Treatments for Adolescent Depression
Theory and Practice

Editor

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OXFORD UNIVERSITY PRESS
Until recent years, depression in adolescents had received little research attention. Indeed, there was a prevailing assumption that depressive disorders rarely occurred in children and adolescents. This view stems from the theoretical notion that children and adolescents are too cognitively immature to be depressed, and the concept that psychopathological manifestations and difficulties represent normal developmental processes of childhood and adolescence (Rie, 1966). Nevertheless, a handful of investigators of depression in adolescence during the late 1970s and early 1980s had not only established the presence of depression at this developmental stage, but their work had also delineated some of the psychosocial impairments associated with depression. The late 1970s was also associated with an increasing recognition that children and adolescents exhibit the essential features of adult depression. This change in viewpoints is reflected in the use of the same adult criteria for depressive disorders in children and adolescents in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association; APA, 1980) and its subsequent revisions (DSM-III-R; APA, 1987; DSM-IV; APA, 1994).

Depressive disorders are characterized by the presence of depressed moods along with a set of additional symptoms, persisting over time, and causing disruption and impairment of function. In DSM-IV (APA, 1994), depressive disorders fall under the category of major depressive disorder, dysthymic disorder, and depressive disorder not otherwise specified.

Major depressive disorder (MDD) denotes a severe, acute form of depressive disorder (DSM-IV; APA, 1994). The disorder is diagnosed when the adolescent has experienced at least five of the following nine symptoms nearly every day for at least a two-week period at a level that represents a change from previous functioning: depressed mood (or can be irritable mood in children and adolescents); markedly diminished interest or pleasure in all, or almost all activities; significant weight loss or weight gain, or decrease or increase in appetite (in children, consider failure to make expected weight gains); insomnia or hypersomnia; psychomotor agitation or retardation; fatigue or loss of energy; feelings of worthlessness or excessive or inappropriate guilt; diminished ability to think or concentrate, or indecisiveness; and recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide. At least one of the two core
symptoms, depressed mood (or irritable mood in children and adolescents) or loss of interest or pleasure must be present for the diagnosis to be made (APA, 1994).

Dysthymic disorder is a chronic, but a less severe form of depressive disorder (DSM-IV; APA, 1994). Adolescents are diagnosed with this disorder when they have had a period of at least one year in which they have shown depressed or irritable moods every day without more than two symptom-free months. In addition to irritable or depressed mood, at least two of the following symptoms must be present: poor appetite or overeating, insomnia or hypersomnia, low energy or fatigue, low self-esteem, poor concentration or difficulty making decisions, and feelings of hopelessness.

**Epidemiology**

Major depression (MDD) is one of the most frequent disorders in adolescence. The point prevalence of MDD in adolescents is about 5% (Fergusson et al., 1993; Lewinsohn et al., 1993), whereas the lifetime rate is about 10% (range from 6.8 to 24%) (Essau et al., 2000; Lewinsohn et al., 1993; Reinherz et al., 1999) (Table 1.1). Dysthymic disorder has been the focus of less investigation in adolescence. According to some studies, lifetime prevalences of dysthymic disorder have been estimated to range from 0.1 to 8% (Essau et al., 2000; Fergusson et al., 1993; Lewinsohn et al., 1993; McGee & Williams, 1988; Whitaker et al., 1990). Overall, the prevalence rates for depressive disorders among adolescents are comparable to those reported in recent epidemiological studies of adult population (e.g., Kessler et al., 1993).

Incidence rates (i.e., refer to the emergence of new cases of disorder over a specified period of time) seemed to be the highest during mid- to late adolescence. In the Oregon Adolescent Depression Project (OADP), the 1-year incidence rate for MDD was 7.14% for girls, 4.35% for boys, and 5.72% for total sample (Lewinsohn et al., 1993), whereas the incidence rate for dysthymic disorder was 0.07%. In a study by Garrison and friends (1993), the 1-year rate of dysthymic disorder was 1.7% for girls and 1.1% for boys, and 1.6% for total sample (Lewinsohn et al., 1993; McGee & Williams, 1988; Whitaker et al., 1990). Overall, the prevalence rates for depressive disorders among adolescents are comparable to those reported in recent epidemiological studies of adult population (e.g., Kessler et al., 1993).

In addition to the high prevalence of MDD in adolescence, this disorder also appears to be increasing among the younger generation (Lewinsohn et al., 1993). For example, Lewinsohn et al. (1993) found the presence of an age cohort effect when comparing adolescents who were born between 1968 and 1971 with those who were born between 1972 and 1974. Specifically, by age 14, 7.2% of the more recent adolescent birth cohort had experienced a depressive episode; the rate found among adolescents in the earlier birth cohort (1993) was 4.5%. While there is no clear explanation for this finding, several factors have been proposed, including (for review, see Fombonne, 1995) changes in family life (e.g., single-parent families), which expose children and adolescents to more frequent and earlier challenges; an earlier onset of puberty; presence of negative events (e.g., parental divorce); and chronic stressors (e.g., increased educational demands) (Table 1.2).

**Gender:** About twice as many girls than boys met the diagnostic criteria for MDD sometimes in their lives (Anderson et al., 1987; Cohen et al., 1993; Essau et al., 2000; Lewinsohn et al., 1993; Reinherz et al., 1993). This gender difference seems to emerge around puberty (Cohen et al., 1993; Essau et al., 2000; Petersen et al., 1991), and then
Cyranowski et al. (2000) presented the so-called model of 'correlated consequences' to... 

Goodyer et al. (1997) Moderate/poor friendship after the onset of depression. 

Authors Factors related to negative course 

Goodyer (2006) 

Severe impairment, having a large depressive episode before starting treatment, an early psychiatric history, Low socioeconomic status. 

Early onset of depression (below 13 years old), parents who were divorced and had multiple depressed episodes, prior comorbid diagnosis of dysthymic disorder, parental depression. 

Early age of onset from the first episode, suicidal ideation. 

Rea et al. (1995) 

Poor parental depression, early predictors of depression. 

Warner et al. (1992) 

Early onset of depression (below 13 years old), parents who were divorced and had multiple depressed episodes, prior comorbid diagnosis of dysthymic disorder. 

Beardslee et al. (1993) 

Parental depression, early onset of depression, comorbid disorders. 

Ainam et al. (1993) 

High expressed emotion. 

Factors related to a negative course and outcome of depressive disorders.
Age and Puberty: In some studies, there is a significant relationship between prevalence of MDD and age (Essau et al., 2000; Kashani et al., 1989), but not in others (Lewinsohn et al., 1993). For example, in the Isle of Wight Study, there was a tenfold increase in depression when the 10-year-old children were re-interviewed four years later (Rutter, 1986). Significantly, more postpubertal than prepubertal boys had depressed feelings, indicating that an increase in depression is linked to puberty instead of age. In the Garber et al.'s study (1997), early and late maturing girls compared to girls with a normal pubertal onset time had significantly elevated rates of MDD. In boys, the rate of MDD did not differ as a function of pubertal onset; however, early and late maturation tended to have other problems such as emotional reliance on others. In the Great Smoky Mountain study, girls showed an increase of depression after the age of 12, whereas in boys there was a decrease after the age of 9 years (Angold et al., 1998). Their findings showed pubertal status to better predict the emergence of female preponderance than did age. That is, girls were more likely than boys to be depressed after the transition to mid-puberty (Tanner stage III and above). Boys, by contrast, had higher rates of depression than girls before Tanner Stage III. Among adolescents in the 5th through 8th grades, Hayward et al. (1999) found pubertal status as a better predictor of depressive symptoms than chronological age in Caucasian, but not African-American or Hispanic girls. It was argued that girls in these two ethnic groups attach different meaning of weight-related bodily changes. That is, the consequence of increasing body fat during puberty is interpreted as less negative in African-American than in Caucasian girls.

Depression and Culture: There seems to be a general agreement on the core symptoms of depression in adolescents across different cultural communities. However, the specific meaning and manifestations of such symptoms seem to vary from one culture to another (Tseng & Streltzer, 1997). This has posed serious problems in terms of cross-cultural comparisons both in diagnosis and treatment of depression. Practically, it is difficult to use the same diagnostic criteria for calculating the prevalence rate for cross-cultural comparison. With a better understanding of how these basic mental health problems are conceptualized and manifested in different cultures, a common strategy might be derived at how to conduct cross-cultural comparison of these mental health conditions.

The world has become smaller and different cultural communities are increasingly interdependent with each other. A comprehensive understanding of these common human problems is becoming necessary. Natural calamities and human catastrophes, wars, earth quakes, famine, and pandemic diseases observe no cultural boundaries. Migration and population fluxes have made cultural boundaries increasingly blur. An understanding of cross-cultural differences in these human conditions is only the first step towards mutual understanding and integration in the global village.

We would like to apply the framework of cultural psychology to our presentation of worldwide perspective of depression in adolescence. This framework postulates that human behaviour, healthy or unhealthy, is embedded within the context of culture. The manifested behaviours and subjective experiences of psychological processes are interpreted within the meaningful framework that is made of the shared values, beliefs, and practices of the community (Geertz, 1973). In other words, each culture produces its own symptomatology for the manifestation of and the 'explanation model' with which to explain mental health problems that might be common to human beings (Kleinman, 1986). Within each cultural community, these shared meanings and manifestations give rise to the culture's unique 'idiom of distress' (Nichter, 1981) whereby the problem is communicated within the community. Finally, each cultural community would have its own 'tried and true' means of managing its mental health problems, however they might be labeled.

The relationship between stress, anxiety, and depression is well established. Across different cultural communities not only the manifestations of depression are different, the stressful conditions experienced by youth in different parts of the world are also different. The following is a list of the stress often mentioned in today's mental health literature: disintegration of traditional social support systems, cultural transition and cultural clashes brought by voluntary and involuntary migrations, violence in daily lives, socially oriented pressures, and pressure for individual success. These stressors are not evenly distributed across nations in the world: within different geopolitical regions, the specific configurations of historical, economic, and political situations formulated different challenges of life. Within these different cultures, such environmental challenges would be understood in ways that are consistent with the prevailing beliefs and values, and reacted to with the commonly acceptable behavioural strategies. The same stressor might be understood with different meanings and managed with different strategies.

Many studies have been conducted in the bio-medical models of depression. These studies have yielded evidence to support the notion that adolescence is a period when the individual is biologically predisposed to emotional volatility. These conditions would pre-dispose the adolescent to depression. Psychologically, this is a period of time when one is developing one's individuated identity and how this individuated identity might integrate into the environment to which one belongs (Erikson, 1968). These critical developmental tasks might be conceptualized and experienced differently in different cultures, as reflected in the different 'coming of age' rituals reported in anthropological studies (Geertz, 1973).

Age of onset

The first depressive episode is generally late childhood or early adolescence, with the mean age of onset being 15 years (Essau & Petermann, 1997; Giaconia et al., 1994; Lewinsohn et al., 1994). An earlier age of onset has been reported among adolescents in clinical than in epidemiological settings (Kovacs et al., 1984), and in children of depressed compared to children of non-depressed parents (Weissman et al., 1984).

An early onset was also associated with a female gender (Giaconia et al., 1994; Lewinsohn et al., 1994; Reinherz et al., 1993), with females reporting the onset of their depression at an average of about two years earlier than males (Giaconia et al., 1994).

The ages of onset for dysthymic disorder have been reported to range from 6 to 13 years (Kovacs et al., 1984).

The age at which the adolescents experienced their first depressive episode seemed to be important for the course and outcome of the depression. As reported by several authors, early onset of MDD was also associated with suicide (Harrington et al., 1990),
more depressive episodes, a more protracted course of the disorder (Kovacs et al., 1984), and psychosocial impairment including interpersonal problems and having high emotional and behavioural problems. The reason for this association is unclear, although an early onset of MDD may represent severe forms of this disorder (Weissman, 1988). It could also be that adolescents with an early onset had more time to experience additional episodes, and that the younger they become depressed, the less likely that they have the coping resources to ameliorate depression. Thus, their emotional and intellectual immaturity could prolong the course of depression (Kovacs et al., 1984). Yet, others argued that early onset may signal a vulnerability that could be genetically, perinatally, and/or constitutionally determined and/or precipitated by environmental adversity (Kovacs et al., 1984). Regardless of the validity of these explanations, an early onset of depression may signal the beginning of multiple occurrences of major depressive episodes, and not simply a single episode with little developmental significance (Giaconia et al., 1994). Thus, previous assumption that the presence of MDD in adolescents was a mere reflection of transient difficulties is no longer valid (Kutcher & Marton, 1989).

**Comorbidity**

**Frequency and pattern of comorbidity**

MDD shows substantial comorbidity with many psychiatric disorders, especially anxiety, eating, and conduct disorders. Comorbidity is so common that it is regarded as the rule rather than the exception (Nottelmann & Jensen, 1999). As reported by Anderson and colleagues (1987), about 60% of children and adolescents with a diagnosable condition have two or more additional disorders. After reviewing six community studies, Angold and Costello (1993) concluded that the presence of depression in children and adolescents increased the probability for another disorder by at least 20 times. In a study by Essau et al. (1999), 42.2% of all the depressed adolescents had MDD only; 40.1% had one additional, and 19.9% had at least two other disorders.

In almost all studies, the most common comorbidity is with anxiety disorders, followed by conduct disorder, and substance use disorders. Specifically, 25–75% of the depressed cases had anxiety disorders, 21–50% had comorbid conduct disorder, and about 25% had comorbid alcohol and drug abuse (Cohen et al., 1993; Goodyer & Cooper, 1993; Kaslani et al., 1987). For most depressed cases with a comorbid anxiety disorder, the anxiety preceded the onset of MDD (Kovacs et al., 1989; Reinhertz et al., 1989; Rohde et al., 1991). In a recent study by Essau (2003), 72% of the adolescents with both anxiety and depression had anxiety before that of depression, 12% had depression before anxiety, and 16% reported the onset of these disorders within the same year. Within the anxiety disorders, half of those with agoraphobia, anxiety NOS (not otherwise specified), and generalized anxiety disorder first had these disorders before MDD. All of those with social and specific phobia first had these two subtypes of anxiety disorders before depression. About half of those with panic disorder and depression experienced the onset of these disorders within the same year.

The frequent comorbidity of depression and anxiety has led to the development of two broad models. One model proposed that depression causes anxiety, and vice versa. The model is based on comparing the age of onset of both depression and anxiety. Another model posits that common or shared aetiological processes account for the comorbidity between anxiety and depression. Specifically, depression and anxiety are thought to be manifestations of the same underlying processes (Andrews, 1996; Tyrer, 2001). The tripartite model (Clark & Watson, 1991) has also been influential in explaining the comorbidity between depression and anxiety disorders. According to this model, depression and anxiety have both shared and unique factors. The shared factor is the presence of high level of negative affectivity. Unique factors include the presence of low level of positive affectivity in depression, and the presence of high level of physiological arousal in anxiety.

There seem to be gender differences in the type of comorbid disorders with MDD. Depression is more frequently comorbid with anxiety disorders in girls than in boys. By contrast, depression is comorbid more frequently with antisocial behaviour and conduct disorder in boys than in girls (McCree & Williams, 1988). MDD also comorbid frequently with alcohol use disorder (Rohde et al., 1996), and among those with both disorders, 58.1% of them reported the occurrence of depression before that of alcohol (Rohde et al., 1996). Similar finding has been reported by Hovens et al. (1994), in that 53% of the adolescents with dysthymia and alcohol use disorders reported dysthymia preceding alcohol use disorder.

**Impact of comorbidity**

Comorbidity of depression and psychiatric disorders is of significance to health services, health care providers, adolescents, and their family members both because of its frequency and its negative impact. The presence of comorbidity has been found to be associated with a greater number of past depression episodes (Rohde et al., 1991) and with more impairment and distress (Essau et al., 1999). In the OADP cohort, adolescents with MDD only compared to depressed adolescents with another mental disorder were much more likely to have received treatment, showed poor global functioning, to have elevated rate of suicide attempts, and to show evidence of academic problems (Lewinsohn et al., 1994). However, the impact of comorbidity seemed to be affected by gender. Specifically, males who had depression only had very low probability of being in treatment. The presence of a comorbid disorder increased treatment especially if the boy had a substance use disorder. In girls, those with depression only were more likely, whereas those who had a comorbid disruptive behaviour disorder were less likely to receive treatment. The highest use of mental health services was observed in depressed adolescents with substance use disorders. Depression also seemed to predict escalation in adolescent drug use (Henry et al., 1993) and correlates positively with severity of drug use (Riggs et al., 1995).

In Harrington et al.'s study (1990), the depressed adolescents with conduct disorder were more impaired in all areas of functioning (social dysfunction at work, love relationships, friendship, non-intimate social contacts, negotiations, and daily coping) compared to those with depression only. The authors interpreted these findings as showing some continuity between depression that had an onset during adolescence and adult depression.
Psychosocial impairment

Adolescent depression has been linked to psychosocial impairment across multiple domains. Adolescents with MDD have impaired social functioning and family relations, decreased self-esteem, and low academic achievement (Geller et al., 2001; Giacoma et al., 2001; Rao et al., 1995; Reinherz et al., 1999). Increased dysfunction from depression was also associated with early onset and greater severity of disorder, and increased number of recurrent episodes.

According to several longitudinal studies, depressed adolescents showed impaired psychosocial functioning at follow-up investigations (Fleming et al., 1993; Harrington et al., 1990; Puig-Antich et al., 1993). Data from the Ontario Child Health Study showed that about one-quarter of the depressed adolescents had problems with their family and friends, half had dropped out of school, and one-third had been involved with the police or court at a 4-year follow-up investigation (Fleming et al., 1993). Adolescent depression is also associated with school drop-out and occupational difficulties in young adulthood (Bardone et al., 1996; Fergusson & Woodward, 2002; Kessler et al., 1997). Puig-Antich et al. (1985) reported that after the depressive episodes, the formerly depressed adolescents as compared to normal controls remained significantly inferior in their communication skills with mothers, tension in relationship with fathers, and being teased by peers. These findings seem to suggest that some social deficits related to adolescent depression may be a reflection of enduring characteristics of adolescents who are prone to be depressed. Depression during adolescence also predicts early marriage and marital distress in young adulthood (Gotlib et al., 1998), and that they have an earlier transition to parenthood (Bardone et al., 1996). This finding is of great concern due to the association between parental and offspring depression (Beardslee et al., 1998). Lewinsohn et al. (2003) examined psychosocial functioning of young adults who have experienced and recovered from MDD during adolescence. In unadjusted analyses, young adults who had experienced depressive episodes during adolescence reported being impaired in various domains of psychosocial functioning such as impairment in occupational performance, interpersonal functioning, quality of life, and physical well-being. However, when the specificity of these associations was examined, only reduced life satisfaction was associated with adolescent depression. This finding was interpreted as showing that having experienced depression in adolescence tended to be associated with subsequent and enduring reductions in life satisfaction.

Depressed adolescents with comorbid disorders seemed to have the most impaired psychosocial functioning. As reported by Fombonne et al. (2001), among individuals with childhood depression, those with comorbid conduct disorder had higher rates of suicide attempt, criminal offences, and more pervasive social dysfunction in adulthood. In Rao et al.'s study (1995), depressed adolescents with a recurrent course, compared to those with no disorders, were significantly impaired in the overall degree of functioning (based on the GAF Scale), and in relationship with friends, and satisfaction with life and global functioning. During a depressive episode, both the depressed adolescents with a recurrent course and the adolescents with new onset of depression had significant impairment at work, interpersonal relationships, and social/leisure activities. These findings showed substantial continuity and specificity of affective problems from adolescence to adulthood.

In addition to the high level of psychosocial impairment, depressed adolescents also reported substantial levels of suicidal ideation and attempts (Reinherz et al., 1995). As many as 17.9% of depressed adolescents reported having had concrete plan for suicide, and 9.7% even had tried to commit suicide (Essau et al., 1999). In a study by Kovacs et al. (1993), the likelihood of a suicide attempt was about four- to fivefold higher for children with a history of MDD compared with those who did not have affective disorders but other psychiatric disorders. At follow-up, 32% of the children who met the diagnosis of MDD and/or dysthymia had attempted suicide compared to 11% of those whose index diagnosis was adjustment disorder with depressed mood and 8% of those with nonaffective disorders.

Health services utilization

According to the World Health Organization Global Burden of Disease Study (Murray & Lopez, 1996), MDD is the leading disease that causes disability among the 15–44 year olds in developed countries. Given the findings that depression generally begins early in life (i.e., in childhood or adolescence), which often continues into adulthood, there is a need to focus on early intervention. However, the few studies that have examined help-seeking behaviour among depressed adolescents showed that only a small proportion of these adolescents use mental health services. The few existing studies have reported much variation in the use of mental health services for MDD, with rates ranging from 15% to 65% (Cuffe et al., 2005; Offord et al., 1987). This difference may reflect methodological differences or real cultural differences among samples, or differences in health care systems in different countries. In Lewinsohn et al.'s study (1998), 60% of the adolescents with MDD had received any mental health treatment. The most commonly used treatment was individual outpatient psychotherapy (60.1%). Inpatient treatment was rare, and was generally given to those whose depression co-occurred with substance use disorders. Mental health services utilization was significantly associated with the presence of comorbid mental disorders, a history of suicide attempt, academic problems, a non-intact family, female gender, severity of depression, and the number of previous depressive episodes. Nine percent received pharmacotherapy, mostly antidepressant (4.2%) and antianxiety (3.7%) medication. Using data from the Dunedin Multidisciplinary Health Development Study, Feenan et al. (1994) reported strong association between depression and self-medication. The most common point of entry for adolescent seeking health services are the schools (Farmer et al., 2003). In a recent study by Essau (2005), 23% of the adolescents with MDD received mental health services sometime in their lives. The majority of adolescents with depression sought mental health services treatment in the outpatient setting (62%), mostly from school psychologists. About 12% had sought treatment through other social services. The number of those who had received treatment in inpatient settings (19%) was higher than that of those with anxiety disorders. The only factor significantly associated with mental health services utilization was the presence of a past suicide attempt.
The use of mental health services seemed to influence the stability of MDD. For example, Essau (2005) reported that a high majority of the adolescents with depression at both the index and follow-up interview did not receive any mental health services. In the Lewinsohn et al.'s study (1998), adolescents who received treatment were not less likely to experience a new depressive episode at young adulthood. Their findings showed that among formerly depressed males (but not among females) previous treatment was associated with greater relapse. In two other longitudinal studies, depressed adolescents showed an increased likelihood of seeking professional help (Kashani et al., 1987), being prescribed psychotropic medication, attending psychiatric services, and being hospitalized for mental illness (Harrington et al., 1990) at a follow-up investigation.

Long-term course and outcome

Little is known about the course and outcome of MOD in adolescence. However, according to the few longitudinal studies of depressed adolescents (Anderson & McGee, 1994; Beardslee et al., 1996; Emslie et al. 1997; Fleming et al., 1993; Geller et al., 1994; Kovacs et al., 1994; Lewinsohn et al., 1994; Harrington et al., 1990; Hammen et al., 1990; Rao et al., 1995; Warner et al., 1992; Weissman et al., 1992), depression in these age groups does not reflect mild and short-lived or transient disturbances as previously thought (Rie, 1966). Depressed adolescents are not only at risk of having recurrent and/or continuing MOD in adulthood, but they have sustained impairments in various life domains such as at work, social activities, academic functioning, and interpersonal relationship (Kovacs et al., 1984; Harrington et al., 1990). These adolescents are also at an increased risk for attempted and completed suicide, anxiety disorders, and substance use disorders (Kovacs et al., 1993; Rao et al., 1995).

In considering studies on the course and outcome of depression, several indices have been used, including

1. Episode (i.e., meeting the full syndromal criteria of MDD for at least 14 days; APA, 1994),
2. Remission (i.e., period in which the adolescent is asymptomatic or has minimal symptoms independent of treatment; Emslie et al., 1997),
3. Recovery (i.e., no mental state abnormalities; Gooddyer et al., 1991),
4. Relapse (i.e., return of symptom that satisfy the full syndrome criteria for an episode that occurs during the remission period, but before recovery; Emslie et al., 1997), and
5. Recurrence (i.e., development of a new depressive episode that occur after recovery; Emslie et al., 1997).

These indices are based on depressive symptomatology such as symptom severity or the number of symptoms. Several other studies have used psychosocial outcome measures like academic performance, family relations, peer relations, drug and alcohol abuse, and suicide. The inconsistent and lack of uniform use of the indices of course and outcome make it difficult to interpret and compare findings across studies.

Duration of episodes

The mean length of major depressive episode in community samples is about 30 weeks (ranging from 23 to 36 weeks), and for dysthymic disorder 134 weeks (Lewinsohn et al., 1993); the average length of dysthymic disorder in clinical sample is about 3 years (Kovacs et al., 1984). In both epidemiological and clinical settings, between 21% and 41% of the depressed children and adolescents were still depressed after one year, and between 8% and 10% after 2 years (Kovacs et al., 1984; Lewinsohn et al., 1994; McCauley et al., 1993). In 83.5% of their subjects, the duration of MDD before the index interview was less than 2 years, and most were severely impaired (Geller et al., 1994). The results of the Sanford study indicated that one-third of the cases reported persistent MDD at follow-up. The average time to remission of MDD from the initial evaluation was 59.5 days (range 14–246 days) (Emslie et al., 1997). The mean duration of dysthymia in community study was 134 weeks (Lewinsohn et al., 1993), and in clinical study, dysthymia persisted for three years (Garber et al., 1988).

Factors associated with a longer index depressive episode include being female, greater episode severity, more dysfunctional family environment, early onset (before age 15), the presence of suicidal ideation, and having received treatment for the disorder (Lewinsohn et al., 1994). The length of depression was not affected by comorbid anxiety disorder, when depression was the primary diagnosis. However, when MDD was the secondary diagnosis and when it comorbid with anxiety and dysthymia, the MDD had a shorter duration (Kovacs et al., 1989). It was suggested that the combination of ‘double depression’ (i.e., major depression and dysthymia) and anxiety disorders may represent a ‘neurotic’, labile, or unstable depression that influence rapid recovery. In a recent study by Dunn and Goodyer (2006), depressed adolescents in the clinical setting had significantly longer index episodes than those in the community setting. Predictors of longer index episodes were severe impairment, having a longer depressive episode before starting treatment, and an early psychiatric history.

In the Sanford et al.’s study (1995), the predictors of MDD persistence was the presence of comorbid substance use, anxiety disorder, low involvement with father, poor response to mother’s discipline, and older age at interview; however, age of onset of MDD failed to predict its persistence and remission. Since older age at interview was a predictor for MDD persistence, the authors suggest the importance of considering developmental stage when assessing psychopathology. Understanding factors related to protracted length of disorder is important because the longer an episode persists the greater the risk for negative effects on healthy developmental processes (Goodyer et al., 1997).

Birmaher and his colleagues (2004) compared the course of MDD in children and adolescents. Their results showed no significant differences between children and adolescents in the duration and relapse and recurrence rates of depression. In both groups, the average index depressive episode was 17 months. Longer duration was predicted by one depressive symptoms ‘guilt’, but not by severity of depression, comorbid disorder, and parental psychiatric history. At follow-up, 85% of the children and adolescents recovered from their depression, and 4% reported having had at least one recurrence after recovery. Factors that
predicted a lower rate of recovery were child’s history of MDD and father MDD. Increased risks of recurrence were predicted by father’s MDD and being female, whereas having mothers with behavioural disorders were significantly related to higher recovery rate.

**Recovery**

The rates of recovery vary tremendously across studies, partially due to differences in the definition of recovery and the length of follow-up. In Garber et al.’s study (1988), 64% of the depressed adolescents had at least one major depressive episode at follow-up; 56% even had more than one episode. About 40% of the children developed a subsequent depression and none had recovered more than 2 years before experiencing their first remission (Kovacs et al., 1989). Within 5 years of entering adulthood, 40% had a depressive episode (Harrington et al., 1990). Emslie et al. (1997) similarly found that almost all subjects (98%) recovered with one year of initial evaluation, although there was also a high rate of recurrence. Among those with recurrence, 47.2% had it within a year of follow-up and 69.4% by 2 years.

In Lewinsohn et al.’s study (1994), 336 of the 362 adolescents who had experienced a MDD recovered from the episode at follow-up. The likelihood for recovery decreased as the episode duration lengthened. That is, about 25% of the subjects were recovered by 3 weeks, 50% by 8 weeks, and 75% by 24 weeks. About 5% of the recovered adolescents relapsed within 6 months, 12% developed a recurrent depressive episode within a year, and one-third became depressed within 4 years. Eighty-four of the 316 adolescents who recovered from a major depressive episode developed a second-episode before the follow-up investigation.

However, the rates of recovery seemed to be affected by informants used. As reported by Goodyer et al. (1991), about 43% of the depressed children considered themselves as being recovered at follow-up; the recovery judgement made by their mother was 53% and by the psychiatrists 50%. This difference in judgement may be due to the parent’s inability to detect the child’s internal emotional and cognitive symptoms.

Predictors of recovery in clinical and high-risk studies include first affective disorder at or before the age of 13, having been exposed to multiple parental depression, having a moderate/poor friendship after the onset of depression, and having parents with high expressed emotion. In a community study by Lewinsohn et al. (1994), those who took longer to recover from MDD had an earlier age of onset from the first episode, had suicidal ideation, and had been seeking treatment for the mood disorder. In the Goodyer et al.’s study (1991), none of the social factors examined, such as undesirable life events, friendship, and recent social achievement, predicted recovery at a 12-month follow-up investigation. Negative outcome of depression was related to having a moderate/poor friendship after the onset of depression. It was argued that adolescents who are not recovered may over-report undesirable experiences and difficulties.

Asarnow et al. (1993) reported that adolescents whose parents were rated as having low expressed emotion were significantly more likely to recover compared to those whose parents have high expressed emotion. That is, at a one-year follow-up interview, none of the adolescents in the high expressed emotion group recovered, compared to 53% of the adolescents in the low expressed emotion group. This result remained after controlling for the adolescent’s sociodemographic factors (gender, age, socioeconomic status, single versus dual parent family) and clinical factors such as treatment during the follow-up period (i.e., psychosocial interventions versus psychosocial and pharmacologic interventions), depressive subtype (major depression, dysthymic disorder, double-depression), comorbidity with disruptive behavioural disorder, and chronicity (Asarnow et al., 1993). The authors argued that the ‘affective climate’ at home is an important predictor of outcome in depression. It was argued that children tend to be dependent on their families, especially when they are depressed and prone to withdraw from peers and other social activities.

In a recent study by Essau (2007), 24.4% of the adolescents with MDD met the diagnosis of this disorder at both the index and follow-up interviews. About half of the adolescents (48.9%) with a MDD at index interview no longer meet the diagnostic criteria of any psychiatric disorders at follow-up. In the remaining cases, the depression was replaced by other disorders such as anxiety, substance, and somatoform disorders. This finding suggested the heterogeneous pattern of depression in that sample. The presence of parental alcohol problems, suicidal behaviour and ideation (i.e., past suicidal attempt, suicidal thought, concrete suicidal plans), negative life events and negative coping, and the presence of substance use disorders significantly predicted the stability of depression.

**Relapse**

Relapse occurs at a high frequency after recovery for adolescents with MDD (Kovacs et al., 1984; Garber et al., 1988). Within one year of recovery, 26% of the treated depressed patients had a new depressive episode, which in most cases resulted in rehospitalization (Kovacs et al., 1984). In Lewinsohn et al.’s study (1994), 50% of those who recovered had relapsed within 6 months, 12% developed a recurrent/depressive episode within a year, and about one-third became depressed within 4 years. Kovacs and her colleagues also reported a 72% risk of relapse within 5 years after the initial episode, with the children with ‘double depression’ having a greater probability of relapse. Several studies (Fleming et al., 1993; Lewinsohn et al., 1994) have shown a recurrence rate of up to 70% by five years after the index episode and that adolescents with MDD face a 2- to 4-fold greater risk for depression as young adults (Pine et al., 1998).

Shorter time to relapse with MDD was associated with a history of suicide ideation and attempt during the first major depressive episode, greater severity of first major depressive episode, later age of first onset, and shorter first episode duration (Lewinsohn et al., 1994), as well as the presence of comorbid dysthymic disorder (Kovacs et al., 1984). The finding that MDD that occurred early during childhood had longer durations was interpreted as supporting the hypothesis that early-onset depression differ from depression that occurs later in life.

In another publication of the OADP data (Lewinsohn et al., 2003), factors identified during adolescence that predicted recurrence of depression at young
adulthood included specific features of adolescence (e.g., elevated depressive symptoms, excessive emotional reliance on others, lower social competence, daily hassles), features of adolescent MDD episode (e.g., long duration, multiple episodes, severity, history of suicide attempt), and having family members with MDD. Pettit et al. (2006) recently examined the association between the first depressive episode and the presence of a recurrent episode among adolescents and young adults. Two of the MDD’s criteria—depressed mood and increased appetite—predicted recurrence. The finding that depressed mood predicted depression was interpreted as supporting depressive mood as being central to MDD. Thus, MDD without depressive mood is not only uncommon, but it may follow a unique and less recurrent course.

In Warner et al.’s study (1992), adolescents with an early onset (below 13 years old) and whose parents were divorced and had multiple depressed episode had significantly more protracted time to recovery. The strongest predictor of recurrent depression in these adolescents was a prior comorbid diagnosis of dysthymic disorder, followed by problem in social functioning. That is, those whose first episode occurred before the age of 13 years took an average of 74 weeks to recover, whereas those who had experienced 2 or more bouts of parental depression took an average of 79 weeks to recover. Additionally, the mean number of weeks to recovery was 54 in children of depressed parents, and 23 in children of non-depressed parents; within the 2-year period, 87% of these children had recovered. These authors suggested that MDD in adolescents could have different predictors of incidence, recurrence, and time to recovery.

**Conclusion and future direction**

In this chapter, we have reviewed findings on the epidemiology, comorbidity, and course of depression in adolescents. There has been tremendous interest in adolescent depression in recent years, and consequently, our knowledge about depression in this age group has substantially increased. MDD is a common disorder that affects about 10% of the adolescents in the general population. Recent studies have shown high comorbidity and impairment associated with depression, and low level of mental health services utilization.

The course of MDD is chronic, with the average length of depressive episodes among adolescents in the community setting being about 30 weeks and for dysthymic disorder being 134 weeks. Relapse occurs frequently, with a high percentage of the depressed patients experiencing a new depressive episode a year after recovery. Given the frequency, chronicity, and severity of MDD experienced by adolescents, these disorders should not be viewed as a normal part of development. However, a major challenge is the question of whether our current classification system of MDD, designed for adults, is valid for use with adolescents. Another challenge is to reach the depressed adolescents who need professional help the most. Many depressed adolescents who seek treatment usually do so from a general practitioner (e.g., Essau, 2005). Because general care practitioners differ in their ability to detect depressive and other mental disorders (usually they tend to under-diagnose depression in their patients), efforts are needed to develop an assessment instrument for depression to allow its accurate and early detection. However, to be useful, they have to meet some specific requirement, including (Wittchen & Essau, 1990) (i) being brief so that they will not be time-consuming to administer or interact significantly with the time constraints in primary care, (ii) require only minimal training, and (iii) have a high sensitivity and specificity to allow early detection and treatment.

Although numerous studies have been focused on the comorbidity of depression and other disorders, the meaning of comorbidity for classification and aetiological mechanism is unclear. To progress further in this issue, future studies need to rule out chance, referral bias, population stratification, and overlapping diagnostic criteria. It would also be helpful to investigate comorbidity patterns across developmental stages to determine the extent to which specific comorbid disorders may represent subtypes of depression (Avenevoli et al., 2007). Furthermore, to solve the issues of diagnostic specificity and aetiological mechanisms in MDD, future studies need to explore the temporal relationship of the disorders by examining their age of onset. Given the findings that depression with different age of onset tend to have different pathways to adult depression and health, an area of future research would be to compare the course of depression based on age of onset (i.e., child-, prepubertal-, and adolescent-onset depression).

To conclude, although our knowledge about adolescent depression has increased over the last decade, there is much more to learn before we can assert that we fully understand their onset, course, and long-term sequels.

**References**


