

# The Impact of Covid-19 on Adolescent's Anxiety

Ziheng Wang\*

*The High School Affiliated to Renmin University of China, Beijing, 100086, China*

*\*Corresponding author. Email: WANGZIHENG1224@126.com*

## ABSTRACT

Although the new crown virus has been controlled to a certain extent, it can still cause a lot of negative effects on the masses because of the increase in the number of infections per day and the initial cure rate of the patients. The continuous spread of the virus makes people feel panic and anxiety, and always worry that they are the next patient. Some people become irritable and helpless because they lack communication with others. For teenagers, the epidemic also has a great impact on their mental health. In this survey, there are 40 candidates, mainly from high schools in Beijing. The results show that the anxiety level of middle school students is significantly higher. COVID-19 may be an influential factor in middle school students' anxiety. The sudden changes in life and the fear of the epidemic may lead to varying degrees of psychological problems among these people.

**Keywords:** *anxiety, adolescent, mental health*

## 1. INTRODUCTION

Coronaviruses belong to the genus Coronaviridae of the order Cepoviridae, and are a group of RNA viruses with a capsid and a linear single-stranded positive genome, which can be divided into four genera:  $\alpha$ ,  $\beta$ ,  $\gamma$ , and  $\delta$  [1]. On March 11, 2020, the World Health Organization (WHO) announced that the epidemic had taken on global pandemic proportions, with the disease now spreading to more than 211 countries and regions worldwide [3]. In January 2020, it was named 2019-nCoV by the World Health Organization (WHO), the Chinese name for the "2019 new coronavirus", which belongs to the genus  $\beta$  coronavirus and is the seventh known coronavirus that can infect humans [1].

Although the new coronavirus has been controlled to some extent, it has had a negative impact on the population because of the increasing number of infections per day and the low initial cure rate of patients. Mental health problems may occur in patients with confirmed pneumonia, frontline health care workers in the prevention and control of the epidemic, patients with mild illness in home isolation, or the general public [4]. The general public is still the majority of those involved in the outbreak in various ways. As a result of receiving information about the new coronavirus from the outside world, the general public, who have been living at home for a long time and whose social activities have been drastically reduced, often develop different negative emotions. The constant rampage of the virus makes

people feel panic and anxiety, always fearing that they are the next sufferer. And some people become irritable, irritable and helpless because of their lack of interaction with others.

Children are not indifferent to the significant psychological impact of the COVID-19 Pandemic. They experience fears, uncertainties, substantial changes to their routines, physical and social isolation alongside high level of parental stress[5]. The Chinese Ministry of Education proposed on January 29, 2020, in order to prevent large population gatherings during classes: the use of online platforms to allow students to study normally at home in the form of online classes [6]. The restrictions put in place to contain the COVID-19 virus have led to widespread social isolation, impacting mental health worldwide[7]. Such an isolated form of learning also reduces the frequency of students' socialization with others and reduces the channels for students to confide their inner negative emotions.

### 1.1 Previously research for juvenile's anxiety

The history of anxiety research is as long as that of psychology, beginning with philosophical reflection and transitioning to empirical research [8]. The word anxiety is derived from the Latin word "anxiety", which means suffocation or strangulation. Nowadays, anxiety is defined as the fear of future events. Anxiety has been studied for more than 2000 years, but to this day, mental

health practitioners do not have a perfect method to prevent people from suffering from anxiety.

Adolescents most often experience anxiety, worries about school, depression, and anger, and some of them become addicted to electronic devices, online games, and may also exhibit aggressive or risk-taking behaviors [4]. Related studies have shown that the average anxiety level of Chinese high school students is higher than that of elementary school students and college students. Anxiety arises due to an individual's lack of knowledge about something and fear of the unknown. Students' anxiety generally manifests itself as distraction, low self-esteem, and self-doubt, etc. They are stressed about their studies, cannot control exams well, and do not adapt well at school. Excessive anxiety makes it difficult to concentrate, interferes with the process of memory, affects the activity of thinking, and is very harmful to physical and mental health. Moderate anxiety can increase alertness and efficiency in learning. However, because adolescents are at the stage of physical and mental maturity, if the pressure from the external environment and their own growth difficulties do not receive timely and appropriate psychological guidance, they will develop high anxiety, which will manifest as subjective anxiety experiences, outwardly stressful behaviors and symptoms of disturbance of vegetative nerve function, and directly affect their mental state and personality growth. [9]

### ***1.2 Previous studies on the effect of the epidemic on anxiety***

In prolonged home isolation, people (especially teenagers) become irritable, anxious and their mental health is greatly affected because they have no way to vent their negative emotions to friends or teachers as usual, and they accumulate over time. The possible impact of increased perceived social isolation during the current crisis is especially alarming from the perspective of the Evolutionary Theory of Loneliness[10], which posits that prolonged loss of reliable social bonds can result in self-preservation bias and implicit vigilance toward threats[11]. At the same time, loneliness was a predictor of response to high outcomes of the COVID-19 crisis, i.e., perception of risk of potential financial problems and stronger effective response to the impact of long-term isolation on psychological and social well-being[11]. A previous study has revealed that lonelier people have a stronger tendency for placing a high value on money, which has been suggested to be a safeguard against socioeconomic risks[12]. For example, because many industries are unable to function normally, the main source of income for many families is threatened and they face a series of consequences such as joblessness and unemployment. Such conditions can very easily interfere with people's psychology as well, and even make some people who are already somewhat anxious become more

so. Although the epidemic is now less severe within China than it was before, many people are still affected by the negative emotions they suffer from the epidemic.

### ***1.3 Current study***

Although previous studies have examined the effects of the epidemic on anxiety and the current status and factors of adolescent anxiety, there is a dearth of research on the epidemic, anxiety, and adolescents as a whole. Based on the previous studies, this paper focused on the effects of the epidemic on adolescent anxiety. One could argue that the epidemic exacerbates adolescents' anxiety levels. In order to test this concept, researchers selected 40 test subjects from several high schools in China, measured their anxiety levels through a questionnaire, and collected demographic information(e.g. gender, household income) on each individual to analyze the effects of different factors on adolescents' anxiety levels during the epidemic.

## **2. METHOD**

### ***2.1 Participants***

40 participants enrolled in this survey, including 21 male students and 20 female students. Most of these participants came from high schools in Beijing, as well as some of them from Guangzhou, Chongqing and other places. Twelve of the individuals were familiar with the researchers and were chosen through convenience sampling. The participation of these participants in this questionnaire was unpaid and voluntary.

### ***2.2 Materials***

Participants in this study completed the Anxiety Scale, which contained 11 items assessing their current anxiety level in their life. Responses were in degree of recognition format, and participants were required to rate specific anxiety Symptoms, on a Likert scale ranging from 1 (completely disagree) to 5 (completely agree). For example, item 11 stated, "I find it hard to make decisions easily[13]."

### ***2.3 Procedure***

An experimenter greeted participants before to their arrival. They first received an informative letter and gave their informed consent before the beginning of the questionnaire. The assessment was conducted by using the online questionnaire platform 'Questionnaire Star' to distribute the questionnaire. Participants were asked to read the questions carefully and then select the option that best matched their own situations. Participants were then fully debriefed and dismissed. The entire study took approximately 5-10 minutes to complete.

### 3. RESULTS

#### 3.1 General information

A total of 40 questionnaires were distributed in this study, and more than 40 valid questionnaires were returned, with a validity rate of 100%. The total score of the questionnaire was 50, and the total anxiety test score of secondary school students was  $32 \pm 9.66$ , so the overall anxiety level of secondary school students was high. More details could be saw in Table 1.

#### 3.2 Effect of gender on anxiety scores

We performed a between-group independent t-test to compare the differences between males and females on anxiety scores. The results of the analysis showed that boys and girls did not differ significantly in anxiety scores.

#### 3.3 Effect of being an only child on anxiety scores

We conducted a between-group independent t-test to compare the differences in anxiety scores between only children and non-only children. The results of the analysis showed that the differences in anxiety scores were not significant.

#### 3.4 The effect of the number of close friends on the score of anxiety

We conducted a between-group independent t-test to compare the differences in anxiety scores between the preparation subjects with less than or equal to three close friends and those with more than three close friends. The results of the analysis showed that the differences in anxiety scores were not significant.

#### 3.5 Effect of extracurricular course time on scores of anxiety

We conducted a between-group independent t-test to compare the difference in anxiety scores between the preparation tests with less than or equal to four hours of extracurricular course time and those with more than four hours of extracurricular course time. The results of the analysis showed that the differences in anxiety scores were not significant.

#### 3.6 Effect of household economic income on scores of anxiety

We conducted a between-group independent t-test to compare the difference in anxiety scores between the preparatory test with a household income of less than \$30,000 per month and the preparatory test with a household income greater than \$30,000 per month. The

results of the analysis showed that the differences in anxiety scores were not significant.

**Table 1.** Comparison of anxiety difference levels for demographic variables

| Factors                                           | Total score  | t     | p    |
|---------------------------------------------------|--------------|-------|------|
| <i>Gender</i>                                     |              |       |      |
| Boy (n = 21)                                      | 32.10±80.99  | -0.06 | 0.95 |
| Girl (n = 19)                                     | 31.89±111.99 |       |      |
| <i>Only child</i>                                 |              |       |      |
| Only child (n = 25)                               | 33.84±95.47  | -1.59 | 0.12 |
| Not only child (n = 15)                           | 28.93±79.92  |       |      |
| <i>Number of close friends</i>                    |              |       |      |
| ≤3(n = 9)                                         | 36.11±76.61  | -1.47 | 0.15 |
| >3(n = 31)                                        | 30.81±95.56  |       |      |
| <i>Length of extracurricular classes per week</i> |              |       |      |
| ≤ 4 hour (n = 27)                                 | 31.48±87.57  | 0.48  | 0.63 |
| >4 hour (n = 13)                                  | 33.08±111.41 |       |      |
| <i>Family income</i>                              |              |       |      |
| ≤30,000 yuan (n = 17)                             | 32.59±98.63  | -0.33 | 0.75 |
| >30,000 yuan (n = 23)                             | 31.57±91.08  |       |      |

### 4. DISCUSSION

A total of 40 test preparers were included in this survey, mainly from various high schools in Beijing. The results of the study showed that the anxiety level of high school students was significantly higher. The results of the study showed that the average anxiety level of the only child was slightly higher than that of the non-only child, and the average total anxiety score of the test subjects with less than or equal to three close friends was also slightly higher than the average total anxiety score

of the test subjects with more than three close friends. Schools should enhance psychological guidance and monitor the psychological status of high school students.

The new crown epidemic may be an influential factor in causing anxiety among high school students. Due to the sudden change in the life party Min ah and the fear of the epidemic may lead to different degrees of psychological problems in this group. The most common emotions among adolescents are anxiety and concern about school, accompanied by negative emotions such as depression and anger. Due to prolonged isolation at home, some high school students become addicted to electronic devices or online games because they have nothing to do [4].

Although there was no significant difference in total anxiety scores between only children and non-only children, the average anxiety level of only children was slightly higher than that of non-only children. This is because due to the absence of siblings, only children spend more time alone than non-only children and lack the opportunity and experience to communicate with their peers. Being alone for a long time and having fewer opportunities to talk to others will inevitably lead to negative emotional problems and some relative personality problems. For example, some only children are often self-centered, do not consider the feelings of others, and sometimes do not get along with others and often have strained relationships with them. This is accompanied by isolation, rudeness, and emotional anxiety [14]. The findings of Cheng Shuo, and Jia Cunxian, have been consistent with our findings, and they also found that the anxiety status of college students who are only children is more severe than that of non-only children. They suggested that there is also a correlation between whether only children are anxious and the parenting style. The educational style of some families is based on a critical approach, which can easily lead to anxiety [15]. According to Shen Yue and Ma Shichao, the higher the level of father's severity and the lower the level of mother's understanding of the child, the greater the likelihood of the child's loneliness and anxiety [16].

In addition, the mean total anxiety score of the test subjects with less than or equal to three close friends was also slightly higher than the mean total anxiety score of the test subjects with more than three close friends. Communicating with close friends and confiding in them is usually the main way for adolescents to express their emotions and socialize. Therefore, adolescents with less than three close friends may have negative emotions such as irritability and loneliness that accumulate in their minds for a long time and cannot be relieved, thus leading to anxiety. Lei Fang and Jia Yanjie et al. also found that the number of friends had an effect on the anxiety of left-behind children: left-behind children who had more friends (more than six friends) had lower anxiety scores

than those who had fewer friends (less than two friends) [17]. They believed that left-behind children received the most care and comfort from their friends when they encountered hardship, and therefore friends were the main source of moral support and help for left-behind children.

There are some shortcomings in this study. 1) The study sample needs to be expanded: our study sample came from high schools in different regions of China, but the overall sample size was small and the study findings have some limitations. Therefore, future studies could conduct a large-scale nationwide psychological survey of high school students.

2) Limited research factors for the generation of anxiety: Because junior or senior high school students face pressures from further education and high school entrance exams, these two groups may be more anxious relative to other grades. The ways in which high school students cope with anxiety also vary across age groups. Therefore, future studies could compare the psychological differences between students in different grades or at different ages.

3) The psychological status of only versus non-only children may be related to family economic conditions: families with good economic conditions may provide a better environment for healing from anxiety, such as finding counseling, social support, and other aspects. Also, there may be differences between only and non-only children in terms of where they live: e.g., rural versus urban. Therefore, future studies can compare more factors about only and non-only children themselves to compare their anxiety.

4) In editing the questionnaire, we only discussed the psychological impact of friends and family on the sample. In future studies, we can analyze more factors that can affect the psychological status of high school students, such as their own personality factors and the educational environment they receive.

## 5. CONCLUSION

The current study focused on investigating the effects of the new crown epidemic on the psychological anxiety of high school students. In summary, this paper shows that: 1) high school students had higher levels of anxiousness; 2) only children's anxiety levels were slightly higher than those of non-only children; 3) the average total anxiety score of the preparation test with fewer than or equal to three close friends was slightly higher than that of the preparation test with more than three close friends. This study can help high school psycho-educators to better address students' psychological anxiety when conducting educational activities so that students can obtain better educational outcomes.

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