclassification rates [22]. Important constructs to consider when selecting an appropriate screen include the following.

(1) Reliability: Is the test consistent between different assessors and over time?
(2) Validity: Does the test truly capture the domain or construct that it purports to measure? Does it predict an important subsequent outcome? Has it been tested on children similar to children in the pediatric practice where it will be administered?
(3) Sensitivity: This represents the ability of the screening measure to identify accurately children who truly have the problem.
(4) Specificity: This represents the ability of the screening measure to identify accurately children without the problem.
(5) Positive Predictive Accuracy: This represents the likelihood that a child with a positive screen will truly have the behavioral problem.

Screening tools

Table 4 lists screening measures to consider for broad screening purposes within a pediatric primary care setting. This table is not meant to be an exhaustive list, and only a sample of well known or high-quality broad-band measures that might be useful for screening a nonreferred, nonidentified population of children is included. A pediatrician, however, may choose to screen specific children with particular concerns at particular ages rather than screening all children. Many other measures exist to evaluate children for particular behavioral health problems, such as ADHD, anxiety disorders, depression, autism, phobias, etc. For example, the Vanderbilt Assessment Scales have been developed to screen for ADHD within a primary care setting and are available on the American Academy of Pediatrics website. Pediatricians may also choose to screen children with environmental risk factors for behavioral health problems rather than screening all children in a practice.

There is good evidence that identifying emotional health problems of parents and family stressors that may impact on a child's behavior and development can be done within pediatric settings using screening measures [23–25]. Some of these psychosocial screening measures are included in Table 3.

Enhancing the utility of screening measures

Although using standardized screening tools is a potentially efficient and effective way to detect behavioral health disorders, it is not a substitute for obtaining a careful history, engaging parents in a dialogue, assessing symptom severity and functional impairment, and identifying risk factors that may place children at risk of behavioral health problems. These risk factors include poverty, the presence of parental mental health problems, the absence of family cohesion, lack of social support, marital discord, etc. [3••,4,5,9,26]. Physicians have not always incorporated the presence of these risk factors into an algorithm to identify behavioral health problems [1,5]. Lastly, it cannot be overemphasized that a trusting, empathic relationship with a pediatrician will enhance parents' comfort in disclosing concerns about their child and even about their own behavioral health [27].

Table 4 Screening instruments

Screening instrument	Domains covered	Respondent	Age range	No. of items/time to complete	Strengths and weaknesses	Utility in pediatric primary care setting	Website (free download or ordering information)
Parent-completed measures of child behavior problems							
Pediatric Symptom Checklist (PSC) [29]	Behavioral/emotional	Parent	4–16 years	35 items/ 5–10 min	Has been well studied with good psychometrics	Designed for use in pediatric setting. Shorter versions being developed. Cut-off scores have varied based on population being assessed [14,30,31]	http://www.mgh.harvard.edu/allpsych/PediatricSymptomChecklist/psc_general.htm or http://www.brightfutures.org/mentalhealth/pdf/tools.html
Parent Evaluation of Developmental Status (PEDS) [32]	General developmental/ behavioral	Parent	Birth to 8 years	10 items/ 10 min	Good psychometrics	Well suited for pediatric settings. Designed to elicit parent concerns and observations	www.pedstest.com
Behavior Assessment System for Children – Second Edition (BASC-2) [33]	Behavioral	Parent (teacher and child forms available). Can be used individually or in combination	2 to 21 years	126 items/ 10–20 min	Good internal consistency and test-retest reliability. Second edition now available	May be too time consuming and complex for mass screening but may have a role in obtaining strong multidimensional assessment	http://ags.pearsonassessments.com/
Child Behavior Checklist – Revised (CBCL) [34]	Behavioral/emotional/ developmental	Parent	$1^{1}/_{2}$–5 years	99 items/ 20 min	Extensively studied instrument. Now contains Language Development Survey	May be too time consuming for most practices	http://www.aseba.org/products/cbcl1-5.html
Child Behavior Checklist (CBCL) [35]	Behavioral/ emotional/social	Parent	6–18 years	138 items/ 20 min	Long considered the 'gold standard'. Yields a total behavior problem score and T-scores	May be too time consuming for most practices. Scoring can be done on computer but can take 10 min	http://www.aseba.org/products/cbcl6-18.html
Brief Infant-Toddler Social and Emotional Assessment (BITSEA) [36]	Behavioral	Parent	1–3 years	42 items/ 10 min	Yields a Problem and Competence Total Score	Nicely suited for primary care settings	http://harcourtassessment.com/
Preschool Feelings Checklist [37]	Behavioral/ emotional	Parent	3–5.6	20 items/ 2–4 min	Strong focus on depressive symptoms. Needs more validation studies	Easy to administer and score	

(*continued overleaf*)

Table 4 (*continued*)

Screening instrument	Domains covered	Respondent	Age range	No. of items/time to complete	Strengths and weaknesses	Utility in pediatric primary care setting	Website (free download or ordering information)
Eyeberg Child Behavior Inventory (CBI) [38]	Behavioral	Parent	2–16 years	36 items/ 5 min	Sensitivity is 80%, specificity 86%, not available in Spanish	Primarily designed to assess disruptive behaviors and conduct problems. Normed on a broad range of children. Easy to administer and score	www.parinc.com
Ages and Stages: Social-Emotional (ASQ:SE) [39]	Behavioral	Parent	6–60 months	10–15 min	Can be photocopied. Can be used alone or with ASQ	Questionnaires correspond with timing of pediatric visits	www.agesandstages.com
Toddler Behavior Screening Inventory [40]	Behavioral	Parent	12–41 months	40 items/ 10 min	Adequate psychometrics	Specifically designed for physicians to use in well child visits. Normed on a middle class sample	
			Family Psychosocial Screens				
Family Psychosocial Screening [41]	Family psychosocial risk factors	Parent	N/A	15 min	Sensitivity and specificity reported to be greater than 90%	Can be used as an intake form	http://www.pedstest.com/files/fampsych.pdf
Edinburgh Postnatal Depression Scale [42]	Postpartum depression	Parent	N/A	10 items/ 5 min	Can be downloaded for free. High sensitivity and specificity. Validated in many cultures	Easy to complete and brief	http://dbpeds.org/articles/detail.cfm?TextID=485
Parenting Stress Index–short form [43]	Global measure of parent stress, with subscales for parent–child dysfunction	Parent	1 month–12 years	36 items	Very widely used and well validated across cultures	Well suited for use in primary care	http://www3.parinc.com/

Follow-up after screening

Unfortunately, children who have positive screens for behavioral health problems do not always get adequate follow-up. In one study, only 16% of children who screened positive for a behavioral health problem were given a referral for follow-up [19]. In addition, only approximately a half to two-thirds of children who receive a referral from a pediatrician for mental health services actually see a mental health specialist, and only 30% of those children saw the mental health specialist more than once [3••,19]. These data suggest that administering a screening measure is not the end point in detecting behavioral health disorders but, in fact, the beginning of a process to identify such children, to connect them successfully with appropriate assessment and treatment and to monitor and support the child and family over time.

Conclusion

Data suggest that pediatricians have consistently underdiagnosed behavioral health problems in children and that routine, systematic screening does not occur in most pediatric practices. Many barriers exist to implementing effective screening in pediatric practices. There are, however, a number of well validated and reliable instruments available for use within a pediatric primary care setting. If a practice determines its goals for screening and decides who should be screened and at what age, there is evidence that the implementation of screening can be successful. Additional research needs to focus on the identification and treatment of behavioral health disorders in primary care settings but, currently, funding from the NIH directed towards this area is insufficient [28]. More information is still needed in order to effect system change, including information about how to develop effective collaborations with mental health providers, how to implement innovative models of collaborative care, how to interpret screens to make the best use of their results and how to receive adequate financial reimbursement so that pediatricians can successfully meet the behavioral health needs of their patients.

Acknowledgements

We gratefully acknowledge the assistance of Julia Robertson and Carol Coughlin in the preparation of this paper.

References and recommended reading

Papers of particular interest, published within the annual period of review, have been highlighted as:

- • of special interest
- •• of outstanding interest

Additional references related to this topic can also be found in the Current World Literature section in this issue (p. 682).

1 Cassidy L, Jellinek M. Approaches to Recognition and Management of Childhood Psychiatric Disorders in Pediatric Primary Care. Pediatr Clin North Am 1998; 45:1037–1052.

2 Williams J, Klinepeter K, Palmes G, *et al.* Diagnosis and Treatment of Behavioral Health Disorders in Pediatric Practice. Pediatrics 2004; 114:601–606.

3 •• Simonian S. Screening and Identification in Pediatric Primary Care. Behav Modif 2006; 30:114–131.
This well written and comprehensive review article highlights the critical issues related to screening in pediatric primary care settings and reviews key screening instruments.

4 Briggs-Gowan M, Horwitz S, Schwab-Stone M, *et al.* Mental Health in Pediatric Settings: Distribution of Disorders and Factors Related to Service Use. Am Acad Child Adolesc Psychiatry 2000; 39:841–849.

5 Kelleher K, McInerny T, Gardner W, *et al.* Increasing Identification of Psychosocial Problems: 1979–1996. Pediatrics 2000; 105:1313–1321.

6 •• Costello E, Foley D, Angold A. 10-Year Research Update Review: The Epidemiology of Child and Adolescent Psychiatric Disorder: II Developmental Epidemiology. J Am Acad Child Adolesc Psychiatry 2006; 45:18–25.
This is an excellent and comprehensive review of the epidemiology of child and adolescent psychiatric disorders.

7 Costello E, Mustillo S, Erkanli A, *et al.* Prevalence and Development of Psychiatric Disorders in Childhood and Adolescence. Arch Gen Psychiatry 2003; 60:837–844.

8 Brown R, Freeman W, Perrin J, *et al.* Prevalence and Assessment of Attention-Deficit/Hyperactivity Disorder in Primary Care Settings. Pediatrics 2001; 107:1–11.

9 Huffman L, Nichols M. Early Detection of Young Children's Mental Health Problems in Primary Care Settings. In: DelCarmen-Wiggins R, Carter A, editors. Handbook of Infant, Toddler and Preschool Mental Health Assessment. New York: Oxford University Press; 2004. pp. 467–489.

10 Reijneveld SA, Brugman E, Verhulst F, Verloove-Vanhorick SP. Identification and Management of Psychosocial Problems Among Toddlers in Dutch Preventive Child Healthcare. Arch Pediatr Adolesc Med 2004; 158:811–817.

11 Brugman E, Reijneveld SA, Verhulst F, Verloove-Vanhorick SP. Identification and Management of Psychosocial Problems by Preventive Child Healthcare. Arch Pediatr Adolesc Med 2001; 155:462–469.

12 Sayal K, Taylor E. Detection of Child Mental Health Disorders by General Practitioners. Br J Gen Pract 2004; 54:348–352.

13 Ellingson KD, Briggs-Gowan MJ, Carter AS, Horwitz SM. Parent Identification of Early Emerging Child Behavior Problems. Arch Pediatr Adolesc Med 2004; 158:766–772.

14 Simonian S, Tarnowsi K. Utility of the Pediatric Symptom Checklist for Behavioral Screening of Disadvantaged Children. Child Psychiatry Hum Dev 2001; 31:269–278.

15 Gardner W, Kelleher KJ, Pager KA, Campo JV. Primary Care Clinicians' Use of Standardized Psychiatric Diagnoses. Child Care Health Dev 2004; 30:401–412.

16 • Ani C, Garralda E. Developing Primary Mental Healthcare for Children and Adolescents. Curr Opin Psychiatry 2005; 18:440–444.
This article gives a nice review of the role of the primary care clinician related to mental health services for children and adolescents.

17 Wren FJ, Scholle SH, Heo J, Comer D. Pediatric Mood and Anxiety Syndromes in Primary Care: Who Gets Identified? Int J Psychiatry Med 2003; 33:1–16.

18 Kim-Cohen J, Caspi A, Moffit T, *et al.* Prior Juvenile Diagnoses in Adults With Mental Disorder. Arch Gen Psychiatry 2003; 60:709–717.

19 Bergman D. Screening for Behavioral Developmental Problems: Issues, Obstacles, and Opportunities for Change. National Academy for State Health Policy 2004; 1–20.

20 Hacker K, Weidner D, McBride J. Integrating Pediatrics and Mental Health: The Reality Is in the Relationships. Arch Pediatr Adolesc Med 2004; 158:833–834.

21 •• Earls M, Hay S. Setting the Stage for Success: Implementation of Developmental and Behavioral Screening and Surveillance in Primary Care Practice – the North Carolina Assuring Better Child Health and Development (ABCD) Project. Pediatrics 2006; 118:183–188.
This study describes how primary care practices in North Carolina successfully incorporated screening for developmental and behavioral problems.

22 Myers Winters N. Ten-Year Review of Rating Scales I: Overview of Scale Functioning, Psychometric Properties, and Selection (Research Update Review). Am Acad Child Adolesc Psychiatry 2002; 41:114–122.

23 Perrin E, Stancin TA. Continuing Dilemma: Whether and How to Screen for Concerns About Children's Behavior. Pediatr Rev 2002; 23:264–282.

24 Olson A, Kemper K, Kelleher K, *et al.* Primary Care Pediatrician's Roles and Perceived Responsibilities in the Identification and Management of Maternal Depression. Pediatrics 2002; 110:1169–1176.

25 Chaudron LH, Szilagyi PG, Kitzman HJ, *et al.* Detection of Postpartum Depressive Symptoms by Screening at Well Child Visits. Pediatrics 2004; 113:551–558.

26 Kazak A. Comprehensive Care for Children with Cancer and Their Families: A Social Ecological Framework Guiding Research, Practice and Policy. Children's Services: Social Policy, Research and Practice 2001; 4:217–233.

27 Heneghan AM, Mercer M, DeLeone NL. Will Mothers Discuss Parenting Stress and Depressive Symptoms With Their Child's Pediatrician. Pediatrics 2004; 113:460–467.

28 Horwitz S, Kelleher K, Boyce T, *et al.* Barriers to Healthcare Research for Children and Youth with Psychosocial Problems. JAMA 2002; 288:1508–1512.

29 Jellinek M, Murphy J, Little M, *et al.* Use of the Pediatric Symptom Checklist to Screen for Psychosocial Problems in Pediatric Primary Care: A National Feasibility Study. Arch Pediatr Adolesc Med 1999; 153:254–260.

30 Gardner W, Kelleher K, Pajer K. Multidimensional Adaptive Testing For Mental Health Problems In Primary Care. Med Care 2002; 40:812–823.

31 Jutte D, Burgos A, Mendoza F, *et al.* Use of the Pediatric Symptom Checklist in a Low-Income, Mexican American Population. Arch Pediatr Adolesc Med 2003; 157:1169–1176.

32 Glascoe F. Parents Evaluations of Developmental Status. Nashville: Ellsworth & Vandermeer Press; http://www.pedstest.com and online at www.forepath.org.

33 Reynolds C, Kamphaus R. Behavior Assessment System for Child. Second Edition. Circle Pines, MN: American Guidance Service; 2005.

34 Achenbach T, Rescorla L. Manual for the ASEBA preschool forms and profiles. Burlington, VT: University of Vermont, Department of Psychiatry; 2000.

35 Achenbach T. Manual for the Child Behavior Checklist/4-18 and 1991 profile. Burlington, VT: University of Vermont; 1991.

36 Carter A, Briggs-Gowan M. The Brief Infant Toddler Social and Emotional Assessment Manual (BITSEA). New Haven, CT: Yale University, Department of Psychology; 2005.

37 Luby JL, Heffelfinger A, Kienig-McNaught AL, *et al.* The Preschool Feeling Checklist: A Brief and Sensitive Screening Measure for Depression in Young Children. J Am Acad Child Adolesc Psychiatry 2004; 43:708–717.

38 Eyberg Child Behavior Inventory Psychological Assessment Resources. Odessa, Florida. http://www.parinc.com/.

39 Bricker D, Squires J. Ages & Stages Questionnaires (ASQ): A Parent-Completed, Child- Monitoring System. Second Edition. Baltimore, MD: Brooks Publishing; 2004.

40 Kemper KJ, Kelleher KJ. Family Psychosocial Screening: Instruments and Techniques. Ambulatory Child Health 1996; 4:325–339.

41 Mounton-Simien P, McCain A, Kelley M. The Development of the Toddler Behavior Screening Inventory. J Abnorm Child Psychol 1997; 2:59–61.

42 Cox JL, Holden JM, Sagovsky R. Detection of Postnatal Depression: Development of the 10-item Edinburgh Postnatal Depression Scale. Br J Psychiatr 1987; 150:782–786.

43 Abidin R. Parenting Stress Index: Manual. Charlottesville, VA: University of Virginia, Pediatric Psychology Press; 1990.