

Children and Depression

Chapter 6

Background

Child and adolescent depression and bipolar disorder, also known as mood disorders, are serious medical illnesses that affect more than 20 million Americans of every race and ethnic group.¹ Mood disorders are considered to be brain disorders because they are mediated through the brain. These illnesses affect individuals at all stages of life, including childhood. If left untreated, mood disorders can be fatal: nearly one in six persons with severe untreated depression will die by suicide.^{2,3} According to the WHO and the World Bank, major depression is the leading cause of disability in the U.S. and other countries with developed economies.⁴ Because of the profound public health consequences associated with these disorders, OMH is committed to improving the recognition, early intervention, and treatment of mood disorders in children and youth.

Among the most significant scientific advances in the last three decades has been the discovery that depression and bipolar disorder not only exist in children but are as debilitating for them as they are for adults. Major depression affects an estimated 6% of children ages 9-17.⁵ As children become adolescents, it becomes more common in girls than in boys.⁶ Epidemiological data are lacking on the extent to which bipolar disorder

affects children, but early indications suggest that some proportion of children and adolescents who have major depression will be found to have bipolar disorder later in life. The likelihood increases if the depressed child has a family member with bipolar disorder.⁷

Recent scientific advances from neuroscience, genetics and clinical trials have demonstrated that the brain is the primary organ affected in depression and bipolar disorder. Modern brain imaging technologies have revealed neural circuits responsible for the regulation of moods, thought, sleep, appetite and behavior. When these circuits fail to function properly, critical neurotransmitters—chemicals used by nerve cells to communicate—are often out of balance. Recent work has delineated several neurotransmitter and other neurochemical systems that are involved in mood disorders, including systems that modulate gene transcription. These discoveries provide clues to potential neurochemical targets for effective treatments. In addition, genetics research indicates that vulnerabilities to depression and bipolar disorder often result from the interaction of multiple genes and environmental factors. Numerous treatment studies are currently under way to examine brain chemistry and the mechanisms of action of both psychosocial and pharmacologic treatments to improve the efficiency and effectiveness of these interventions.

Notes

- 1 Kessler RC, McGonagle KA, Zhao S, Nelson CB, Hughes M, Eshleman S et al. (1994). *Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States. Results from the National Comorbidity Survey*. Archives of General Psychiatry, 51:8-19
- 2 Goodwin FK, & Jamison KR. (1990). *Manic-depressive illness*. New York: Oxford University Press.
- 3 Guze, S. B., & Robins, E. (1970). *Suicide and affective disorders*. British Journal of Psychiatry, 117, 437-438.
- 4 Murray CJL, Lopez AD, eds. (1996). *The global burden of disease and injury series, volume 1: A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. Cambridge, MA: Published by the Harvard School of Public Health on behalf of the World Health Organization and the World Bank, Harvard University Press.
- 5 Shaffer D, Fisher P, Dulcan MK, Davies M, Piacentini J, Schwab-Stone ME, Lahey BB, Bourdon K, Jensen PS, Bird HR, Canino G, & Regier DA. (1996). *The NIMH Diagnostic Interview Schedule for Children Version 2.3 (DISC-2.3): Description, acceptability, prevalence rates, and performance in the MECA study*. Journal of the American Academy of Child and Adolescent Psychiatry, 35(7), 865-877.
- 6 Angold A, Costello EJ, Farmer EMZ, et al. (1999) *Impaired but undiagnosed*. Journal of the American Academy of Child and Adolescent Psychiatry, 38, 129-137.
- 7 National Institute of Mental Health. (2000). *Depression in children and adolescents: A fact sheet for physicians*. Bethesda, MD: Department of Health and Human Services.

What are the Symptoms of Depression and Bipolar Disorder in Children and Adolescents?

Unlike normal changes in mood that are common among most individuals at different times of life, the symptoms of depression are extreme and often incapacitating. The symptoms include a persistent sad mood; loss of interest in activities; significant change in appetite or body weight; difficulty sleeping or oversleeping; physical slowing or agitation; loss of energy; feelings of worthlessness; difficulty thinking or concentrating; and recurrent thoughts of death or suicide. A diagnosis of depression occurs if an individual has five or more of these symptoms every day during a two-week period. In bipolar disorder, an extremely debilitating illness, episodes of depression alternate with periods of persistently elevated mood or irritability, sometimes accompanied by a decreased need for sleep, increased talkativeness, racing thoughts, distractibility or extreme physical agitation.

The consequences of untreated depression can be devastating. A 2004 report from the American Academy of Child and Adolescent Psychiatry documented that suicide is the third leading cause of death for 15 to 24 year olds, and the sixth leading cause of death for five to 14 year olds. In fact, in 2001 nearly 4,000 teenagers between the ages of 15 and 24 killed themselves.⁸ Depression is responsible for over 500,000 suicide attempts by children and adolescents a year.⁹

How and When Does Depression Develop in Children?

Puberty appears to be the time at which children, and in particular girls, are at increased risk for developing depression. The changing levels of hormones that occur during puberty may affect brain function. There is some evidence that exposure to increased levels of hormones at puberty, particularly under conditions of social stress, can predict heightened risk for depression.

Depression among children or adolescents is often preceded by other mental disorders, most notably anxiety. Anxiety disorders are eight times more common in depressed than non-depressed children and adolescents, while behavioral problems (e.g., conduct disorders and oppositional disorders) are six times more common. Attention Deficit Hyperactivity Disorder (ADHD) is five times more common among youth with depression than youth unaffected by it. In fact, the onset of depression usually follows the onset of other disorders. Consequently, prevention of depression is directly linked to the prevention or treatment of these other psychiatric disorders.

Depression is also significantly associated with abuse, maltreatment and trauma. Stress exposure, as has been well documented in both animal and human studies, can produce persistent effects on brain structure and function. For example, in animal studies, exposure to extreme adversity during critical periods of development leads to changes in perceptions of and responsiveness to environmental events. The interactions among stress exposure, genetic vulnerabilities, and development are complex and these interactions are still being examined. However, effective treatments for stress-related

Notes

- 8 National Center for Injury and Prevention Control. *Suicide: Fact sheet*. Accessed online January 12, 2004, at <http://www.cdc.gov/ncipc/factsheets/suifacts.htm>
- 9 Office of the Surgeon General. (1999). *The Surgeon General's call to action to prevent suicide*. Washington, DC: Department of Health and Human Services.

disorders in young persons, particularly trauma, exist and have been studied for more than a decade. It is likely that providing early and effective interventions to children who have been exposed to abuse, maltreatment or trauma may improve their long-term outcomes by providing them with necessary coping strategies for handling subsequent stressors and decrease the likelihood that they will develop severe depression later in life.

Other risk factors for early-onset depression include family history. Children of parents with depression are three times more likely to have an episode of depression during their lifetime than children of parents without depression. Recent findings from a three-generation study of familial depression documented significantly increased risk of mental disorders among grandchildren in families where individuals in two generations have experienced depression, with almost 60% of these grandchildren having mental disorders.¹⁰ Furthermore, this intergenerational study documented that anxiety was a clear precursor of depression and that grandchildren of depressed parents and grandparents were at a significantly elevated risk for anxiety disorders. The findings from this study strongly suggest that early interventions for children with a family history of depression are especially warranted.

Clinical practice guidelines to improve identification of adolescents with depression for primary care providers have recently been developed through a consensus process.¹¹ The resulting Guidelines for Treatment of Adolescent Depression are intended for use by primary care professionals for the management of adolescents with or at risk for depression who are between the ages of ten and 21. Using a combination of evidence- and consensus-based methodolo-

gies, the guidelines were developed in six phases to assist in primary care management. The phases include: 1) identification/surveillance of youth at risk for depression, 2) assessment and diagnosis, 3) initial management, including family psychoeducation, 4) treatment, 5) ongoing management, and 6) follow-up.

Treatment and Prevention

There is no longer any doubt that children and adolescents can experience severe depression. The questions that drive current research studies are how best to intervene early to prevent the later onset of depression. Estimates from national epidemiological studies of adults with psychiatric disorders indicate that many adult mental disorders begin in childhood. The implications of these findings are that early recognition and treatment of childhood psychiatric problems may prevent later illnesses and their unfortunate consequences. Recognizing and treating psychiatric illnesses early in life—particularly the devastating disorders of depression and anxiety—may have a profound and long lasting effect on later development, as recognition and treatment can help to avert the potentially debilitating consequences of adult disorders.

Treatments

Considerable progress has been made in the past ten years documenting effective treatments for young persons with depression. Most of the efforts to date have focused on adolescents. More than a dozen clinical trials have demonstrated that both cognitive-behav-

Notes

- 10 Weissman MM, Wickramaratne P, Nomura Y, Warner V, Verdelli H, Pilowsky DJ, Grillon C, & Bruder G. (2005). *Families at high and low Risk for depression: A 3-generation study*. Archives of General Psychiatry, 62, 29-36.
- 11 Cheung A, Zuckerbrot R, Jensen P, Levitt A. (2004, October). *North American guidelines for the management of adolescent depression in primary care*. Presented at the annual meeting of the Canadian Academy of Child and Adolescent Psychiatry, Montreal.

ioral therapies (CBT) and interpersonal therapies (IPT) are effective therapies for adolescents with depression. These treatments are being delivered and examined in New York State. Studies have also documented that nonspecific supportive psychotherapy, on the other hand, is not effective in reducing depression. Delivered by trained professionals, CBT and IPT are structured clinical interventions, that target specific factors associated with depressive thinking or behaviors. For example, active problem solving, social skills development, activity scheduling, and self-monitoring are often targeted and taught in these structured treatments. Nonspecific supportive psychotherapies, on the other hand, are unstructured “talking” therapies, often characterized by supportive listening, play or other nondirective activities primarily designed to provide emotional “support” to the individual.

For pre-pubertal children with depression, no long-term studies have been conducted to identify the most effective therapy. Similarly, there are no controlled trials of treatments for preschool depression, even though it has been found to exist in this population of children. Studies are needed to address these questions.

The use of pharmacologic treatments for children and adolescents has been studied with increasing rigor in recent years. It is clear that, unlike adults with acute depression, the older antidepressants (e.g., tricyclic antidepressants) do not work well for childhood depression. Newer antidepressant medications (e.g., SSRIs [selective serotonin re-uptake inhibitors]) have been examined over the past ten to 15 years and increases in their use have also been documented.¹² In addition to psychiatrists, many nonpsychiatric physicians (primary care physicians)

have been prescribing these medications for depressed adolescents. A national study examining rates of antidepressant use and suicide by geographic regions documented that as use of antidepressants for depression increased, there was a concomitant decrease in the number of teen suicide deaths.¹³

Recently the results of a major clinical trial on treatment of adolescent depression were released.¹⁴ In this ten-site clinical trial of adolescents with moderate to severe depression, which compared SSRIs, psychosocial treatments, their combination and placebo, short-term outcomes (at 12 weeks) demonstrated reductions in depressive symptoms associated with the use of SSRIs. Longer-term outcomes have not yet been published.

Concerns have recently emerged about both the safety and effectiveness of antidepressant medications with children and adolescents. On October 15, 2004, the Food and Drug Administration (FDA) announced that it was requiring a “black box” warning to the health professional labeling of all antidepressant medications regarding their use with children and adolescents.

After considering the large amount of information and controversy generated by this issue, OMH summarized the data in a clinical advisory as follows:

- ◆ Currently, fluoxetine (Prozac) is the only antidepressant “labeled,” that is approved by the FDA for use in pediatric depression (i.e., children and adolescents). The prescribing of all other antidepressants in children and adolescents for any use is categorized as “off-label” use.
- ◆ To date, only fluoxetine (Prozac) has been shown to be clinically effective with adolescents who are depressed.
- ◆ An FDA review of 24 SSRI antidepressant studies involving 4,400 children and adolescents con-

Notes

- 12 Zito JM, Safer DJ, dosReis S, Gardner JF, Soeken K, Boles M, & Lynch F.(2002). *Rising prevalence of antidepressants among U.S. youths*. *Pediatrics*, 109(5), 721-727.
- 13 Olfson M, Shaffer D, Marcus SC, & Greenberg T. (2003). *Relationship between antidepressant medication treatment and suicide in adolescents*. *Archives of General Psychiatry*, 60, 978-982.
- 14 March J, Silva S, Petrycki S, Curry J, et al. (2004). *Fluoxetine, cognitive-behavioral therapy, and their combination for adolescents with depression: Treatment for Adolescents with Depression Study (TADS) randomized controlled trial*. *Journal of the American Medical Association*, 292, 807-820.

cluded that all the SSRIs (including fluoxetine) and other newer antidepressants could increase the risk of suicide-related thoughts and/or self-harming behavior in some children and adolescents. The FDA analysis identified the average medication-induced risk to be 4% compared to 2% for a placebo. This means that statistically, four children and adolescents out of 100 treated might show increased suicidality due to the antidepressant medication. The medication-induced risk is greater when starting or adjusting the dose of these antidepressant medications.

- ◆ In the 24 studies reviewed involving children and adolescents taking SSRI antidepressant medications, there were no deaths. Also, none of those with increased suicidal ideation or behavior went on to commit suicide.
- ◆ New research in the treatment of adolescent depression (i.e., the Treatment of Adolescents with Depression Study) demonstrates that the combination of CBT therapy and antidepressant medication (fluoxetine) results in successful treatment (71% of adolescents who were depressed responded positively to the combination treatment compared to 35% taking a placebo).
- ◆ In spite of the “black box” warning, the FDA has not taken a position that SSRIs and other new antidepressants are contraindicated in children and adolescents. Therefore, six medications (citalopram [Celexa], escitalopram [Lexapro], fluoxetine [Prozac], fluvoxamine [Luvox], paroxetine [Paxil], and sertraline [Zoloft]; three others, including bupropion (Wellbutrin), mirtazapine (Remeron), and venlafaxine (Effexor); and MAO inhibitors and tricyclic antidepressants can continue to be

prescribed for children and adolescents if rational prescribing principles are followed.

The full text of this advisory can be found in Appendix 6 and on the OMH Web site (<http://www.omh.state.ny.us/omhweb/advisories/programltr.htm>). It includes a series of recommendations to assist practitioners, clinicians, and ultimately parents or guardians in making sound decisions. These recommendations are consistent with OMH’s continued support for the use of evidence based treatments for children and adolescents with serious emotional disturbance.

Prevention

Research on the prevention of child and adolescent depression has focused on treatment of maternal depression as a major risk factor for childhood depression and on the development of school-based programs specifically aimed at reducing the risk for depression. Interventions that target maternal depression have found changes in cognitive development and behavioral problems among children; longer-term studies are still needed to determine the direct effects on children, although early results are promising.¹⁵ School-based prevention programs for youth at risk of developing depression have demonstrated successful outcomes in preventing the onset of full-blown depression.¹⁶

Because anxiety often precedes depression, especially among girls, and because effective CBT and pharmacological treatments for anxiety disorders exist, there is a strong possibility that treatment of anxiety problems in children or adolescents, including trauma-relat-

Notes

- 15 Miranda J, Duan N, Sherbourne C, Schoenbaum M, Lagomasino I, Jackson-Triche M, & Wells KB. (2003). *Improving care for minorities: Can quality improvement interventions improve care and outcomes for depressed minorities? Results of a randomized, controlled trial.* *Health Services Research*, 38(2), 613-630.
- 16 Clarke GN, Hornbrook M, Lynch F, Polen M, Gale J, Beardslee W, et al. (2001). *A randomized trial of a group cognitive intervention for preventing depression in adolescent offspring of depressed parents.* *Archives of General Psychiatry*, 58, 1127-1134.

ed symptoms, may prevent the development of depression.

Finally, there is emerging support for the value of psychoeducational family programs for families of children with a range of psychiatric problems, including depression. These educational programs—often co-taught by parents and professionals—are designed to increase awareness and knowledge about effective identification, early intervention, and treatment for children and adolescents with or at risk of depression. Family members are taught to identify the symptoms and to recognize early warning signs that may suggest a predisposition to anxiety or depression. They are also taught how to access information about mood disorders, and are provided with information about stress reduction, medication, and medication side effects. The effects of various stressors in a child's life are also examined in the context of the child's major environments such as school, home, and community. Participants are able to network with other parents to discuss common issues such as early identification, parenting strategies, and working with the school system.

Lack of Treatment and Its Consequences

Untreated, the consequences of major depression in children and adolescents can be devastating for both the child and for his/her family. While the most serious consequence of untreated depression may be suicide, there are other serious developmental, personal, and social consequences that may result. These consequences can affect relationships with family members, peers, school success, work productivity, and adult development. Clearly recognition, identification, and treatment of depression in children and adolescents can have profound effects on the life course.

Approximately 90% of teenagers who die by suicide suffer from a treatable mental illness. For more than a decade, Columbia University has worked to perfect a reliable and easy screening program for suicide risk and other mental disorders. The resulting program, Teen-Screen®, has been implemented in 41 states nationwide. The Teen-Screen® Program offers evidence-based adolescent suicide and mental health screening programs to government and mental health agencies, non-profit organizations, schools, physicians, and drop-in clinics. At this time, consultation, training and implementation assistance are offered free of charge. More information about the Teen-Screen® Program is available on the Web at <http://www.teenscreen.org/>.

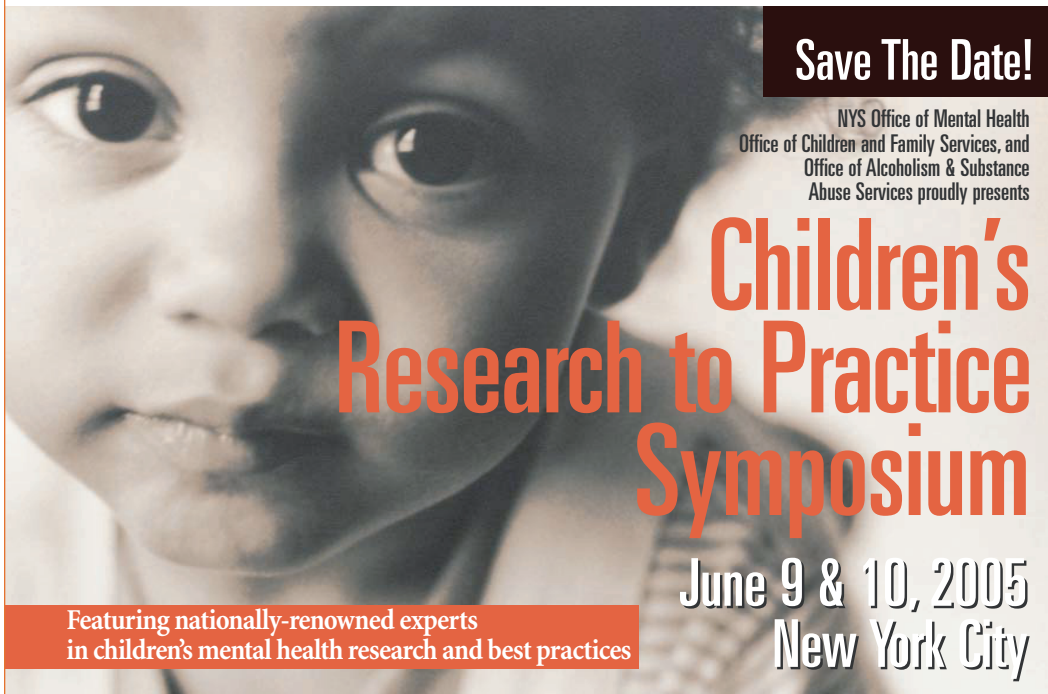
Future Directions

OMH is committed to providing a comprehensive range of services for children and adolescents experiencing mood disorders, as well as support for their families and caretakers. To launch an effective strategy to prevent the onset, recurrence, or sequelae of mood disorders, we will implement a set of strategies with targeted dissemination objectives, which will improve the identification, treatment, and prevention of child and adolescent depression.

OMH will focus its efforts on promoting a statewide response by targeting the following activities:

- ◆ A public awareness campaign to improve recognition of the early indicators for mental disorders in children
- ◆ Promotion of suicide awareness, screening, and referral/treatment services in schools and communities to identify children and adolescents at risk

Figure 6.1

Announcement of Upcoming Children's Research to Practice Symposium


Save The Date!

NYS Office of Mental Health
Office of Children and Family Services, and
Office of Alcoholism & Substance
Abuse Services proudly presents

Children's Research to Practice Symposium

June 9 & 10, 2005
New York City

Featuring nationally-renowned experts
in children's mental health research and best practices

- ◆ Tools and training for front-line clinical staff in hospital and outpatient clinic systems to improve recognition of trauma, anxiety, and depression among children and adolescents and to improve delivery of effective, evidence-based psychosocial and pharmacologic treatments for affected youth
- ◆ Dissemination of the Guidelines for Treatment of Adolescent Depression (referenced earlier in this chapter) to primary care providers statewide
- ◆ Promotion of family psychoeducation and support services to assist families in recognizing early indicators of psychiatric problems, to encourage seeking evidence-based services, and to promote supportive services family to family
- ◆ Implementation of tracking and monitoring systems including specific measurable and timely outcomes; use of Standardized assessment tools for diagnosing and tracking outcomes
- ◆ Encouragement to programs and clinics implementing the monitoring of these programs to work as collaborative learning partners

In June 2005 OMH and the State Offices of Alcoholism and Substance Abuse Services (OASAS), and Children and Family Services (OCFS), will be co-sponsoring the Children's Research to Practice Symposium. The symposium will include interdisciplinary sharing of the latest findings in neuropsychiatry, major treatment trials and services research in children's mental health. Additional information about the symposium is available on the OMH Web site at: http://www.omh.state.ny.us/omhweb/child_symposium/.

Additional information about children and depression research is included in Appendix 7.