

The Relationship Between Anxiety, Depression and Academic Record: Based on the Study of N Middle School

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Abstract

To understand the general situation of middle school students' learning anxiety and depression, this paper analyzes the characteristics of middle school students' learning anxiety and depression, and relationship with their academic performance and mental health. SDS and SAS were used to investigate 1047 middle school students. According to the results, the students were divided into an excellent group, good group, pass group and fail group. After two months of counseling and psychological guidance, the students with anxiety and depression were evaluated again. The results showed that the incidence of depression was 41.55% and the incidence of anxiety was 40.40%. The moderate anxiety and depression of excellent group and good group were higher than those of pass group and fail group. The mild and severe anxiety and depression of pass group and fail group were significantly higher than those of excellent group and good group. The scores of depression and anxiety test before and after psychological counseling were significantly reduced ($P < 0.01$), and the scores were significantly increased ($P < 0.01$).

Keywords

Middle school students; anxiety; depression; academic record.

1. Introduction

At present, the conflict between the state of middle school students' learning anxiety and the requirement of learning achievement forces educators to think about the relationship between learning achievement and learning anxiety and its influencing factors. Learning anxiety refers to students' anxiety about their studies, mainly refers to a kind of negative emotion in the process of learning. Learning anxiety is a kind of anxiety, fidgety, nervous and even panic psychology that students are afraid of learning effect is not ideal, and can not meet the expectations of teachers, parents and themselves. [1] Learning anxiety is a psychological reflection of students' uneasiness or unhappiness caused by some internal contradictions. It is a specific state of tension among students. It is normal to have an anxiety reaction. Moderate tension can maintain the excitement of learning, enhance the enthusiasm and consciousness of learning, improve attention and response speed, etc. So it is necessary to maintain a certain degree of tension in the process of learning. But, if the adjustment is not good, it will bring certain negative effects to learning. Middle school is the key period of individual development, in which learning plays a very important role. Under the background of taking academic performance as the most important index to evaluate middle school students, the learning anxiety of middle school students in the learning process has become one of the most prominent psychological problems of middle school students, and it is also the key and difficult problems to be solved urgently in the school mental health education.

In the past, the research on learning anxiety and learning achievement were limited to the relationship between them. For example, there are different views on the relationship between learning anxiety and learning achievement in China. The level of learning anxiety is significantly

negatively related to learning achievement. The relationship between learning anxiety and learning achievement is "inverted U" type, that is, students with medium level anxiety have the best learning achievement. There is a view abroad that "there is a strong demand for the guidance of learning strategies for students who are anxious about examinations and the new semester, and students who are anxious about examinations are pessimistic about their academic achievements.". Therefore, this paper investigates and analyzes the practice of students' anxiety, depression and learning achievement in a middle school, to provide a basis for mental health education of middle school students.

2. Objects and Methods

2.1. Objects

1047 students who voluntarily participated in the investigation and agreed to receive psychological counseling and guidance from classes in N Middle School of K city.

2.2. Research Methods and Groups

After the mid-term examination, with the assistance of the headteacher, the psychiatrist explained the purpose and significance of this study and conducted a questionnaire survey based on the principle of voluntariness. The self-assessment of depression (SDS) and self-assessment of anxiety (SAS) were used for psychological assessment [2]. Students were anonymous (need to fill in the total score of their mid-term examination of culture course), and answered papers independently. In addition, the items that they didn't understand were explained by psychiatrists. The average score of each subject of the total score of the examination (the standard score after the original score processing) was used as the grouping method. The above 85 points were divided into the excellent groups, 70-85 points were divided into the good groups, 60-69 points were divided into the pass groups and below 60 points were divided into the fail groups.

For the students with depression and anxiety, anxiety and depression counseling and individualized psychological counseling were carried out for 2 months. After that, these students anonymously (need to fill in the total score of their own final exam culture course) used SDS and SAS [2] to carry out psychological evaluation and final culture course total score evaluation. The scores of the two tests are the standard scores after the original score processing. SDS consists of 20 statements and corresponding questions, each item is equivalent to one related symptom, including: ① Psychotic emotional symptoms, including depression and crying. ② Physical disorder, including 8 items of the daytime difference of mood, sleep disorder, anorexia, hypolibia, weight loss, constipation, tachycardia, and fatigue. ③ Psychomotor disorders, including two items of psychomotor retardation and agitation. ④ Psychological disorders of depression, including eight items, including confusion, hopelessness, irritability, indecision, self-depreciation, emptiness, repeated thinking, suicide and dissatisfaction. All of them were graded as 1-4: 1 = never or occasionally; 2 = sometimes; 3 = often; 4 = always. SDS statistics total table score, the sum of all scores is the total rough score, and the standard score is an integral part of the rough score multiplied by 1.25. The standard score was no depression below 50, mild depression from 50 to 59, moderate depression from 60 to 69, and severe depression above 70. SAS includes 20 items: anxiety, fear, panic, madness, premonition of misfortune, tremor of hands and feet, physical pain, fatigue, inability to sit still, palpitation, dizziness, syncope, dyspnea, tingling of hands and feet, stomach pain and dyspepsia, frequency of urination, hyperhidrosis, facial flushing, sleep disorder, and nightmare. Similarly, the score is 1-4: 1 = never or occasionally; 2 = sometimes; 3 = often; 4 = always. The evaluation index is a standard score (standard score = rough score × 1.25). The standard score is no anxiety

below 50, mild anxiety from 50 to 59, moderate anxiety from 60 to 69, and severe anxiety above 70.

2.3. Statistical Analysis

SPSS16.0 statistical software package was used for statistical processing. The measurement data were expressed by $\pm s$, the analysis of variance (i.e. F test) was used for comparison between groups, and LSD-t test was used for comparison between groups. The measurement data were expressed by ratio or percentage, and χ^2 test was used for comparison between groups, with $P < 0.05$ as the difference.

3. Results

3.1. The First Evaluation Result

In the first (middle) depression evaluation, 435 people were found to have depression symptoms, accounting for 41.55%, while 423 people had anxiety symptoms, accounting for 40.40%. There were 186 excellent groups, 594 good groups, 159 pass groups and 108 fail groups in the mid-term examination.

3.1.1. Comparison of Depression Scores in Different Achievement Groups

There was no significant difference in the scores of depression and the percentage of the total number of students with different degrees of depression ($P > 0.05$). The moderate depression of excellent group and the good group was higher than that of the pass group and fail group ($P < 0.05$), and the severe depression of the pass group and fail group was significantly higher than that of the excellent group and good group ($P < 0.01$). See Table 1.

Table 1. Average score of mid-term examination and depression of all students in n middle school

Group	Number	Depression score	Mild depression		Moderate depression		Severe depression		Total	
			Number	Incidence rate (%)	Number	Incidence rate (%)	Number	Incidence rate (%)	Number	Incidence rate (%)
Outstanding group	186	62.44±10.57	21	11.29	51	27.42	3	1.61	75	43.32
Good group	594	61.31±11.80	87	14.65	138	23.23	6	1.01	231	38.89
Passing group	159	61.56±12.19	42	26.42b	15	9.43ab	21	13.21ab	78	49.06
Failing group	108	63.74±11.46	24	22.22ab	12	11.11ab	15	13.89ab	51	47.22
F/ χ^2 Number		0.250		6.312		8.614		24.569		2.323
PF/ χ^2 Number		>0.05		>0.05		<0.05		<0.01		>0.05

Note: a is compared with excellent group, $P < 0.05$, b is compared with good group, $P < 0.05$.

3.1.2. Comparison of Anxiety and Achievement

There was no significant difference in anxiety scores and the percentage of the total number of students with different anxiety levels ($P > 0.05$). The incidence of anxiety in the pass group and the fail group was higher than that in the excellent group and the good group. The moderate anxiety in the excellent group and the good group was higher than that in the pass group and the fail group. The mild anxiety and the severe anxiety in the pass group and the fail group were higher than that in the excellent group and the good group, but the difference was not statistically significant ($P > 0.05$). See Table 2.

Table 2. Average score and anxiety of all students in n middle school

Group	Number	Depression score	Mild depression		Moderate depression		Severe depression		Total	
			Number	Incidence rate (%)	Number	Incidence rate (%)	Number	Incidence rate (%)	Number	Incidence rate (%)
Outstanding group	186	65.18±9.98	18	9.68	45	24.19	9	4.84	72	38.71
Good group	594	64.47±10.46	84	14.14	123	20.17	27	4.55	234	39.39
Passing group	159	64.81±10.11	36	22.64	18	11.32	15	9.43	69	43.39
Failing group	108	63.45±11.07	21	19.44	15	13.89	12	11.11	48	44.44
F/ χ^2 -score		0.460		4.423		4.062		3.657		0.599
PF/ χ^2 -score		>0.05		>0.05		>0.05		>0.05		>0.05

3.2. Comparison of Psychological Evaluation and Achievement Before and After Psychological Guidance

3.2.1. Comparison of Depression Evaluation and Scores of Depression Students Before and After Psychological Counseling

In the first period, 435 people had depressive symptoms. After psychological counseling, 297 people had depressive symptoms in the second period (the end of the period), and the rest 138 people had no depressive symptoms. Before and after psychological counseling, the scores of depression were significantly reduced and the scores were significantly increased ($P < 0.01$ and $P < 0.05$). See Table 3.

Table 3. Depression assessment and score of students with depression in N middle school before and after psychological counseling($\bar{x} \pm s$)

Project	Number	Mild depression			Moderate depression			Severe depression		
		Number	Score	Result	Number	Score	Result	Number	Score	Result
Midterm	435	144	56.04±4.47	68.42±5.18	216	66.2±3.1	65.27±6.22	45	78±7.45	62.86±7.59
End of term	297	183	45.89±5.02	75.29±6.53	96	57.11±4.19	71.58±6.17	18	69.51±7.43	68.11±8.94
t-score			76.563	9.141		17.570	7.807		9.080	4.933
P-score			<0.01	<0.01		<0.01	<0.01		<0.05	>0.05

3.2.2. Comparison of Anxiety Assessment and Achievement of Anxiety Students Before and After Psychological Counseling

In the first (middle) anxiety test, 423 people had anxiety symptoms. After psychological counseling, 276 people had anxiety symptoms in the second (end) anxiety test, and the rest 147 people had no anxiety symptoms. Before and after psychological guidance, the score of anxiety test decreased significantly and the score increased significantly ($P < 0.01$ and $P < 0.05$), as shown in Table 4.

Table 4. Anxiety assessment and score of N middle school anxiety students before and after psychological counseling

Project	Number	Mild depression			Moderate depression			Severe depression		
		Number	Score	Result	Number	Score	Result	Number	Score	Result
Midterm	423	159	56.45±4.31	69.27±6.49	201	65.27±6.15	65.27±6.15	63	76.41±5.42	63.84±6.82
End of term	276	132	46.18±6.27	74.34±5.27	108	72.40±6.78	72.40±6.78	36	65.46±6.59	69.19±7.01
t-score			9.523	4.165		5.412	5.412		5.162	2.146
P-score			<0.01	<0.01		<0.01	<0.01		<0.01	<0.05

4. Discussion

Middle school students are in an important period of physical and mental development and social maturity stage. The contradiction between ideal and reality often leads to the generation of negative emotions, which are mainly manifested as depression and anxiety, and anxiety and depression are often accompanied by each other and affect each other. Students with high anxiety also have high depression [3]. Depression hinders the healthy development of mental and physical development and intelligence of middle school students and even leads to the generation of suicidal emotions [4]. For the normal completion of students' studies and the healthy development of body and mind, it is the focus of parents, middle school educators and psychologists to explore the relationship between anxiety, depression, and learning of middle school students.

In the first depression evaluation, 435 people were found to have depression symptoms, with the incidence of depression accounting for 41.55%. 423 people had anxiety symptoms, with the incidence of 40.40%. It indicated that high school students' anxiety and depression were in common. Depression is a kind of bad emotional experience that individuals feel listless and depressed in a period of time. The SDS used in this study includes psychotic emotional symptoms, physical disorders, psychomotor disorders and psychological disorders of depression. Because the physical and mental development of middle school students is not mature, they are easily affected by living environment, learning pressure, and the endocrine system, immune system and digestive system, which are regulated by the negative feedback of the body, so bad emotions are easy to lead to further mental and physical obstacles. Anxiety refers to the individual's self-esteem and self-confidence are frustrated, or the sense of failure and guilt are increased, forming a nervous and fearful emotional state due to the inability to achieve the goal or overcome the threat of obstacles. SAS used in this study includes fear, panic, a premonition of misfortune, physical symptoms, sleep disorders, etc. It is used to assess people's subjective feelings, not affected by age, gender, economic status, and other factors. High school students have entered a special period of rapid physical and mental development and maturity stage, and in the period of psychological weaning [5]. At the same time, they are facing the college entrance examination, which is also a critical period of life. They are under the pressure of learning and life in many aspects, and their anxiety, panic, and misfortune anticipation about the future or environment will increase. What effect do depression and anxiety have on academic performance? In this study, it has been found that there was no significant difference in the depression scores and the incidence of different degrees of depression between the excellent group, the good group, the pass group, and the fail group, but the moderate depression and anxiety in the excellent group and the good group were significantly higher than those in the pass group and the fail group. Mild and severe depression and anxiety were significantly higher in the pass group and fail group than in the excellent group and good group, because moderate depression and anxiety can help students improve learning efficiency, enable students to maintain a moderate state of tension, and achieve good learning results. However, excessive or mild depression and anxiety can distract students' attention, and most of the people with high depression index have shown lower interest in external things, and prone to fatigue or listlessness, accompanied by decreased thinking ability and other phenomena, thus reducing learning efficiency [6]. In the first depression evaluation, 435 people had depression symptoms and 423 people had anxiety symptoms. According to some studies, students' depression and anxiety symptoms are closely related to the severity of test anxiety. The more serious the test anxiety is, the higher the detection rate of depression and anxiety symptoms [7]. In this study, 297 students with depression and anxiety had depression symptoms in the second depression evaluation, and 138 students had no depression symptoms. 276 had anxiety symptoms, 147 had no anxiety symptoms. The scores

of depression and anxiety were significantly reduced before and after psychological guidance, which indicated that the degree of anxiety and depression could be reduced after psychological guidance. After psychological counseling, the scores of the students with anxiety and depression symptoms in the first depression evaluation were significantly improved, which confirmed that the test anxiety was closely related to the students' bad psychological and pathological symptoms [7]. Therefore, psychological guidance can not only reduce the level of anxiety and depression, but also improve the learning efficiency of students, so that students can reduce the psychological burden, physical symptoms, physical and mental comfort, and more easily face the growing pains, life, and learning pressure.

5. The Countermeasures of Middle School Students to Deal With Anxiety

In conclusion, the results of this study suggest that anxiety and depression are common in middle school students and are important factors affecting their mental health. Under the background of the increasingly fierce social competition and the evaluation of middle school students with academic performance as the main indicator, the mental health problems caused by middle school students' learning are also increasing. It will not only have a great impact on students' academic performance, but also affect their future development, so it is very important to take necessary measures to intervene in severe learning anxiety.

5.1. School

5.1.1. Offering Mental Health Course

The opening of a mental health course is very necessary for the middle school students. This course mainly introduces people's psychological characteristics (including feeling, perception, memory, thinking, imagination), emotion, will, individual psychology (including character, ability, temperament, need, interest) and common psychological problems of middle school students, such as anxiety, depression, pressure, etc. Through the course, students can have a correct cognition of their psychological state, face up to some psychological troubles, and know that the existence of these troubles is normal and short-lived. With a correct understanding, students are less likely to be in a state of anxiety for a long time.

5.1.2. Regular Group Counseling Activities

Group counseling is a form of psychological counseling in a group situation. Take the group as the object, use appropriate activities and games to enhance the interaction between group members and deepen mutual understanding. First of all, group counseling can enhance individual interpersonal skills more than case counseling. Through the interaction among members, individuals can feel the formation of interpersonal relationships and the pleasure brought by good interpersonal communication. At the same time, the interpersonal skills can also be learned to enhance an individual's social ability. Secondly, through group activities, individuals enhance their sense of belonging, take pride in the group, protect the group image and honor, and reduce the social anxiety brought by loneliness. Thirdly, group counseling enriches individual feelings and expands the vision. Group members have different backgrounds and experiences, different perspectives on issues, and the group thought of middle school students is active. In group activities, they can find their flashpoint, enhance self-confidence, stimulate individual potential and enhance adaptability. The school can carry out group counseling activities in the class every other month, and the time can be controlled within 2 hours. Through games and activities, students' pressure and anxiety can be relieved, individuals' mood can be relaxed.

5.1.3. Encourage Individuals to Participate in Psychological Consultation

When the teachers find that some students in the class are anxious, which affects their study and life, the teachers can remind the students with psychological troubles at the class meeting.

They can communicate with the psychological teacher when he has "small troubles" rather than go to the psychological consulting room only when they are "sick". The psychological teacher will follow the principle of confidentiality and will not disclose personal information. When the individual talks to the psychological teacher, the psychological teacher is also acting as a listener, and the troubles will be reduced to some extent. At the same time, the psychological teacher through the appropriate guidance of professional knowledge will lead to individual anxiety reduced.

5.2. Teachers

While teaching knowledge, teachers should pay attention to "positive feedback" teaching, praise students' strengths more and criticize their weaknesses less. Students can be in a state of self-confidence, even if some of the results are not good, they believe that they can rise. Additionally, teachers should pay more attention to students and make them feel warm and caring in psychology, which is conducive to a positive personality.

5.3. Family

In the growth process of middle school students, family education and school education have the same important influence. Family atmosphere, parenting style, and educational level have a profound impact on children's inner world. As mentioned earlier, middle school students' learning anxiety is affected by their parents' expectations. In the face of children's learning, parents should encourage more and put less pressure, reduce children's worries, and do not punish children for poor performance or improper behavior. Parents should pay attention to improve their education quality, put forward reasonable expectations for their children, establish scientific education concepts, create a harmonious family atmosphere, and promote the all-round and healthy development of middle school students.

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