Adolescent Depression and Cognitive-Behavioral Therapy (CBT)

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ABSTRACT

Nowadays, the prevalence rate of depression is constantly increasing, which has caused more and more concerns among investigators and clinicians. The causes of depression are complex, and many related theories and studies have taken depression as the topic. This paper summarizes the previous studies on adolescent depression, giving a detailed description of teen depression from its key symptoms, its causes, and so on. In addition, this article also reviewed the main theory of Cognitive-Behavioral Therapy (CBT), and its application in treatment and its latest development.

KEYWORDS

Adolescent, depression, Cognitive-Behavioral Therapy (CBT).

INTRODUCTION

Depression, also known as depressive disorder, is a kind of mood and affective disorder characterized by persistent depressed mood. The symptoms of depression are various. People with mild depression will suffer from sadness, insomnia, anxiety and so on. People with serious depression will suffer from severe despair and have suicidal thoughts and behaviors. Now, there are more than 350,000,000 people in the world suffering from depression. As a common mental illness, depression draws more and more attention. According to statistics, the prevalence of depression for lifetime is up to 15%, and 15% of them may commit suicide because of serious depression.

Depression was first divided into two types, endogenous depression and exogenous depression, based on the theory of German psychiatrist Kraepelin. He suggests that depression should be treated with biological therapy because he believed that depression is mainly caused by biological and genetic factors. While Adolph Meyer, an American psychiatrist, advocated psychotherapy because he thought that firstly depression is a psychological problem, it was psychic reaction; then a biological issue.

Additionally, depression can be divided into unipolar depression and bipolar depression according to whether patients have manic episode in their medical history. Unipolar depression only causes periods of depression without manic episode. Unipolar depression causes periods of depression with manic episode which occurs before or after depression. Bipolar depression can also lead to a mixed period of depression and manic episode.

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In addition, depression can be divided into early-onset depression and late-onset depression in terms of onset age. As for the early-onset patients, they develop the first episode during their teenage years. Now, the prevalence rate of adolescent depression keeps climbing around the world, but the causes are still unknown. The factors that have been proved to correlates with adolescent depression includes genetic, psychological, and social environmental factors. Therefore, this paper will give a comprehensive explanation from these aspects. The previous study found that pharmacological intervention and psychological therapy are used commonly to treat and intervene adolescent depression. Cognitive-Behavioral Therapy (CBT), a type of psychotherapeutic treatment for depression, is proven to be an effective treatment and achieve remarkable success. Therefore, this paper will also elaborate the application and the latest development of CBT.

**BASIC CHARACTERISTICS OF ADOLESCENT DEPRESSION**

**THE EPIDEMIOLOGY AND PROGNOSIS OF ADOLESCENT DEPRESSION**

Adolescence is an important period of physical and psychological development. However, the prevalence of depression is constantly increasing in this period, which is about one quarter of the total depression population. According to longitudinal study, the prevalence rates of depression for males and females under the age of 10 are generally the same, however, as they grow up, the prevalence rate for females rises by about twice as much as that of males. Many scholars believed that this phenomenon is caused by the change of female sex hormone and social environment. In addition, the statistics show that under the age of 18, depression occurs at the rate of 0.3% during preschool period and 2% during school age, however, the prevalence of depression in adolescence increases significantly (4%-8%). Moreover, adolescent depression patients are at high risks for self-inflicted wound and suicide. Therefore, depression is a serious mental health problem which has a negative impact on teenagers’ health, school performance and social functions.

When adolescent depression is not treated in time, the course of disease is about 7-9 months. Although 60%-90% of the patients can relieve after one-year treatment, the relapse rate of adolescent depression is still high. According to investigations, 40%-70% of the patients sustain a relapse after three- or five-year relief. Hence, the prognosis of adolescent depression is poor, and some patients may suffer from depression in their adulthood.

**THE MAIN CHARACTERISTICS AND SYMPTOMS OF ADOLESCENT DEPRESSION**

Adolescent depression is relatively difficult to be diagnosed. It is usually diagnosed by nonprofessional as cerebrovascular insufficiency, neurasthenia and so on, so some auxiliary examinations are involved in clinical diagnosis such as medical history, clinical examination, psychiatric examination, and so on. Generally, the most important clinical manifestation of serious depressive disorder is loss of interest or pleasure for
more than 2 weeks. Normally, adolescent depression patients at first will lose their interests in learning, hate learning or cut class. And then, they will lose their interests in most of the surroundings, the sense of pleasure and their social function.

Adolescent depression patients have noticeable changes in their body, emotion and behavior. First of all, in the aspect of physical changes, patients will feel unwell and suffer from dizziness, headache, fatigue, chest distress, insomnia and so on. Secondly, there are two extremes in the changes of appetite. On the one hand, some patients will suffer from decreased appetite and weight loss. On the other hand, some patients will go through increased cravings for food and weight gain. Studies have found that obesity can increase the risk of developing depression. Thirdly, in the emotional changes, the main depression symptom is feeling awfully low with sadness, crying and despair. Most of the patients can also be manifested as irritability, emotional ups and downs, easy temper, stubborn, and so on. Fourthly, the symptoms of behavioral changes are slowing movement, lack of speech, stupor state, weakening social function and so on. Most of patients may also have anti-social behavior, alcohol and drug abuse.

THE CAUSES AND FACTORS FOR ADOLESCENT DEPRESSION

Adolescent depression does not have one single definitive cause but a complex one. Individual gene may create a susceptible environment and make a contribution to the development of depression, but depression is closely associated with individual family environment and social environment. This article will give an introduction of the causes of depression from individual and environmental aspect as follows:

INDIVIDUAL FACTORS

Genic Factors

The heritability of depression is high, and the prevalence of depression for depression patients’ offspring is three to four times as much as that of health people’s offspring. According to family survey, the prevalence of depression is 10%-15% for first-degree relative, considerably higher than other relatives, which shows that the closer blood relation, the higher the risk of illness. As Parker G’s (2001) survey showed, if parents, especially mothers, were depression patients, their children would be more likely to develop depression. Besides, Fan Juan (2007) found that among the adolescent depression patients, 32.15% of them had positive family history of mental disorder, commonly depression history. According to twin report, the prevalence rate of depression for homozygotes twins was higher than that of heterozygotes twins.

Neurotransmitter Hypothesis

Many researchers believe that the development of depression was associated with the abnormality of neurotransmitter in the brain and its receptors, including 5-HT, dopamine and norepinephrine.

The theory of 5-HT and its receptors was first proposed by Coppen in 1965. Coppen believed that depression was associated with a reduced level of the neurotransmitter serotonin in the body. As the study showed, the content of 5-HT had a remarkable
decrease in the bodies of patients who committed suicide due to depression. Therefore, using drugs which could increase the content of 5-HT would treat depression, while using drugs which decreased the content of 5-HT would lead to the development of depression. There were seven types of 5-HT receptors encoded by 1-7 and subtypes encoded by A-F. Among them, there were six receptors closely related to depression, namely 5-HT1A, 5-HT1B, 5-HT1D, 5-HT2, 5-HT6, 5-HT7. Specifically, a developmental increase of 5-HT1A expression would be paralleled by a decrease of 5-HT transmission, which was one of the major causes of depression.

The theory of dopamine (DA) and its receptors was proposed by Randrup and other researchers in 1975. They advocated that a decreased content of dopamine in the body was the cause of depression. As for those depression patients, the function of dopamine in the brain was weakening. As the data from an animal study showed, dopamine (DA) had five subtypes (D1-D5), and the rat was prone to be depressed when the DAD1 receptor expression in the rat’s brain was on the rise.

Schildkraut and other scholars put forward that the development of depression was related to inadequate content of norepinephrine (NE) in the brain central nervous system. As studies showed, a long-term use of the drugs which could reduce the content of NE would increase the risk of depression; on the contrary, a long-term use of the drugs that can increase the content of NE will effectively alleviate and lighten depression. Two broad families of norepinephrine receptors have been identified, known as α and β receptors. Among them, the α2 receptor and the β receptor were associated with depression. α2 receptors, located on the surface of the cells that released norepinephrine, were so sensitive that α2 activation was often a decrease in the amount of norepinephrine released. As a result, it may lead to depression. Some scholars (Yaniv, et al) put forward that a long-term decrease of NE function in the brain could cause an increase of compensatory sensitivity in β receptor, as a result of an increased risk of depression.

ENVIRONMENTAL FACTORS

Family Environmental Factors

Family environment is also one of the main causes of depression. According to the adoptee study, compared with the adoptees whose parents were healthy, those whose parents suffered from depressive disorder were more likely to be diagnosed with depression. This study also provided a powerful evidence that environment had a significant impact on the prevalence of depression. It could be found that if children lived in a family environment filled with aggression, punishment, marital conflict and rejection, they would be more prone to suffer from depression. Besides, as a survey shows, those children who have suffered from abuse or whose parents had suffered from trauma were more likely to develop depression. Lansford JE did a 12-year study (1987-1999) on 555 children, of which 11.8% have suffered from physical abuse. He found that more than 75% of those children developed depression or anxiety in adolescence. Apart from physical abuse, emotional abuse, emotional neglect, sexual abuse and physical neglect are also the risk factors for the cause of depression (Li Ping & Liu Yuxi, 2015). In addition, Han Meekyng found that parental trauma had an impact on offspring. Children were troubled by a lack of the sense of security and dependency from their parents, and thereby they became more likely to develop depression.
Pressure, Stress reaction and Social Support

Many previous studies have shown that stressful life events pose a great risk for depression. According to Leskela US’s study, more than 90% of the depression patients had once suffered from stressful life events, such as loss of family members and unemployment, which occurred at least four times on average per year before they developed depression. The pressures of adolescent came from individual, family, school and social environment. These teenagers played different roles in these different conditions, so they were sensitive to switching roles. Faced with stressful event, they had difficulty in adjusting their mind and adapting to it. The onset of adolescent depression was paralleled by the frequency of stressful events. In addition, some studies showed that the way that teenagers behaved towards the life events was also the cause of depression. Faced with stress, if the adolescent were willing to turn to their parents or surroundings for help, they were less likely to develop depression. On the contrary, if adolescents were aggressive and took negative attitudes towards the stress, they were more likely to suffer from depression. Except that, when adolescents were enmeshed in stressful events, the social supports from family members, friends, school and workplace also had a significant effect on the depression. The way to support was not only material support, but more importantly, was psychological support. Social supports could help individuals alleviate psychological stress, relieved mental stress and improved social function. Therefore, social support was also regarded as a main factor for depression. According to Hyponymy T’s study, within five years, a high level of social support was closely related to low tendency of depression.

PHARMACOLOGICAL INTERVENTION AND MEDICATIONS OF ADOLESCENT DEPRESSION

Now, the main medications used in clinical treatment of adolescent depression are the tricyclic antidepressants (TCAs), the selective serotonin reuptake inhibitors (SSRIs), and the serotonin–norepinephrine reuptake inhibitors (SNRIs).

THE TRICYCLIC ANTIDEPRESSANTS (TCAS)

The tricyclic antidepressants (TCAs) were commonly used in clinical treatment of adolescent depression since 1990s, including Antideprin, Norpolake, Amitriptyline, Doxepin, and so on. However, it caused many side effects, such as dry mouth, constipation, blurry vision, and it might lead to lethal outcomes by overdoes. By researching, P Hazell in 2005 found that the antidepressant effect was the same as that of placebo, and there were no remarkable differences between the treatment group and the control group. Consequently, many experts suggested that TCAs should not be used as the front-line medicine to treat adolescent depression any more, and TCAs should be used coordinating with other medicines.
THE SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIS)

In recent years, newer antidepressants have gradually taken the place of TCAs, and it could be seen that the selective serotonin reuptake inhibitors (SSRIs) were widely used to treat adolescent depression. However, D Healy (2004) found that SSRIs medications could increase the risk of suicide for adolescents. Based on study and analysis, JA Bridge (2007) found that the therapeutic effect of SSRIs medications on depression was at the rate of 61%, which was dramatically higher than the rate 2% placebo showed. Besides, the suicide rate was 3% which showed SSRIs medications did more good than harm. Fluoxetine, Sertaline and Citalopram were the main types of SSRIs medications which were more effective than placebo in treating adolescent depression.

THE SEROTONIN–NOREPINEPHRINE REUPTAKE INHIBITORS (SNRIS)

The serotonin–norepinephrine reuptake inhibitors (SNRIs) mainly contain venlafaxine and mirtazapine. According to the study of JA Bridge, venlafaxine played an effective role in treating depression and it also had antianxiety function. The remission rate of venlafaxine was 71% which was remarkably higher than the rate of 60% placebo showed, but its adverse effects still need a further experiment. Additionally, as Haapasalo-Pesu’s study showed, mirtazapine also did well in treating adolescent depression, improving the quality of sleep and it was well tolerated. Although mirtazapine was more likely to cause tiredness, increased appetite and dizziness, it appeared to have a faster onset in adolescent depression patients with the least side effects. As a result, mirtazapine was regarded as the safest antidepressant medication.

It is essential for those confirmed adolescent depression patients to be treated with medication. However, given that the causes of depression are complicated, and teenagers are in a significant period of growth, most of the adolescent patients need to be treated by the combination of medication and psychological intervention. Now, there are various methods of psychological intervention, and this paper will mainly introduce the classical and effective one-- Cognitive-Behavioral Therapy (CBT).

COGNITIVE-BEHAVIORAL THERAPY (CBT)

THE THEORY AND METHOD OF CBT

Cognitive-Behavioral Therapy was a systematic psychological intervention established by an American psychologist A. T. Beck in 1976. Mainstream cognitive-behavioral therapy assumed that changing maladaptive thinking or belief and behavior was the prerequisite of the change of maladaptive cognition, and finally eliminated maladaptive emotion and behavior. In other words, people’s thinking played a decisive role in their psychology and behavior. Therefore, when patients had maladaptive belief or cognition, their mental conditions could be improved by changing their attitudes towards surroundings. The CBT model was based on a combination of the cognitive and behavioral therapy. Separately, the cognitive therapy assumed that cognitive
process was decided by both emotion and behavior. That is to say if someone want to change people’s emotion and behavior, he had to change the cognitive process first. The behavioral therapy assumed that behind people’s behavior was the process of learning, so practical operations could be made to restrain, decrease and change maladaptive behavior. Finally, these two therapies reinforced each other.

Rational Emotive Behavior Therapy (REBT) proposed by Ellis in which the theory is in ABC model can be used to explain the interaction among cognition, emotion and behavior. The A refers to activating events such as events, people and behavior; the B refers to beliefs about the A, including the evaluation, cognition and understanding about the A; the C refers to emotional and behavioral consequences. The REBT framework assumes that the A (activating event) is the indirect cause of the C (consequence), while the B (belief about activating event) is the direct cause of the C (consequence). Therefore, rational beliefs can make a contribution to rational emotion and behavior, whereas irrational beliefs can lead to irrational emotion and behavior. The aim of CBT is to change the cognitive disturbance and irrational beliefs of the patients, and thereby change the way patients behave towards some specific issues.

THE BASIC MODEL AND TECHNIQUE OF CBT

Nowadays, there are mainly three models of Cognitive-Behavioral Therapy: cognitive restructuring therapy, coping skill therapy and problem-solving therapy. First of all, the cognitive restructuring therapy believes that irrational emotion and behavior are the result of inappropriate way of thinking. This therapy aims to find out a more appropriate way of thinking when patients suffer from irrational beliefs. Secondly, the coping skill therapy aims to provide a systematic coping skill when patients are in stress state. Thirdly, the problem-solving therapy is a combination of the cognitive restricting therapy and the coping skill therapy and focuses on exploring a more extensive and more appropriate therapy.

Except for Ellis’ Rational Emotive Behavior Therapy (REBT) and Beck’s Cognitive-Behavioral Therapy, Meichenbaum’s Cognitive Behavioral Modification, M. C. Maultsby’s Rational Behavior Therapy, and Structured Cognitive Training proposed by V. F. Guidano and G. Liotti were the typical kinds of cognitive restructuring therapy. The types of the coping skill therapy included Anxiety-Management Training established by R. M. Suinn and F.C. Richardson and M. R. Goldfried’s Systematic Rational Restructuring therapy. The types of problem solving therapy mainly contained L. Rehm’s Self-control Therapies and Problem-solving Therapy put forward by T.J. D’Zurilla and Goldfried.

The basic technique and steps of CBT are psychological education technology, cognitive reconstruction technology, homework assignment and the management of more extensive issue. First of all, the psychological education technology aims to establish a stable relationship with visitors. The therapists begin to learn about the mental problem of the visitors by asking questions, and then explain the mechanism of psychotherapy to the visitors, which can boost visitors’ confidence. Secondly, the cognitive reconstruction technology is the process that the visitors realize their irrational beliefs and then correct their irrational beliefs. Thirdly, homework assignment aims to let the visitors enhance the rational beliefs in the practice outside the therapeutic environment. The ultimate aim of this therapy is to manage more extensive issues and
achieve the transformation of the visitors from a passive learner to a positive learner who can handle the issues in real life after getting effective knowledge.

THE APPLICATION AND EFFECTIVENESS OF CBT

Cognitive-Behavioral Therapy (CBT) is used to treat those adolescent depression patients who suffer from a persistent depressed mood, lack of confidence, and social breakdown. Two meta-analysis on children and adolescent depression published in 1998 has found that CBT was an effective therapy for treating depression. According to the meta-analysis did by Klein (2007), although the effectiveness of CBT on children and adolescent depression had decreased, its effectiveness was still of statistical significance. Spirito (2011) found that patients’ suicidal thinking and behavior could be improved by CBT and some skill training within CBT could make a contribution to the transformation of suicidal thoughts, which showed that CBT had an effective impact on treating children and adolescent patients with major depressive disorder. After reviewing 12 clinical trials about the use of CBT in treating children and adolescent depression implemented in 1990-2002, SN Compton (2004) found that the effectiveness of CBT in treating children and adolescent depression was at the rate between 40% and 87%, and the recurrence rate had a remarkable decrease. Chinese scholar Zhou Xinyu (2016) implemented a randomized controlled trial in which the subjects were 52 adolescent depression patients aged 6-18. According to the meta-analysis on the effectiveness and the acceptability of CBT and other psychotherapies, compared with other psychotherapies, the effectiveness and acceptability of CBT were apparently higher.

THE COMBINATION OF CBT AND MEDICATION

According to the studies, only by medication, depression patients cannot be treated effectively. Some current studies show that the effective rate of antidepressant drugs is from 60% to 80%, the cure rate is only at 30%, and it will take two or four weeks to feel its effectiveness. Therefore, the combination of CBT and antidepressant drugs is the main therapy in clinical treatment in order to increase its effectiveness. Besides, the combination of CBT and medication has been proven to be an effective one.

According to Wiles’ (2013) study, after six-month treatment, the combined therapy of CBT and medication did better than the single medication therapy in treating refractory depression. As its data showed, the effectiveness of the combined therapy was three times as much as that of the single medication therapy, which showed the combination of medication therapy and psychotherapy had an apparent effect on improving depression.

According to the latest study, the combination of CBT and Fluoxetine could increase the effectiveness in treating adolescent depression. A study group of depression divided 439 adolescent depression patients aged from 12 to 17 into four groups: Fluoxetine (10 ~ 40 mg/d) Group, Fluoxetine (10 ~ 40mg/d) and CBT Group, CBT Group, and Placebo Group. As the study showed, the Fluoxetine (10~40mg/d) and CBT Group with the rate of 71% is remarkably higher than Fluoxetine (10~40 mg/d) Group with the rate of 61% and CBT Group with the rate of 43%. Besides, the rate that these three
groups show was higher than the Placebo Group with the rate of 30%. Therefore, it could be seen that the combination of CBT and medication was the most effective one.

CONCLUSION

The prevalence of adolescent depression keeps increasing and the causes of depression are complicated. Except the causes and factors mentioned in this paper, many other factors need to be studied. Now, pharmacological intervention is the main treatment of depression, but the negative impact of pharmacological intervention on teenagers cannot be ignored because they are in a critical period of growth. Therefore, new treatment technology which will not affect teenagers’ growth, development and mental health need to be researched and developed.

In addition, Cognitive-Behavioral Therapy (CBT) has an effective impact on treating various mental disorder. Its unique method and technique make a great contribution to individual therapy and even family or group therapy. As the latest treatment technology for depression, the combination of CBT and pharmacological intervention has been proved to achieve apparent success. With the improvement of CBT in clinical application, CBT is expected to achieve better results in treating adolescent depression.

REFERENCES