Int J Clin Exp Med 2016;9(2):4989-4994
www.ijcem.com /ISSN:1940-5901/IJCEM0017769

Original Article

The roles of family environment, personality and coping styles in adolescent depression

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Received October 13, 2015; Accepted January 27, 2016; Epub February 15, 2016; Published February 29, 2016

Abstract: Objective: Family environment, coping styles, personality characteristics played critical roles in the development of adolescent depression, their correlations with adolescent depression were explored in depth. Methods: The participants were divided into 3 groups. The samples in groups A and B were the ones who have been diagnosed as major depression. Group A was treated with sertraline, group B was treated with a combination of sertraline and cognitive behavioral therapy. Group C was a control group and consisted by mentally healthy teenagers. They were asked to fulfill the questionnaires/scales of family environment scale (FES), Eysenck personality questionnaire (EPQ) and simplified coping style questionnaire (SCSQ). Their general socio-demographic characteristics and scores of the questionnaires/scales for each group were evaluated. Results: There were significant differences in scores between groups A/B and group C after treatment ($P < 0.01$ or $P < 0.05$). The further analysis revealed that all the scores of subscales, except positive coping in group A and expressiveness, conflict, achievement orientation, control, positive coping, negative coping in group B were significant different with group C ($P < 0.01$ or $P < 0.05$). Conclusion: A harmonious family environment, healthy personality characteristic and mature coping style were essential factors in preventing and reducing adolescent depression.

Keywords: Adolescent depression, family environment, personality characteristic, coping style

Introduction

Depression is a serious mental disease, it is a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feelings and sense of well-being. The World Health Organization (WHO) has found that mental disease caused a considerable global disease burden [1]. It is a reaction to occurring life events or circumstances, a symptom of a medical condition, or a symptom of certain psychiatric syndromes, such as the mood disorders major depressive disorder and dysthymia. As a special period in one's life, the physiology and psychology are changed dramatically in adolescence. In recent years, the morbidity is increasing gradually and the onset age of is becoming younger. Prevalence data on depressive disorders in Western industrialized nations ranged from 3.2% to 8.9% for teenagers [2]. More and more teenagers suffered from it and leaded to serious social and educational impairments.

Adolescent depression is often recurrent and continues episodically into adulthood. As revealed by the retrospective investigations on adult depression, most of their first episode occurred in the adolescence [3]. In some respects, adolescent depression is regarded as an early-onset subform of the equivalent adult disorder [4]. The clinical features and patterns of neural activity are very similar to that in adults, but there also existed important differences among the disorders. Adolescence is an important period in one's life, in this period, their physiology and psychology are in a rapid change and development. They faced with academic stress and growing puzzles at the same time, the depressive manifestations or behaviors are always regarded as "normal" in this particular situation. Thus, most of them were misunderstood as idleness or disobedience, and even were misdiagnosed as primarily conduct, attentional, or substance abuse disorders; or seen as a stage the youths are going through [5].

Studies have shown that [6, 7] the risk of depressive episode in adulthood for the depressive teenagers was four times higher than that

of general population, and also with the higher risk of merging other co-morbid conditions, including substance use disorders, cognitive disorders and a heightened risk of suicide. Hence, early diagnosis and effective intervention to adolescent depression is of great importance. In this study, we focused on the first-episode depressive teenagers, to explore the effect of the family environment and personality as well as coping styles on the adolescent depression. We resorted to this study to provide theoretical basis in the early prevention and treatment for adolescent depression.

Materials and methods

Participants

A total of 242 teenagers were chosen in department of psychology, the first affiliated hospital of Zhengzhou University from Sep. 2009 to Aug. 2013. All of them were students in senior high school and aged from 15 to 18 years. All of them were first-episode depression and did not receive any systematic treatment. Their diagnosis were relied on the *Chinese Classification and Diagnostic Criteria of Mental Disorders,* 3rd ed., (CCMD-3) [8] by a chief physician and an associate chief physician, and their score of Hamilton Depression Rating Scale (HAMD-24) was higher than 25 [9]. Serious mental disorders, such as bipolar disorder, schizophrenia, organic mental disorder were ruled out in the study. 228 healthy students in senior high school were elected as control group. There were no differences in the distributions of gender, age and grade between depressive teenagers and healthy teenagers. Informed consents were obtained from all the participants.

Instruments

All participators completed the following scales. The Family Environment Scale (FES) [10], the scale was published by Moos and developed to measure social and environmental characteristics of all families. It is a 90-item inventory that has 10 subscales (cohesion, expressiveness, conflict, independence, achievement orientation, intellectual-cultural orientation, active-recreational orientation, moral-religious emphasis, organization and control) measuring interpersonal relationship dimension, the personal growth, and the system maintenance. *Eysenck Personality Questionnaire (EPQ)* [11], the questionnaire was devised by the psychologists Hans Jürgen Eysenck and Sybil B. G. Eysenck. It was used for the assessment of personality traits, and comprised 4 sub-scales (psychoticism, extraversion, neuroticism and social desirability), totally 90 ture-false items. *Simplified Coping Style Questionaire (SCSQ)* [12], the questionnaire is a 20-item scale. The copying styles in this questionnaire were classified into two categories: items 1 to 12 reflect positive coping style, and items 13 to 20 reflect negative coping style.

Procedure

242 depressive teenagers were assigned randomly into group A (n = 120) and group B (n = 122). All of them had oral antidepressant Sertraline Hyochloride Dispersible Tables (Zoloft) therapy for 8 weeks. The mean dose was 88.63±38.47 mg per day and it was adjusted appropriately based on the efficacy and side effects. For group B, except the pharmacotherapy described above, they were also treated with cognitive behavioural therapy by two professional psychiatrists. Take the clinical symptoms, family environment, personality trait and copying style of the depressive teenagers into consideration, the psychiatrists provided targeted and personalized treatment schedule for them. It was conducted to find out their irrational beliefs, and improved their negative feelings. Cognitive behavioural therapy lasted for about 45 to 60 min for each time, and implemented once a week for 8 weeks.

228 healthy students completed the questionnaires and regarded as normal control control group (group C).

Statistical analyses

Statistical analyses were performed using SPSS 16.0 software. t test and χ^2-test method was adopted to evaluate the measurement data and count data, respectively. The variance analysis was performed to compare the difference between the three groups. $P < 0.05$ was considered to be statistically significant.

Results

General information

The characteristics of depressive teenagers and normal teenagers were listed as following:

Table 1. The scores of each group after treatment

	Group A	Group B	Group C	*P*
Expressiveness	4.90±1.02	6.52±1.01	6.75±0.99	0.00
Conflict	4.05±1.20	2.39±1.28	2.37±0.82	0.00
Independence	5.67±0.90	6.27±1.06	6.81±1.07	0.00
Achievement orientation	4.63±1.16	6.42±1.11	6.72±0.98	0.00
Intellectual-cultural orientation	3.80±1.29	5.88±1.29	6.33±0.97	0.00
Active-recreational orientation	3.18±1.01	5.50±1.32	6.09±1.01	0.00
Moral-religious emphasis	4.08±0.98	5.77±1.06	6.65±1.03	0.00
Cohesion	5.15±0.84	6.13±1.32	8.30±0.65	0.00
Organization	4.00±1.15	6.03±1.30	6.57±1.12	0.00
Control	3.47±0.93	5.40±1.13	5.80±0.88	0.00
Psychoticism	46.42±9.39	50.25±12.50	36.12±5.68	0.00
Extraversion	50.42±11.62	46.67±2.03	55.53±7.73	0.00
Neuroticism	51.50±10.83	52.83±11.06	47.76±5.45	0.00
Social desirability	47.17±8.84	42.67±10.10	37.43±9.99	0.00
Positive coping	18.18±5.07	21.03±5.11	19.96±6.94	0.02
Negative coping	9.78±3.29	6.40±3.31	6.19±3.00	0.00

Table 2. Pairwise comparison of the scores with group C

	$\bar{X}_A$-$\bar{X}_C$	$\bar{X}_B$-$\bar{X}_C$
Expressiveness	-1.85[a]	-0.12
Conflict	1.68[a]	-0.32
Independence	-1.14[a]	0.46[a]
Achievement orientation	-2.09[a]	-0.10
Intellectual-cultural orientation	-2.53[a]	-0.45[b]
Active-recreational orientation	-2.90[a]	-0.59[a]
Moral-religious emphasis	-2.57[a]	-0.88[a]
Cohesion	-2.91[a]	-1.62[a]
Organization	-2.57[a]	-0.53[a]
Control	-2.33[a]	0.10
Psychoticism	10.29[a]	14.12[a]
Extraversion	-5.11[a]	-8.86[a]
Neuroticism	3.73[b]	5.07[a]
Social desirability	9.74[a]	5.24[a]
Positive coping	-0.98	1.98
Negative coping	3.59[a]	0.20

[a]$P < 0.01$, [b]$P < 0.05$.

the average age was 16.73±1.31 years old for group A, 57 were male, 63 were female; the average age was 16.71±1.33 years for group B, 60 were male, 62 were female. There were no significant differences in the scores of each scale/questionnaire before treatment ($P > 0.05$) between group A and B. 228 teenagers (112 male and 116 female) in group C with an average age of 16.67±1.17 years old. There were no significant differences in gender, age, education level and other socio-demographic characteristics ($P > 0.05$) among the three groups.

The changes of scores after intervention

The scores of FES, EPQ and SCSQ were shown in **Table 1**. In FES, the scores of conflict subscale after treatment for group A and B were higher than that of group C ($P < 0.01$), but the other 9 subscales were significantly lower ($P < 0.01$). In EPQ, the scores of extraversion subscale after treatment for group A and B were lower than that of group C ($P < 0.01$), and the other 3 subscales were significantly higher ($P < 0.01$). In SCSQ, the scores of positive coping after treatment for group A and B were lower than that of group C ($P < 0.05$), and that for the negative coping were just the opposite ($P < 0.01$).

Table 2 presented the contrastive analysis with group C as control. After treatment, the scores of subscales showed significant difference between group A/B and group C ($P < 0.01$ or $P < 0.05$), except positive coping for group A and expressiveness, conflict, achievement orientation, control, positive coping, negative coping for group B.

Discussion

Teenagers were a special population whose bodies and minds are in the rapid development,

and thus they were easily influenced by various factors. In this special period, their psychological reaction to external environment was more sensitive. They had more difficulties in dealing with the complex interpersonal relationship and other stressful events. When confronted difficult positions, they became fragile and easy to be defeated. Over time, a series of physical and psychological problems arose, and brought a heavier burden to family and society. Adolescent depression is generally considered to be resulted from both biology factors, psychological factors and social factors. Except the chemical inbalance in the nervous system, other elements such as family environment, coping styles, personality characteristics also played critical roles.

For the treatment of adolescent depression, sertraline is the one of the most commonly used antidepressant drugs, which has been verified to be effective and safe. Cognitive behavioural therapy is a talking therapy that can help the recipients manage their problems by changing the way of think, it could overcome the adverse reactions and drug dependence of medication treatment. Paul Rohde [13] found that the combination therapy was superior to medication alone or cognitive behavioural therapy alone. Cognitive behavioural therapy has always been used in the adult depression treatment, and more and more researches proved that it also exerted functions to children and teenagers [14-16].

Family environment strongly influenced teenagers. The family relationships, behaviors, emotional communications, cultural qualities and ideologies produced imperceptible influence on their growth. As represented in abundant foreign researches [17-19], the depressed symptoms of teenagers can be relieved efficiently by improving their family relationship. In this study, compared with group C, the scores of FES for group A showed a statistically significant difference. The result indicated that there is a lack of common moral notion and cultural value orientation among family members. Besides, their family life was monotonous and without enough interests in daily activities. The bad family cohesion and organization made the help/support obtained from other family members were limited. However, group B did not perform significant differences in the scores of expressiveness, conflict, achievement orientation and control subscales compare with group C. The findings forecasted the good therapeutic effect of cognitive behavioural therapy. After treatment, teenagers could express their inner feeling actively with their family members and achieved affective communication. As the emotional problems and psychological conflicts were resolved timely, the contradictions and conflicts were dropped obviously. But, there were significant differences in the score of independence, intellectual-cultural orientation, active-recreationalorientation,moral-religiousemphasis, cohesion and organization. This might be explained by the less pronounced result of cognitive behavioural therapy in the combined therapy, or the functions in the emotion improvement were not fully realized.

The incidence of depression is varied with different personality characteristics. Neuroticism was often used in the description of unstable emotion, irritability, anxiety, irritation, impulsion and other personal traits. The study by Rudolph and co-workers [20, 21] believed that such traits predicted the generation of stress and the emergence of depression, and heightened the risk for depression. In this study, the scores of EPQ between group C and group A/B were statistically significant. The findings showed that there was a higher possibility of the depression for humorsome teenagers. They reacted intensely to the various stimulations, and were hard to calm themselves down in a short time once the negative emotion were aroused. Hence, humorsome teenagers were less able to adapt to the normal environment and life, and more susceptible to depression.

Coping style is broadly defined as the individual cognitive and behavioral efforts to moderate the impact of stressful events, it has a close relationship with self-assessment [21]. In our study, the scores of negative coping in SCSQ was significant different between group A and C. The findings indicated that depressed teenagers adopted negative coping style in face of pressure, rather than by a controlled and rational manner. They always over-reacted and behaved immaturely, which was consistent with the study of Song [22]. As reported by other research [23], the negative coping style of adolescent depressive patients could be changed by cognitive behavioural therapy, and thus reduing the risk of depression. For group B, there were no significant differences compared with

group C. The combined therapy influenced the ability of teenagers to cope with different stresses. After treatment, their psychological health levels were improved and tended to adopt the positive coping style when dealt with stressful situations.

Based on the findings in this study, family environment, personality and coping styles as well as other factors were related to adolescent depression. In the future research, the association between each factor and depression should be taken into consideration, and effective interventions for depression were also needed. During the follow-up, the feedbacks from families and school revealed that the depressive symptoms of participants were decreased gradually, and came back to their normal life and study. But the long-term therapeutic effect and recurrence prevention of cognitive behavioural therapy remained to be further examined by a large-scale samples and long term follow-up.

Disclosure of conflict of interest

None.

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