



Depression and Suicide in Children and Adolescents (Excerpt from Chapter 3 - Children and Mental Health)

In children and adolescents, the most frequently diagnosed mood disorders are major depressive disorder, dysthymic disorder, and bipolar disorder. Because mood disorders such as depression substantially increase the risk of suicide, suicidal behavior is a matter of serious concern for clinicians who deal with the mental health problems of children and adolescents. The incidence of suicide attempts reaches a peak during the midadolescent years, and mortality from suicide, which increases steadily through the teens, is the third leading cause of death at that age (CDC, 1999; Hoyert et al., 1999). Although suicide cannot be defined as a mental disorder, the various risk factors—especially the presence of mood disorders—that predispose young people to such behavior are given special emphasis in this section, as is a discussion of the effectiveness of various forms of treatment. The evidence is strong that over 90 percent of children and adolescents who commit suicide have a mental disorder, as explained later in this section.

Major depressive disorder is a serious condition characterized by one or more major depressive episodes. In children and adolescents, an episode lasts on average from 7 to 9 months (Birmaher et al., 1996a, 1996b) and has many clinical features similar to those in adults. Depressed children are sad, they lose interest in activities that used to please them, and they criticize themselves and feel that others criticize them. They feel unloved, pessimistic, or even hopeless about the future; they think that life is not worth living, and thoughts of suicide may be present. Depressed children and adolescents are often irritable, and their irritability may lead to aggressive behavior. They are indecisive, have problems concentrating, and may lack energy or motivation; they may neglect their appearance and hygiene; and their normal sleep patterns are disturbed (DSM-IV).

Despite some similarities, childhood depression differs in important ways from adult depression. Psychotic features do not occur as often in depressed children and adolescents, and when they occur, auditory hallucinations are more common than delusions (Ryan et al., 1987; Birmaher et al., 1996a, 1996b). Associated anxiety symptoms, such as fears of separation or reluctance to meet people, and somatic symptoms, such as general aches and pains, stomachaches, and headaches, are more common in depressed children and adolescents than in adults with depression (Kolvin et al., 1991; Birmaher et al., 1996a, 1996b).

Dysthymic disorder is a mood disorder like major depressive disorder, but it has fewer symptoms and is more chronic. Because of its persistent nature, the disorder is especially likely to interfere with normal adjustment. The onset of dysthymic disorder (also called dysthymia) is usually in childhood or adolescence (Akiskal, 1983; Klein et al., 1997). The child or adolescent is depressed for most of the day, on most days, and symptoms continue for several years. The average duration of a dysthymic period in children and adolescents is about 4 years (Kovacs et al., 1997a). Sometimes children are depressed for so long that they do not recognize their mood as out of the ordinary and thus may not complain of feeling depressed. Seventy percent of children and adolescents with dysthymia eventually experience an episode of major depression⁶ (Kovacs et al., 1994). When a combination of major depression and dysthymia occurs, the condition is referred to as double depression.

Bipolar disorder is a mood disorder in which episodes of mania alternate with episodes of depression. Frequently, the condition begins in adolescence. The first manifestation of bipolar illness is usually a depressive episode. The first manic features may not occur for months or even years thereafter, or may occur either during the first depressive illness or later, after a symptom-free period (Strober et al., 1995).

The clinical problems of mania are very different from those of depression. Adolescents with mania or hypomania feel energetic, confident, and special; they usually have difficulty sleeping but do not tire; and they talk a great deal, often speaking very rapidly or loudly. They may complain that their thoughts are racing. They may do schoolwork quickly and creatively but in a disorganized, chaotic fashion. When manic, adolescents may have exaggerated or even delusional ideas about their capabilities and importance, may become

overconfident, and may be “fresh” and uninhibited with others; they start numerous projects that they do not finish and may engage in reckless or risky behavior, such as fast driving or unsafe sex. Sexual preoccupations are increased and may be associated with promiscuous behavior.

Reactive depression, also known as adjustment disorder with depressed mood, is the most common form of mood problem in children and adolescents. In children suffering from reactive depression, depressed feelings are short-lived and usually occur in response to some adverse experience, such as a rejection, a slight, a letdown, or a loss. In contrast, children may feel sad or lethargic and appear preoccupied for periods as short as a few hours or as long as 2 weeks. However, mood improves with a change in activity or an interesting or pleasant event. These transient mood swings in reaction to minor environmental adversities are not regarded as a form of mental disorder.

Conditions Associated With Depression

Roughly two-thirds of children and adolescents with major depressive disorder also have another mental disorder (Angold & Costello, 1993; Anderson & McGee, 1994). The most commonly associated disorders are dysthymia (see above), an anxiety disorder, a disruptive or antisocial disorder, or a substance abuse disorder. When more than one diagnosis is present, depression is more likely to begin after the onset of the accompanying disorder, except when that disorder is substance abuse (Biederman et al., 1995; Kessler & Walters, 1998). This suggests that, in some cases, depression may arise in response to the associated disorder. In other instances, such as the co-occurrence of conduct disorder and depression, the two may arise independently in response to inadequate maternal supervision and control, raising the possibility that parental behavior may be a risk factor for both conditions (Downey & Coyne, 1990; Rutter & Sandberg, 1992; Harrington, 1994).

Prevalence

Major Depression

Population studies show that at any one time between 10 and 15 percent of the child and adolescent population has some symptoms of depression (Smucker et al., 1986). The prevalence of the full-fledged diagnosis of major depression among all children ages 9 to 17 has been estimated at 5 percent (Shaffer et al., 1996c). Estimates of 1-year prevalence in children range from 0.4 and 2.5

percent and in adolescents, considerably higher (in some studies, as high as 8.3 percent) (Anderson & McGee, 1994; Lewinsohn et al., 1994a; Garrison et al., 1997; Kessler & Walters, 1998). For purposes of comparison, 1-year prevalence in adults is about 5.3 percent (Murphy et al., 1988; Rorsman et al., 1990; Regier et al., 1993).

Dysthymic Disorder

The prevalence of dysthymic disorder in adolescents has been estimated at around 3 percent (Garrison et al., 1997). Before puberty, major depressive disorder and dysthymic disorder are equally common in boys and girls (Rutter, 1986). But after age 15, depression is twice as common in girls and women as in boys and men (Weissman & Klerman, 1977; McGee et al., 1990; Linehan et al., 1993).

Suicide

In 1996, the age-specific mortality rate from suicide was 1.6 per 100,000 for 10- to 14-year-olds, 9.5 per 100,000 for 15- to 19-year-olds (i.e., about six times higher than in the younger age group; *in this age group, boys are about four times as likely to commit suicide than are girls*, while girls are twice as likely to attempt suicide), compared with 13.6 per 100,000 for 20- to 24-year-olds (CDC, 1999). Hispanic high school students are more likely than other students to attempt suicide (CDC, 1998). There have been some notable changes in these rates over the past few decades: since the early 1960s, the reported suicide rate among 15- to 19-year-old males increased threefold but remained stable among females in that age group and among 10- to 14-year-olds (National Center for Health Statistics, 1998); the rate among white adolescent males reached a peak in the late 1980s (18.0 per 100,000 in 1986) and has since declined somewhat (16.0 per 100,000 in 1997), whereas among African American male adolescents, the rate increased substantially in the same period (from 7.1 per 100,000 in 1986 to 11.4 per 100,000 in 1997 (CDC, 1998). From 1979 to 1992, the Native American male adolescent and young adult suicide rate in Indian Health Service Areas was the highest in the Nation, with a suicide rate of 62.0 per 100,000 (Wallace et al., 1996).

It has been proposed that the rise in suicidal behavior among teenage boys results from increased availability of firearms (Boyd, 1983; Boyd & Moscicki, 1986; Brent et al., 1987; Brent et al., 1991) and increased substance abuse in the youth population (Shaffer et al., 1996c; Birckmayer & Hemenway, 1999). However,

although the rate of suicide by firearms increased more than suicide by other methods (Boyd, 1983; Boyd & Moscicki, 1986; Brent et al., 1987), suicide rates also increased markedly in many other countries in Europe, in Australia, and in New Zealand, where suicide by firearms is rare.

Course and Natural History

Most children with depression experience a recurrence. Twenty to 40 percent of depressed children relapse within 2 years, and 70 percent will do so by adulthood (Garber et al., 1988; Velez et al., 1989; Harrington et al., 1990; Fleming et al., 1993; Kovacs et al., 1994; Lewinsohn et al., 1994a; Garrison et al., 1997).

The reasons for relapse are not known, but there is some evidence that experiencing a depression leaves behind psychological “scars” that may increase vulnerability throughout early life (see below).

The age of first onset of depression appears to play a role in its course. Children who first become depressed before puberty are at risk for some form of mental disorder in adulthood, while teenagers who first become depressed after puberty are most likely to experience another episode of depression (Harrington et al., 1990; McCracken, 1992a; Lewinsohn et al., 1994a, 1994b; Rao et al., 1995). These differences in outcome suggest that different mechanisms may lead to superficially similar but inherently different clinical conditions. Factors that worsen the prognosis for depressed children and adolescents include depression occurring in the context of conduct disorder (Harrington et al., 1990; Asarnow et al., 1994) and living in conflict-ridden families (Asarnow et al., 1994). Children and particularly adolescents who suffer from depression are at much greater risk of committing suicide than are children without depression (Shaffer et al., 1996b).

The prognosis for dysthymia (Klein et al., 1997a) is unfavorable, with most patients continuing to feel depressed and to have social difficulties even after they have apparently recovered. The prognosis for double depressives (major depressive disorder plus dysthymia) is worse than that for either condition alone (Kovacs et al., 1994).

Twenty to 40 percent of adolescents with depression eventually develop bipolar disorder. Factors that predict later bipolar disorder include young age at the time of the first depressive episode, psychotic features in the initial depression, a family history of bipolar illness, and symptoms of hypomania developing during treatment with antidepressant drugs (Garber et al., 1988; Strober et al., 1993).

Causes

The precise causes of depression are not known. Extensive research on adults with depression generally points to both biological and psychosocial factors (Kendler, 1995). However, there has been substantially less research on the causes of depression in children and adolescents. Further discussion of the risk factors for depression can be found in Chapter 4, as well as the preceding Overview of Risk Factors and Prevention section.

Family and Genetic Factors

Much of the research on children and adolescents with depression has been conducted with those who attend mental health clinics and with patients who tend to have the more severe and recurrent forms of depression, and thus they may not be representative of all children and adolescents with depression. With this limitation, research has shown that between 20 and 50 percent of depressed children and adolescents have a family history of depression (Puig-Antich et al., 1989; Todd et al., 1993; Williamson et al., 1995; Kovacs, 1997b). Family research has found that children of depressed parents are more than three times as likely as children with nondepressed parents to experience a depressive disorder (see Birmaher et al., 1996a, 1996b for a review). They also are more vulnerable to other mental and somatic disorders (Downey & Coyne, 1990). Conversely, estimates of the proportion of depressed parents who have a depressed child or adolescent vary from approximately one in six to just under a half (Hammen et al., 1990). It is not clear whether the relationship between parent and childhood depression derives from genetic factors, or whether depressed parents create an environment that increases the likelihood of a mental disorder developing in their children (see below).

Gender Differences

One reason advanced to explain the greater prevalence of depression in adolescent girls (see above) is that they are more socially oriented, more dependent on positive social relationships, and more vulnerable to losses of social relationships than are boys (Allgood-Merten et al., 1990). This would increase their vulnerability to the interpersonal stresses that are common in teenagers. There is also evidence that the methods girls use to cope with stress may entail less denial and more focused and repetitive thinking about the event (Nolen-Hoeksema & Girgus, 1994). The higher prevalence, therefore, could be a

result of greater vulnerability, combined with coping mechanisms different than those of boys.

Biological Factors

Some of the core symptoms of depression, such as changes in appetite and sleep patterns, are related to the functions of the hypothalamus. The hypothalamus is, in turn, closely tied to the function of the pituitary gland. Abnormalities of pituitary function, such as increased rates of circulating cortisol and hypo- or hyperthyroidism, are well established features of depression in adults (Goodwin & Jamison, 1990). However, far less research has been done in this area among children and adolescents (see Birmaher et al., 1996a, 1996b for a review). It is in the neuroendocrine area that most research has been done on child and adolescent depression (see Birmaher et al., 1996a, b). In suicidal adults dysregulation of the serotonergic system is common (Mann, 1998; Pine et al., 1995), making them typically impulsive, intense, and given to extreme reactions. However, little is known about the association between abnormal serotonin metabolism and suicidal behavior in children and adolescents.

Cognitive Factors

For over two decades there has been considerable interest in the relationship between a particular “mindset” or approach to perceiving external events and a predisposition to depression. The mindset in question is known as a pessimistic “attribution bias” (Abramson et al., 1978; Beck, 1987; Hops et al., 1990). A person with this mindset is one who readily assumes personal blame for negative events (“All the problems in the family are my fault”), who expects that one negative experience is part of a pattern of many other negative events (“Everything I do is wrong”), and who believes that a currently negative situation will endure permanently (“Nothing I do is going to make anything better”). Such pessimistic individuals take a characteristically negative view of positive events (i.e., that they are a result of someone else’s effort, that they are isolated events, and that they are unlikely to recur). Individuals with this mindset react more passively, helplessly, and ineffectively to negative events than those without a pessimistic mindset (Seligman, 1975).

There is uncertainty over whether this mindset precedes depression (and represents a permanent style of thinking as part of an individual’s personality), is a manifestation of depression that is only present when the patient is depressed, and/or is a consequence or “scar” of a previous, perhaps unnoticed, depressive

episode (Lewinsohn et al., 1981). This pessimistic mode of thinking does not occur in children under age 5, which could be one of the reasons why depression and suicide are rare in early childhood (Rholes et al., 1980; Rotenberg, 1982).

There is evidence that children and adolescents who previously have been depressed may learn, during their depression, to interpret events in this fashion. This may make them prone to react similarly to negative events experienced after recovery, which could be one of the reasons why previously depressed children and adolescents are at continuing risk for depression (Nolen-Hoeksema et al., 1993).

Perceptions of hopelessness, negative views about one's own competence, poor self-esteem, a sense of responsibility for negative events, and the immutability of these distorted attributions may contribute to the hopelessness that has been repeatedly found to be associated with suicidality (Overholser et al., 1995).

Risk Factors for Suicide and Suicidal Behavior

There is good evidence that over 90 percent of children and adolescents who commit suicide have a mental disorder before their death (Shaffer & Craft, 1999). The most common disorders that predispose to suicide are some form of mood disorder, with or without alcoholism or other substance abuse problem, and/or certain forms of anxiety disorder (Shaffer et al., 1996b). Psychological postmortem studies also show that a significant proportion of suicide victims suffered from an anxiety disorder at the time of their death, but the number of victims has been too small to yield precise odds ratios for the calculation of an effect. Although the rate of suicide is greatly increased in schizophrenia, because of its rarity, it accounts for very few suicides in the child and adolescent age group.

Controlled studies of completed suicide suggest similar risk factors for boys and girls (Shafii et al., 1985; Brent et al., 1988; Groholt et al., 1997), but with marked differences in their relative importance (Shaffer et al., 1996c).

Among girls, the most significant risk factor is the presence of major depression, which, in some studies, increases the risk of suicide 12-fold. The next most important risk factor is a previous suicide attempt, which increases the risk approximately threefold. Among boys, a previous suicide attempt is the most

potent predictor, increasing the rate over 30-fold. It is followed by depression (increasing the rate by about 12-fold), disruptive behavior (increasing the rate by twofold), and substance abuse (increasing the rate by just under twofold) (Shaffer et al., 1996c).

Stressful life events often precede a suicide and/or suicide attempt (de Wilde et al., 1992; Gould et al., 1996). As indicated earlier, these stressful life events include getting into trouble at school or with a law enforcement agency; a ruptured relationship with a boyfriend or a girlfriend; or a fight among friends.⁷ They are rarely a sufficient cause of suicide, but they can be precipitating factors in young people.

Controlled studies (Gould et al., 1996; Hollis, 1996) indicate that low levels of communication between parents and children may act as a significant risk factor. While family discord, lack of family warmth, and disturbed parent-child relationship are commonly associated with child and adolescent psychopathology (violent behavior, mood disorder, alcohol and substance abuse disorders) (Brent et al., 1994; Pfeffer et al., 1994), these factors do not play a specific role in suicide (Gould et al., 1998).

Evidence has accumulated that supports the observation that suicide can be facilitated in vulnerable teens by exposure to real or fictional accounts of suicide (Velting & Gould, 1997), including media coverage of suicide, such as intensive reporting of the suicide of a celebrity, or the fictional representation of a suicide in a popular movie or TV show. The risk is especially high in the young, and it lasts for several weeks (Gould & Shaffer, 1986; Phillips et al., 1989). The suicide of a prominent person reported on television or in the newspaper or exposure to some sympathetic fictional representation of suicide may also tip the balance and make the at-risk individual feel that suicide is a reasonable, acceptable, and in some instances even heroic, decision (Gould & Shaffer, 1986).

The phenomenon of suicide clusters is presumed to be related to imitation (Davidson, 1989). Suicide clusters nearly always involve previously disturbed young people who knew about each other's death but rarely knew the other victims personally (Gould, personal communication, 1999).

Consequences

Both major depressive disorder and dysthymic disorder are inevitably associated with personal distress, and if they last a long time or occur repeatedly, they can lead to a circumscribed life with fewer friends and sources of support, more stress, and missed educational and job opportunities (Klein et al., 1997). The psychological scars of depression include an enduring pessimistic style of interpreting events, which may increase the risk of further depressive episodes. Impairment is greater for those with dysthymic disorder than for those with major depression (Klein et al., 1997a), presumably because of the longer duration of depression in dysthymic disorder, which is also a prime risk factor for suicide. In a 10- to 15-year followup study of 73 adolescents diagnosed with major depression, 7 percent of the adolescents had committed suicide sometime later. The depressed adolescents were five times more likely to have attempted suicide as well, compared with a control group of age peers without depression (Weissman et al., 1999).

Treatment

Depression

Psychosocial Interventions

To be deemed effective and approved by the American Psychological Association, treatments for mental disorders have to meet very strict criteria. While interpersonal therapy and systemic family therapy show promise, they have not been studied sufficiently to evaluate their effectiveness by these standards. However, in a comprehensive review article (Kaslow & Thompson, 1998) that evaluated interventions for depression in children and adolescents against the American Psychological Association Task Force criteria, two forms of cognitive-behavioral therapy (CBT) were found to be “probably effective treatments,” although none of the interventions for depression were deemed, as yet, to meet the Association’s higher standard for a well-established intervention.

In studies that focused on relieving symptoms of depression in preadolescents, only one form of CBT met the criteria for a probably effective intervention. In the first study, the relative efficacy of two types of CBT—12-session group interventions based on either self-control therapy or behavior-solving therapy—were compared with a “waiting list” control group (Stark et al., 1987). Children responded to both CBT interventions with fewer symptoms of depression and anxiety, whereas the waiting list group exhibited minimal change. Because

improvement was greatest with self-control therapy, this intervention was compared in a later study with a traditional counseling condition. Self-control therapy, enhanced by doubling the number of sessions, entailed social skills training, assertiveness training, relaxation training and imagery, and cognitive restructuring. Monthly family meetings were also added to both the experimental and control conditions. Children receiving self-control therapy reported fewer symptoms at 7-month followup (Stark et al., 1991).

Among the numerous studies of adolescents reviewed by Kaslow and Thomson (1998), one form of CBT—coping skills—was judged probably efficacious. This intervention, based on the “Coping with Depression” course, was developed originally in Oregon for adults by Lewinsohn and colleagues (Lewinsohn et al., 1996) and adapted by Clarke and colleagues (1992) for school-based programs to treat adolescent depression. Compared with controls on the waiting list, adolescents who received CBT had lower rates of depression, less self-reported depression, improvement in cognitions, and increased activity levels (Lewinsohn et al., 1990, 1996). To achieve well-established status, as defined by the American Psychological Association Task Force, the intervention has to be studied by another team of investigators—which has not as yet been done.

Pharmacological Treatment

Prior to 1996, the medications of choice for major depression in children and adolescents were the tricyclic antidepressants, a choice based on numerous studies in adults. However, 13 distinct trials in children and adolescents failed to demonstrate the efficacy of tricyclic antidepressants for younger ages. Tricyclic antidepressants also have a higher risk of toxicity than selective serotonin reuptake inhibitors (SSRIs) (Walsh et al., 1994; Kutcher, 1998). The current consensus is that tricyclic medications are not the medication of choice for depressed children and adolescents (Eisenberg, 1996; Fisher & Fisher, 1996).

Recent research indicates that young people with depressive disorders may respond more favorably to SSRIs than to tricyclic antidepressants. The first SSRI tested in children and adolescents was fluoxetine. In a study of 96 outpatients over 8 weeks, 56 percent receiving fluoxetine and 33 percent receiving placebo were “much” or “very much” improved on the Clinical Global Improvement Scale. Benefits were comparable across age groups. Complete symptom remission occurred for 31 percent of fluoxetine-treated patients compared with 23 percent of placebo-treated patients (Emslie et al., 1997). A recent open trial of fluoxetine for adolescents hospitalized for treatment of major depression

found it to decrease depression scores more effectively than imipramine, a tricyclic antidepressant (Strober et al., 1999), with the further advantage that fluoxetine was well tolerated.

The safety of a second SSRI, paroxetine, was demonstrated in a multicenter double-blind placebo-controlled trial. Paroxetine was compared with imipramine and placebo in 275 adolescents who met the DSM-IV criteria for major depression. Preliminary results indicate that, mostly because of side effects, one-third of imipramine patients withdrew from the study, a proportion significantly higher than that for paroxetine (10 percent) and placebo (7 percent) (Wagner et al., 1998). One of the co-investigators of this study noted that paroxetine's efficacy was superior to that of imipramine and placebo on the Clinical Global Improvement Scale (Graham Emslie, personal communication, October 1998). However, final conclusions about the benefit of this second SSRI must await publication of the outcomes of this multicenter study.

In summary, psychosocial interventions for depressed children and adolescents indicate great promise, with several types of cognitive-behavioral therapy for the child or adolescent leading the way. With respect to pharmacotherapy, new studies attest to the safety and efficacy of two SSRIs. These promising findings are being extended in the recently begun NIMH-funded Treatment of Adolescents with Depression study.

Bipolar Disorder

Pharmacological Treatment

The treatment of bipolar disorder entails treating symptoms of both depression and mania. For decades, lithium has been the well-researched mainstay treatment for mania in adults. Mania in bipolar disorder of children is also treated with lithium, although the relevant research on children lags behind that on adults. Only in recent years have researchers begun to study lithium in children and adolescents, with good clinical response. Open trials of lithium were conducted in the late 1980s (Varanka et al., 1988; Strober et al., 1990). More recently, lithium proved to be more effective than placebo in treating adolescents who were bipolar and substance dependent (Geller et al., 1998).

Children experience the same safety problems with lithium as do adults: toxicity and impairment of renal and thyroid functioning (Geller & Luby, 1997). Lithium is

therefore not recommended for families unable to keep regular appointments that would ensure monitoring of serum lithium levels and of adverse events. Patients who discontinue taking the drug have a high relapse rate (Strober et al., 1990).

As yet, there are no controlled studies on a number of other psychotropic agents also used clinically in children and adolescents with bipolar disorder, including valproate, carbamazepine, methylphenidate, and low-dose chlorpromazine (Campbell & Cueva, 1995; Geller & Luby, 1997).

6 Major depression refers to conditions marked by a major depressive episode, such as major depressive disorder, bipolar disorder, and related conditions. The word "major" refers to the number of symptoms. See Chapter 4 for DSM-IV diagnostic criteria.

7 The relationship between sexual orientation, depression, and suicidal thoughts and behavior is not well understood. Several studies suggest a link (Faullener & Cranston, 1998; Garofolo et al., 1998; Garofolo et al., 1999).

<http://www.surgeongeneral.gov/library/mentalhealth/chapter3/sec5.html>