

# Depression in Adolescence: A General Review

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## ABSTRACT

Though hardly get attention from the public, depressive disorder in adolescents has become a serious problem in many countries. The general symptoms of this kind of disorder may be depressed mood, poor academic performance, etc. It is especially severe when children cannot get treatment in the time since some parents might ignore the hint from their kids and neglect the severity of this disease. Given the hardship adolescents with depressive disorder encountered, the review included the etiology, impact, and applicable treatment to this specific disease in the hope of providing a holistic view of current studies related to adolescents' depressive disorder and helped more young patients. This review, based on several studies, provides a more specific look at the etiology aspect. The results showed that the cause of depressive disorder in adolescents should be attributed to the mixed effect of gene pool and environments. The impact of depressive disorder in adolescents should not be limited only to personal performance and depressed mood. This disease can also trigger some physical problems such as headaches and so on. To restrain and cure depression, potential treatments are listed in this article. The future direction may target differences in gender and cultural backgrounds.

**Keywords:** Depression, Adolescence, Etiology, Impact, Therapy

## 1. INTRODUCTION

Depression, also known as major depressive disorder (MDD) or clinical depression, is a common and serious medical disease that can significantly impact how you feel, think, and act, as well as your daily activities like sleeping, eating, and managing your work. The prevalence of depression throughout adolescence ranges from 4% to 5% [1]. Depression is a key risk factor for suicide in adolescents, which is the second- to third-leading cause of death in this age range, with more than half of adolescent suicide victims having a depressive illness at the time of death [1]. However, depression in adolescence is easier to miss than depression in adults. The reason is that Adolescents are more likely to be anxious, emotional, and unable to describe their feelings appropriately. Anxiety, unwillingness to go to school, academic decline, self-harm, and suicidal tendency are all recognized symptoms, as are feelings of being misunderstood and excessively sensitive. As a result, it is critical to recognize and treat this condition.

Depression may strike anyone at any age, although it is most common in adolescents, early twenties, and early thirties. It can coexist with various mental illnesses, such as anxiety disorders, substance-related disorders, bipolar disorder [2, 3], and substance addiction and other health problems. Because of its significant ties to recurrence later in life, depression in adolescents might be thought of as an early-onset subtype of adult illness [4]. Clinical characteristics and brain activity patterns are comparable to those seen in adults. Meanwhile, because depression may be inherited, it's linked to a family history for the treatment, therapies including cognitive-behavioural therapy, family therapy and medical therapy [5].

The main focus of this paper is to provide an overview of depression in adolescence on the etiology, impacts, therapies. I hope this paper can give people a view of adolescent depression, especially for the family numbers. The understanding of care from the family often plays a key role in developing and treating adolescent depression.

## 2. METHOD

In developing this literature review, the main databases searched to obtain information about the etiology, impacts, and treatment of depression in adolescents are Google, Pubmed, APA PsycNet, ScienceDirect, Google Scholar, and Baidu Scholar. Search items were used that combined: (1) mental health of adolescent, (2) Depression compliance, (3) Academic performance of adolescent, (4) School attendance of adolescent, (5) Major depressive disorder, (6) Depression and headache and (7) adolescence. Titles were set as search fields for articles from 2000 till 2021.2. No language restriction was applied.

From the remaining records, the following eligibility criteria were used to screen and select suitable references based on the purposes of this review:

- (1) Only articles that are available, peer-viewed, full-text can be used,
  - (2) Original empirical results must be reported in the article,
  - (3) Only if the article investigates human participants can it be used,
  - (4) The article must address at least one of the causes, impacts, or treatments of adolescent depression,
  - (5) The article uses a reliable tool to measure and diagnose AN symptom,
  - (6) The focus of the study should be on adolescents.
- Finally, 17 articles were included in this review.

## 3. RESULT

### 3.1. Etiology

Although the depressive mood appears in children has long been neglected by most parents and remains untreated as a normal personality, statistical data shows that approximately 12.8% of US teenagers diagnosed at least one major depressive episode in 2016. Especially in China, about a quarter of people who are diagnosed with a depressive disorder are adolescents. The manifestations of adolescents are typically the unwillingness to express their feelings to their parents, unstable temperament and unpredictable emotional burst. Although it is unavoidable that children refuse to communicate with parents, parents need to understand their children. It might be hard for children to explain their inner feelings or precipice mood, so parents must pay attention when previously well-performed students tend to do poorly in schools, such as fall in the exams, inappropriate behavior or deficit interpersonal relationships.

To identify the influential factors contributing to depressive disorder Physical (genes), Biological influences-gene or brain structure- should be considered as one prior actor. Although the specific cause of the

depressive disorder is not clear in adolescents, it is suggested that it is similar to adults'.

#### 3.1.1. Biological factors

Inheritance can explain most depressive disorders. A 70 year ago study about monozygotic, and dizygotic twins with mood disorders have indicated the role that gene has played. However, it does not distinguish the difference between bipolar and major depressive disorder. According to one recent research based on the previous study results and twins study, major depression is a familial disorder, resulting in about 37% heritability [6].

In particular, the risk of being diagnosed as a depressive disorder for children can be largely attributed to their first-degree relatives. Moreover, it can also lead to early onset and a high degree of recurrence [7].

Another important evidence on the genetic component is based on linkage studies, which is known to be based on the fact that two nearby loci can be more frequently inherited by families when on the same chromosome. To be more specific, it is to be considered that vulnerability genes are harbored by chromosomal fragments along with illness more often than people usually consider. However, those studies have been declared as inconsistent due to the complexity of genetic factors and should include gene-environment components. Nowadays, it still remains ambiguous about the precise heritage factor of MDD [8].

Not to mention, with several linkage scans, 15q25.3-26.2(empiric genome-wide  $p=0.023$ ) has been found on the chromosome. Holmans et al. has reported that in the study, which includes 565 families, chromosome 15q and 17p and 8p can suggest genome-wide suggestive linkage [8].

Also, according to Abkevivh et al., a prominent linkage signal,12q23, indicates a bipolar disorder locus, suggesting a genetic overlap between bipolar disorder and major depressive disorder. The 12q23 region serves as an increased risk for both types of depressive disorder.

In addition, a study based on 497 siblings pairs indicated that chromosomes 1p36, 12q23.3-q24.11, and 13q31.1xq31.3 could attribute to recurrent depression. In particular, 12q locus was known to be the linkage studies of unipolar and bipolar disorders, and 13q peak plays a role in panic disorder [9].

The second inner factor contributing to the depressive disorder should be amygdala and hippocampus [10]. Amygdala usually serves as a function in the experience of emotions and stresses. The connection of the amygdala to the hypothalamus activates the hypothalamic-pituitaryadrenal (HPA) axis and the cortical response. In an animal study [11], an

anxiety-generating circuit has suggested that the medial amygdala is associated with complex social behaviours. According to Qin et al., the enlarged base lateral amygdala strongly connects to children anxiety, and other studies also presented the association between greater cortisol stress responders and reduced amygdala volume.[12] All the research can conclude that major depressive disorder should be associated with larger right-sided medial nuclei amygdala volumes and major depressive cortisol correlated with left cortisol amygdala transition area inversely.

### *3.1.2. Environmental factors*

Although it is said that biological factors play an important role in depressive disorder, it should be acknowledged that environmental factors serve as one major function that propels that depressive disorder of adolescents, including parenting and societal condition.

Children with academic difficulties often experience a high risk of depressive disorder [14]. One large factor is poor support from others and aversive environment experience. For example, family conflict and hostility from parents usually lead to sadness in adolescents, which is classified as negative reinforcement and punishment and is largely related to depressive disorder [12].

Moreover, it is common for clinically depressed patients to report childhood abuse to result in the learned helplessness model.

Another reason for depression should be due to long term ignorance from families. Adolescents who potentially experience depressive moods, automatically seek support from outer surroundings, such as support from parents. Reassurance seeking largely result in higher frequency overtimes to gain a kind of security from parents instead of an obligation. However, parents may not be able to sense the insecurity from their children and show frustration in offering support, with decreased intermittent reinforcement. Subsequently, the depressive disorder would be strengthened without enough support from parents.[15]

## *3.2. Individual impact*

Depression is common and debilitating in children and adolescents, and it often heralds a chronic and recurring course of disease and disability in adulthood [3].

Depression and pain co-exist in almost 80% of patients and are associated with impaired health-related quality of life, often contributing to high mortality [1].

The clinical data summaries ("item sheets") of children who attended the Maudsley Hospital in London, England, in the late 1960s and early 1970s

were used in this study. These summaries were utilized to identify a group of 80 pediatric and adolescent psychiatric patients who had a depressed syndrome that was operationally characterized. A computer program matched the depressed children with 80 non-depressed psychiatric controls on demographic characteristics and non-depressive childhood symptoms. Information on the adult mental state of 82 per cent of the entire sample was collected at follow-up, which occurred on average 18 years after the initial contact. The depressed group had a higher risk of developing the affective disorder later in life and psychiatric hospitalization and treatment. Non Depressive adult psychiatric disorders were no more common in them than in the control group. These data showed that the continuation of mental disorders between adolescence and adulthood had a lot of specificities [5].

### *3.2.1. Headache*

In adults, retrospective epidemiological research suggests that a long-term association between major depression and headache arises during childhood or adolescence.

Between headache and major depressive disorder, there were both lifetime and cross-sectional correlations. In depressed adolescents, the headache was about twice as prevalent as in non-depressed adolescents. Major depressive disorder in teenagers who did not have a current or previous headache predicted the emergence of new headaches in early adulthood. Adolescents with the present major depressive disorder had a roughly tenfold higher chance of having chronic debilitating headaches at some point during the following 7 years, compared to those who had no history of such headaches in 1985–1986 [4].

### *3.2.2. Self-harm*

Adolescents with the major depressive disorder had the highest prevalence of self-harm. This was especially the case for females with major depressive disorder, with around half of them self-harming (54.9 % and 49.2% of those with major depressive disorder based on adolescent and parent reports, respectively). While young people with various mental illnesses had self-harm rates more than twice as high as those without a problem, these young people's rates were much lower than those with major depressive disorder (32.5 % for all 12-17 years old with major depressive disorder, 10.6 per cent for those with other disorders and 4.2 per cent for those with no disorder based on parent reports) [13].

### *3.2.3. Suicide tendency*

In 2015, over 128,000 or 7.5 per cent of young people aged 12 to 17 had seriously pondered suicide. Females had a percentage that was more than twice as

high as men (10.7 per cent and 4.5 per cent respectively). In addition, 4.7 per cent of males and 6.6 per cent of females said they "prefer not to reply" when questioned about suicidal ideation, and they were not asked about suicide intentions or attempts.

Seven out of ten (71%) 13-17 years old who reported a suicide attempt in 2015 had sought help for emotional or behavioural issues in the previous year. The majority of them had sought medical help (69.8 %). Over half of 13-17 years old who reported a suicide attempt in 2015 utilized school services (57.9%), one fifth used a telephone counseling service (21.9%), and one-tenth (10.9%) used an online personal support or counseling service like headspace, Reach out, or Youth beyond blue. Females had a larger percentage of people who had utilized services than males (77.9% and 50.6%, respectively) [14].

### **3.3. Social impact**

#### *3.3.1. Academic effect*

With higher depression, symptoms have worse academic achievement, according to mediated actor effects [2]. Depression in adolescence can lead to social isolation, motivation loss, sleep disturbances, and low energy, all of which can contribute to lower school attendance.

Students with mental problems, especially with depression, had poorer attendance, missing 11.8 days per year on average in Years 1–6, 23.1 days per year in Years 7–10, and 25.8 days per year in Years 11–12. Students without mental illnesses, on the other hand, missed an average of 8.3 days each year (Years 1–6), 10.6 days (Years 7–10), and 12.0 days (Years 11–12). Absences related to mental illness accounted for 13.4 per cent of all days missed at school among children with mental illnesses. This grew throughout time in school, rising from 8.9% in Years 1–6 to 16.6% in Years 11–12. Improving mental health prevention, early intervention, treatment, and management might result in large increases in school attendance [15].

### **3.4. Therapies**

#### *3.4.1. Cognitive-behavioural therapy*

Almost all kinds of cognitive behavioural therapy have the following characteristics: (1) children are the focus of treatment. (2) The therapist plays an active role. (3) Children cooperate with doctors to solve problems. (4) Doctors teach children to monitor their thinking and behaviour and learn to record. (5) Treatment was combined with other procedures, such as behavioural technology and cognitive strategies.

In 6 randomized controlled studies, cognitive behavioural therapy can significantly alleviate the condition of depression in children, and about 1 / 3 of patients can significantly alleviate it; moreover, the scale evaluation showed that four studies of cognitive behavioural therapy were better than placebo, patients without supportive treatment or untreated, and two studies were similar to placebo or untreated patients. There are few studies on the influencing factors of its curative effect. So far, the more consistent finding is that the effect of cognitive-behavioural treatment of severe depression is inferior to that of mild to moderate patients. In addition, the degree of negative cognition may affect the curative effect.

#### *3.4.2. Family therapy*

Although the definitions of family therapy activities vary widely, they are generally considered to have the following characteristics. (1) Talk face to face with more than 2 family members. (2) Treatment is aimed at changing the interaction among family members. (3) Doctors consider the curative effect and judge it from two levels: the existing problems and the related relationship model. (4) There are two specific methods. That is, parents and patients participate in treatment at the same time to learn problem-solving skills and communication skills. To help parents improve patients' learning ability of new skills. Patients and parents practice these skills during treatment; Assign joint homework. It mainly changes the family communication mode and problem-solving skills.

According to Fan Yanfei, Chen Fuhui, and Xu Aiping's experiment [16], the application of family therapy in adolescent patients with depression may reduce the symptoms of depression, reduce the sense of shame, improve the mood of parents and reduce stress. In the experiment, 58 adolescent patients with depression were divided into study groups (n=29) and control groups (n=29) randomly. The control group was treated with fluoxetine and general psychotherapy, and the study group was treated with fluoxetine and family therapy 8 times (completed within 12 weeks). Before and after treatment, Hamilton Depression Scale (HAMD), Beck Depression Questionnaire Second Edition (BDI-II) and psychiatric stigma assessment scale were used to evaluate the patients. Results at the end of the 12th week, the scores of HAMD and BDI-II in the two groups decreased significantly, and the study group was better than the control group ( $P < 0.05$ ). The psychiatric shame scale, social ability and treatment factors in the study group were greater than those in the control group ( $P < 0.05$ ), The scores of depression and stress were lower than those in the control group ( $P < 0.05$ ).

### 3.4.3. Medical therapy

Clinically, the drugs for depression in children and adolescents are mainly divided into tricyclic antidepressants (such as imipramine, clomipramine, etc.), serotonin reuptake inhibitors, and other new antidepressants (such as fluoxetine, venlafaxine, etc.). Studies at home and abroad have shown that the efficacy of the latter two drugs is better than that of the first, among which fluoxetine and mirtazapine have a better therapeutic effect, fewer side effects, and are safer. Hazel and O'Connell's research indicate that tricyclic antidepressants have the same effect as placebo in the treatment of depression in adolescents in Great Britain [17].

## 4. DISCUSSION

This review provides a study of depression in adolescents on the etiology, impacts and therapies. Although the majority has long neglected depression in teenagers, it reveals the significance of family environment, social and individual impact and the requirement for treatment in time. A comprehensive literature review included a total of fifteen studies, with 3 about the particular manifestation in China, which appears to struggle with depressive disorder in adolescents for a long time. On the whole, these studies suggest the comprehensive investigation of depressive disorder in adolescents, including its causes, influences and therapies. This literature review focuses more closely on adolescents in the Chinese community to point out how a family could influence one child and how to treat the patient with family therapies. Although the result might not be complete due to the gender difference, the review of the latest etiology, impact and treatment can be held for the general masses.

This review aims to provide readers with more specific information on depressive disorder in adolescents. From the etiology perspective, it is divided into biological and societal aspects, including the specific DNA which carries the vulnerable chromosome and family environment scales. From the impact perspective, it shows the harmful results that can be long lasting and contribute to mortality for individuals and society, including headache, self-harm, suicide tendency, and poverty. The suggested therapies including cognitive-behavioural therapy, family therapy and medical therapy.

### 4.2. Future directions

There are still some drawbacks in this review to be compensated. There is not enough professional and reliable literature discussing the specific and persuasive hereditary chromosome in depressive disorder so far. The current studies are limited by technology and medical knowledge to fully understand the etiology of

depressive disorder in adolescents. More research is needed in the following decades to investigate more heritable genes and make final decisions.

In addition, this literature review only focuses on the general adolescents who are diagnosed with depressive disorder but neglects the gender differences between males and females. Based on the difference in childhood experience and physical difference, females and males might get different etiology. In that case, appears different symptoms and need specific treatment to bring out the best effect. We still know a little about the particular etiology, impact, and therapies about depressive disorder in adolescents. Still, this passage has collected the latest findings of this specific disease in teenagers, which can surely at least benefit some children in helping themselves.

## 5. CONCLUSION

The etiology of depressive disorder in adolescents should largely be traced back to family history and family environment, suggesting a combined and complex effect. Moreover, without proper treatment, the depressive disorder disease is likely to cause significant influence on physical and social interaction of individuals, which further hinders the development of children. Regarding those significant influences on kids' daily lives, some medical and psychological treatments are suggested. Although the present review might be limited by current medical skills and lack of consideration of gender differences, the review still provides a general overview of depressive disorder in adolescents. This article can play an important role in helping people with depressive disorder and find a way to help themselves.

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