

Management of pediatric mental disorders in primary care: where are we now and where are we going?

Kelly J. Kelleher, John V. Campo and William P. Gardner

Purpose of review

Pediatric mental disorders are among the most common disorders of childhood and are routinely seen in primary care. We review innovative management strategies, treatment technologies, and models of collaboration with behavioral health specialists in general medical settings. Our goal is to advance the integration of behavioral health services into primary care.

Recent findings

The application of mental health interventions with proven efficacy holds great promise for youths with mental disorders. Unfortunately, traditional primary-care management of pediatric mental disorders is characterized by nonspecific counseling, low-dose prescribing, and referrals to specialty settings that are often not completed.

Summary

The development, study, and refinement of new assessment and treatment technologies, supplemental treatments, and collaborative models of care delivery will be necessary to ensure more effective care for youths with mental disorders and their families. The promise of pediatric mental healthcare will not be fulfilled unless primary-care clinicians and behavioral health specialists forge new collaborative relationships that enhance the delivery of evidence-based care to affected children and their families.

Keywords

collaborative care, mental health services

Introduction

Primary-care clinicians are uniquely positioned to initiate, manage, or coordinate care for the growing number of children and adolescents diagnosed with mental disorders. Children with such conditions are often seen in primary-care settings, tend to be higher users of healthcare services as compared with those not affected and are more likely to have other medical comorbidities than children without these disorders [1–3]. Moreover, families consistently report that primary-care clinicians are among the most trusted professionals that young families interact with, and they would prefer that their pediatricians discuss such issues during healthcare visits [4].

Pediatric clinicians are increasingly embracing this challenge, as evidenced by rapidly growing rates of diagnosis and treatment during primary-care visits [1,5]. However, treatment is not growing as fast as diagnosis, and there are many questions about the quality of that treatment [6]. The majority of individuals suffering from mental disorders experience the onset of a disorder before adulthood, yet most affected children receive inadequate treatment or no treatment at all [7,8]. It is therefore troubling that it takes significantly longer for individuals who experience the early onset of mental disorders to be offered disorder-specific treatment than those who develop disorders later in life [8].

In response to this public health embarrassment and the larger and growing body of research supporting the delivery of behavioral health interventions for adults in primary care, a number of new treatment technologies and collaborative care models that integrate specialty expertise into the primary-care setting have been developed. Creative models of collaboration aim to reduce the inefficiencies built into current practices. In this article we review current practices and what little is known about ‘usual care’, introduce new treatment technologies that are moving into primary care, and provide an overview of collaborative models that link primary care and behavioral services in innovative fashions. We do not discuss preventive interventions, services for very young children, care for parents with mental disorders, or delivery of treatment in specialty settings, even though each is essential for the well-being of children and adolescents.

Curr Opin Pediatr 18:649–653. © 2006 Lippincott Williams & Wilkins.

Columbus Children’s Research Institute and The Ohio State University, Columbus, Ohio, USA

Correspondence to Kelly Kelleher, MD, MPH, Columbus Children’s Research Institute, 700 Children’s Drive, Columbus, OH 43205, USA
Tel: +1 614 722 3066; fax: +1 614 722 3544; e-mail: kellehek@ccri.net

Current Opinion in Pediatrics 2006, 18:649–653

Abbreviations

ADHD attention-deficit hyperactive disorder
PCP primary-care practice

© 2006 Lippincott Williams & Wilkins
1040-8703

Current management

Studies of primary-care management of child and adolescent behavioral and emotional disorders usually consider counseling interventions, psychotropic drug prescriptions, and referrals to behavioral health specialists separately. Counseling by primary-care clinicians for these disorders is the most poorly described. However, the little information that exists suggests that counseling is defined variously to include everything from behavioral-modification plans to reassurance and sympathetic listening [9]. Counseling by primary-care clinicians or their staff is the most common intervention offered for newly identified mental disorders and related problems in primary care for children [10]. It is unclear how effective the provision of counseling or advice by primary-care clinicians and their staff is, as there have been no studies of counseling outcomes in pediatric care. The delivery of standardized psychotherapy protocols by primary-care clinicians for pediatric mental disorders has not been studied, but one can easily imagine many barriers to the implementation of primary-care clinician-delivered psychotherapy. Of greater interest and practicality is the delivery of psychotherapeutic intervention by mental health professionals integrated into primary-care settings, though again research has been quite limited.

Psychotropic drug prescribing has been more extensively studied. Primary-care clinicians prescribe psychotropic drugs in roughly half of the visits with a known psychosocial problem, but there is likely considerable variability across individual clinicians, practices, and geographic regions [5,10]. The majority of pediatric psychoactive drug prescriptions in primary care are for stimulants to treat presumed attention-deficit hyperactive disorder (ADHD). In addition, a growing number of children and adolescents are being treated with antidepressants by primary-care clinicians, and even antipsychotic medications are being increasingly prescribed for diverse indications in children and adolescents [11,12,13^{*}]. The evidence base for the effectiveness of psychoactive medications in primary care for conditions other than ADHD is limited, but clinicians confronted with a growing number of children affected by behavioral and emotional disorders have few practical alternatives. Enhancements to the quality and availability of psychotherapy services for depression and other conditions result in greater uptake of therapy as compared with medication use among depressed adolescents in primary care [14^{*}].

The prescription of psychotropic drugs to children and adolescents has increased rapidly over the past 15 years with the introduction of new antidepressant agents, new antipsychotics, and long-acting stimulant preparations. However, highly publicized concerns related to potentially serious adverse effects for both the antidepressants and stimulants have more recently created confusion and

furor over their prescription by nonspecialists in primary care [14^{*}] (see also www.fda.gov/medwatch/). Unfortunately, no clarity on practice implications for primary-care clinicians working with children and their families has emerged around these drugs. In addition, a small but growing number of studies suggest that some patients prefer psychotherapy interventions to psychotropic drugs when given a choice [15,16^{**}].

Very little information is available about the success or failure of referrals from primary-care settings to behavioral health specialists for diagnostic evaluations, treatment initiation, or ongoing management. One study found that family compliance with mental health referral is quite low, with less than half of the youths referred for specialty mental health services ever receiving intervention [17]. Referrals are more common for younger children with psychosocial problems, females, and those with depression or anxiety as compared with ADHD and behavioral problems [18]. Health-system and clinician factors also influence the likelihood of referral from primary-care settings. For example, primary-care clinician tolerance for uncertainty and availability of specialty care are both important. Regardless of which children and adolescents are referred, the actual use of specialty services after referral seems extremely limited. On average, less than half of the patients referred by primary-care clinicians actually have a specialty visit in the ensuing 6 months and of those that do have such visits, the median number of visits is one [17].

In summary, primary-care services for children affected by behavioral and emotional disorders and their families are limited and without documented effectiveness as to their current delivery. It is in this context that new options for the treatment and management of these disorders are being considered.

Innovations in treatment technology

The most visible changes in treatment technology for behavioral and emotional disorders for children and adolescents have occurred in psychopharmacology. Beginning in 1990, the explosive growth of the selective serotonin-reuptake inhibitor (SSRI) class of antidepressants and the newer, long-acting stimulant medications increased the willingness of many primary-care clinicians to manage mental disorders. These expansions in the armamentarium have been tempered by new and dramatic warnings about possible adverse events associated with the initiation of treatment in both cases. Specifically, some youths taking selective serotonin-reuptake inhibitor antidepressants expressed increased suicidal ideation, and the question of whether stimulants might induce cardiac arrhythmias or hypertension has been raised [14^{*}]. Although an active debate and program of research is ongoing both in the UK and USA on the

mechanisms and strength of these potential adverse events, none of the published research to date is on the effectiveness of the antidepressant agents in primary-care settings for pediatric patients, even though many of the prescriptions for antidepressants and most for stimulants are written there.

Less controversial are newer psychosocial interventions for children with behavioral and emotional disorders in primary care, including some that are employing diverse modalities to deliver their message. The Positive Parenting Program has used parent-administered, television, primary-care and telephone versions to assist parents in caring for children with early symptoms of externalizing or conduct problems [19–21]. Brief social skills training has also improved the outcome of children with ADHD in primary care [22].

Because so few mental health specialists are available in general and those trained in evidence-based practices are even more rare, some institutions have developed Internet- and telephone-based services to supplement therapist or clinician interactions. Clarke *et al.* [23] have demonstrated positive outcomes with Internet-based psychotherapy services for teens with mild to moderate depression, which is supported by others [24]. None of these new nonpharmacological interventions are widely available but they offer hope that psychotherapy services delivered in innovative ways will reach many affected youths who previously had no access to care.

Collaborative models for improving mental health services for children in primary care

The development of specific treatment technologies is a necessary but not sufficient step in improving care for children affected by behavioral and emotional disorders in primary care. Even more challenging is finding methods to implement treatments in an effective fashion in the busy and sometimes chaotic setting of primary care. Most authors now understand that high-quality services for mental disorders in primary care are generally multidisciplinary and collaborative [25]. These children have disorders that are most often chronic conditions presenting with a broad range of severity and are commonly comorbid with other physical and mental disorders.

To address this clinical complexity, strategies have been proposed to manage chronic mental disorders in primary-care settings. They include training primary-care practices (PCPs) in managing common mental disorders, the use of mental health specialists as consultants to support the directed efforts of PCPs, or co-location of mental health specialists to provide services within primary care [26]. Adult primary-care settings have successfully managed mental disorders using strategies that employ mental health professionals as educators, consultants,

supervisors, and/or direct service providers [27–29]. Specialist collaboration in primary care can improve communication between PCPs and specialists, improve rates of referral completion, and enhance provider satisfaction [30]. Nevertheless, specialist involvement alone is less potent in improving care than are systemic changes in care system design [31–33].

The chronic care model has proven to be an important development in the efforts of organized medicine to foster a longitudinal, public health perspective in the general medical setting, where an acute care or cross-sectional mindset has traditionally prevailed [34]. Initially offered in response to the challenge of managing common adult illnesses such as diabetes mellitus, the chronic care model has provided a workable framework for the integration of mental health services into primary care and other specialty general medical settings [32]. Professionals involved in the evolution of the chronic care model recognized that a public health-driven system of care would be capable of ensuring that a mutually understood and agreed-upon care plan is in place for each patient, that patients and families have the skills necessary to manage the condition, that proven treatments are available to treat the core illness and prevent complications, and that continuous follow-up care is accessible. Six key elements of the chronic care model have been promoted: (1) a leadership team configured among the organizational partners that includes accountable primary-care clinicians, specialists, and administrators; (2) access to decision support for primary-care service providers (e.g. access to mental health specialists and evidence-based guidelines to aid in the recognition and management of common mental health disorders); (3) modifications in delivery system design that make state-of-the-art management guidelines and treatments available (e.g. use of a care manager responsible for coordinating care with primary-care clinicians and specialists); (4) development and implementation of clinical information systems that empower PCPs, care managers, and mental health specialists to manage common mental disorders longitudinally in as many affected individuals as possible; (5) self-management support for patients and families to promote understanding of common mental health disorders and scientifically based treatment options to facilitate shared decision-making with professionals; and (6) patient and family access to community resources beyond individual healthcare providers [27,31–34].

Integrated mental health services in a rural pediatric practice

There are many examples of a collaborative-care approach to the management of mental health disorders in primary care for adults, but few appear in the pediatric literature. Some studies have borrowed components of

the collaborative care approach in recent research, such as the study of the treatment of adolescent depression in primary care [35**].

We recently described a program within a large rural PCP in western Pennsylvania that relies on the relationship between PCPs and an on-site collaborative mental health care team consisting of an advanced practice nurse with specialty mental health training, a psychiatric social worker, and a child and adolescent psychiatrist [36**]. In this model, the PCP is the physician of record with responsibilities that include initial case identification, presumptive diagnosis, and ensuring the overall continuity of patient care. The advanced practice nurse serves as the primary liaison between the PCPs and psychiatrist (who is on-site infrequently), and functions as a bridge between primary and specialty care. The advanced practice nurse works closely with the PCP to complete an initial assessment and to triage each patient with an identified problem, with the goal of determining whether the child might benefit from services, and if so, where and how such services are best delivered.

Several barriers exist to the implementation of collaborative models of care for children and adolescents with behavioral and emotional disorders. One arises from the practical difficulties of deriving fiscal support for specialist involvement in such models that does not involve directly billable, face-to-face time. New approaches such as telephone interventions, telephone care management for youths on psychoactive medications, and telemedicine may prove to be nonstarters in the real world unless innovations in systems of compensation for the delivery of behavioral healthcare services are permitted to parallel innovations in care-delivery models [37]. Several US states now allow Medicaid funding for telepsychiatry, although many issues remain to be solved [38]. Nevertheless, while challenging from a fiscal perspective, collaborative models that flexibly incorporate pediatric mental health specialists into primary care appear to be feasible and compatible with the workings of medical practice.

Future directions

Continued growth in the development of pediatric collaborative models for behavioral health in primary-care settings will parallel the growth of disease management for other conditions such as asthma and diabetes. These models will increasingly call for delivery of healthcare outside of the office through a wide variety of communication devices and assessment tools. In addition, families and patients will increasingly participate in monitoring and evaluating their symptoms and results with electronic tools and health records. Both the increased use of electronic tools for out-of-office care and family involvement will require enhanced communication between specialists and primary-care clinicians.

Conclusion

Primary-care services for behavioral health problems in children and adolescents remain problematic. However, promising models for improving care that require coordinated efforts by specialists and primary-care clinicians appear to offer the most hope. These models will be enhanced by the rapid spread of electronic health records, other electronic health tools, and family or patient participation in care.

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 Kelleher KJ, McInerney TK, Gardner WP, *et al.* Increasing identification of psychosocial problems: 1979–1996. *Pediatrics* 2001; 105:1313–1322.
- 2 Buck JA. Utilization of Medicaid mental health services by nondisabled children and adolescents. *Psychiatr Serv* 1997; 48:65–70.
- 3 Kelleher K, Starfield B. Use of healthcare by children receiving mental health treatment. *Pediatrics* 1990; 85:114–118.
- 4 Heneghan AM, Mercer M, DeLeone NL. Will mothers discuss parenting stress and depressive symptoms with their child's pediatrician? *Pediatrics* 2004; 113:460–467.
- 5 Hoagwood K, Kelleher KJ, Feil M, Comer DM. Treatment services for children with ADHD: a national perspective. *J Am Acad Child Adolesc Psychiatry* 2000; 39:198–206.
- 6 US Public Health Service. Report of the Surgeon General's Conference on Children's Mental Health: a national action agenda. Washington DC: Department of Health and Human Services; 2000.
- 7 Kessler KC, Berglund P, Demler O, *et al.* Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry* 2005; 62:593–602.
- 8 Kessler RC, Demler O, Frank RG, *et al.* Prevalence and treatment of mental disorders, 1990 to 2003. *N Engl J Med* 2005; 352:2515–2523.
- 9 Meredith LS, Mazel RM. Counseling for depression by primary care providers. *Int J Psychiatry Med* 2000; 30:343–365.
- 10 Gardner W, Kelleher KJ, Wasserman R, *et al.* Primary care treatment of pediatric psychosocial problems: a study from pediatric research in office settings and ambulatory sentinel practice network. *Pediatrics* 2000; 106:E44.
- 11 Rushton JL, Whitmire JT. Pediatric stimulant and selective serotonin reuptake inhibitor prescription trends: 1992 to 1998. *Arch Pediatr Adolesc Med* 2001; 155:560–565.
- 12 Rushton JL, Clark SJ, Freed GL. Pediatrician and family physician prescription of selective serotonin reuptake inhibitors. *Pediatrics* 2000; 105:E82.
- 13 Cooper WO, Arbogast PG, Ding H, *et al.* Trends in prescribing of antipsychotic medications for US children. *Ambul Pediatr* 2006; 6: 79–83.
- This article notes the still small but rapidly growing number of prescriptions of new antipsychotic drugs to children and adolescents. Antipsychotic drugs have few indications in children and adolescents, but are being used for a variety of behavioral and emotional disorders. The growth in their use for the youngest children is particularly rapid.
- 14 Kaizar EE, Greenhouse JB, Seltman H, Kelleher K. Do antidepressants cause suicidality in children? A Bayesian meta-analysis. *J Soc Clin Trials* 2006; 3:73–98.
- This article presents a re-analysis of the now infamous US Food and Drug Administration study of suicidal ideation and self-harm behaviors among children treated in randomized trials with antidepressant medications. The authors find that only selective serotonin-reuptake inhibitor antidepressants (compared with other antidepressants) and children with major depression (compared with other disorders) are at increased risk.
- 15 Cooper LA, Gonzales JJ, Gallo JJ, *et al.* The acceptability of treatment for depression among African-American, Hispanic, and white primary care patients. *Med Care* 2003; 41:479–489.

- 16** Jaycox LH, Asarnow JR, Sherbourne CD, *et al.* Adolescent primary care patients' preferences for depression treatment. *Adm Policy Ment Health* 2006; 33:198–207.

This article assessed the preferences for treatment of adolescents screening positive for depression in primary care. Youths strongly preferred active treatment over watchful waiting, and most preferred psychotherapy over medication. These effects were particularly pronounced for some ethnic groups.

- 17** Rushton J, Bruckman D, Kelleher K. Primary care referral of children with psychosocial problems. *Arch Pediatr Adolesc Med* 2002; 156:592–598.
- 18** Kelleher KJ, Childs G, Gardner WP, *et al.* Insurance status and clinician recognition of child psychosocial problems. *Pediatric Res* 1996; 39:18A.
- 19** Cann W, Rogers H, Worley G. Report on a program evaluation of a telephone assisted parenting support service for families living in isolated rural areas. *Aust e-J Adv Mental Health* 2003, 2(3). www.auseinet.com/journal/vol2iss3/cannrogers.pdf.
- 20** Crisante L. Training in parent consultation skills for Primary Care Practitioner's early intervention in preschool. *Aust e-J Adv Mental Health* 2003, 2(3). www.auseinet.finders.edu.au/journal/vol2iss3/crisante.pdf.
- 21** Sanders MR, Murphy-Brennan M, McAuliffe C. The development, evaluation and dissemination of a training program for general practitioners in evidence-based parent consultation skills. *Int J Mental Health Promotion* 2003; 5: 13–20.
- 22** Tutty S, Gephart H, Wurzbacher K. Enhancing behavioral and social skill functioning in children newly diagnosed with attention-deficit hyperactivity disorder in a pediatric setting. *J Dev Behav Pediatr* 2003; 24:51–57.
- 23** Clarke G, Reid E, Eubanks D, *et al.* Overcoming depression on the Internet (ODIN): a randomized controlled trial of an Internet depression skills intervention program. *J Med Internet Res* 2002; 4:E14.
- 24** Ritterband LM, Cox DJ, Walker LS, *et al.* An Internet intervention as adjunctive therapy for pediatric encopresis. *J Consult Clin Psychol* 2003; 71:910–917.
- 25** Pincus H. The future of behavioral health and primary care: drowning in the mainstream or left on the bank? *Psychosomatics* 2003; 44:1–11.
- 26** Bower P, Garralda E, Kramer T, *et al.* The treatment of child and adolescent mental health problems in primary care: a systematic review. *Family Practice* 2001; 18:373–382.
- 27** Katon W, Von Korff M, Lin E, *et al.* Stepped collaborative care for primary care patients with persistent symptoms of depression: a randomized trial. *Arch Gen Psychiatry* 1999; 56:1109–1115.
- 28** Rollman BL, Belnap BH, Mazumdar S, *et al.* A randomized trial to improve the quality of treatment for panic and generalized anxiety disorders in primary care. *Arch Gen Psychiatry* 2005; 62:1332–1341.
- 29** Schulberg HC, Katon WJ, Simon GE, Rush AJ. Best clinical practice: guidelines for managing major depression in primary medical care. *J Clin Psychiatry* 1999; 60:19–26.
- 30** Forrest CB, Glade GB, Baker AE, *et al.* The pediatric primary-specialty care interface: how pediatricians refer children and adolescents to specialty care. *Arch Pediatr Adolesc Med* 1999; 153:705–714.
- 31** Katon W, Von Korff M, Lin E, Simon G. Rethinking practitioner roles in chronic illness: the specialist, primary care physician, and the practice nurse. *Gen Hosp Psychiatry* 2001; 23:138–144.
- 32** Von Korff M, Gruman J, Schaefer J, *et al.* Collaborative management of chronic illness. *Ann Intern Med* 1997; 127:1097–1102.
- 33** Wagner EH. The role of patient care teams in chronic disease management. *BMJ* 2000; 320:569–572.
- 34** Rothman AA, Wagner EH. Chronic illness management: what is the role of primary care? *Ann Intern Med* 2003; 138:256–261.
- 35** Asarnow J, Jaycox LH, Duan N, *et al.* Effectiveness of a quality improvement intervention for adolescent depression in primary care clinic: a randomized controlled trial. *JAMA* 2005; 293:311–319.
- This article is a report from the first large quality-improvement project ever conducted on mental health delivery in primary-care settings for adolescents. The investigators conducted a randomized trial of quality improvement for both depression psychotherapy and medication management, demonstrating that care could be improved consistently in diverse primary-care settings.
- 36** Campo JV, Shafer S, Lucas A, *et al.* Managing pediatric mental disorders in primary care: a stepped collaborative care model. *J Am Psychiatric Nurses Assoc* 2005; 11:1–7.
- This article is a practical description of an innovative model for providing mental health services in a pediatric setting through the use of an advanced practice nurse. The authors explain both the theory and organization of the practice.
- 37** Borowsky IW, Mozayeny S, Stuenkel K, Ireland M. Effects of a primary care based intervention on violent behavior and injury in children. *Pediatrics* 2004; 114:e392–e399.
- 38** Glueckauf RL, Ketterson TU. Telehealth interventions for individuals with chronic illness: research review and implications for practice. *Prof Psychol Res Practice* 2004; 35:615–627.