

To What Extent Has COVID-19 Exacerbated High School Students' Anxiety?

Diyun Zheng

Nanjing Foreign Language School

*Corresponding author: Diyun Zheng. Email: 2351215032@qq.com

ABSTRACT

As the COVID-19 epidemic emerged, not only has people's physical health been seriously threatened, but their mental health conditions also have been negatively affected. Under such circumstances, high school students' emotion problems, especially anxiety, should be taken seriously. As students suffered immensely from external and internal stress, like large amounts of homework, exams and worries towards the future, they are also psychologically immature as they are still at a relatively young age. To study the conditions of anxiety of senior high students during periods of COVID-19 epidemic, this research released the COVID19 epidemic KAP questionnaire and Self-rating Anxiety Scale(SAS)online and finally received 136 students' data. The results showed that 41.9% of high school students suffer from anxiety problems. Among these students 3.67% (5/136)are suffering from severe anxiety, and moderate anxiety exists in 2.9% of students (4/136), while mild anxiety is found in 35.29%(48/136)of students. In addition, the students' attitude toward the epidemic and their actions taken to prevent the virus have a significant positive correlation ($r = 0.258$, $p < 0.01$). Senior high students' anxiety conditions 9significantly negatively correlated with their attitudes towards COVID19 ($r = -0.273$, $p < 0.01$),while high school students' anxiety has no obvious correlation with their actions toward epidemic. The results indicated that senior students though do well in knowledge, attitudes and behaviour during periods of COVID19 ,they still feel anxiety in everyday life, and holding a positive attitudes can help to reduce general anxiety.

The results indicated that high-school students' anxiety levels were negatively affected by the COVID-19 epidemic though most of the students have comprehensive knowledge, proper protection methods and positive attitudes towards the epidemic

Keywords: COVID-19, High School Students, Anxiety.

1. INTRODUCTION

In December 2019, a patient with unexplained pneumonia appeared in a hospital in Wuhan, Hubei, and the outbreak of pneumonia caused by the new coronavirus began to break out. Since the epidemic began to spread in various countries and the number of infections showed a rising trend, the World Health Organization listed the COVID19 epidemic as a "public health emergency of international concern". The epidemic spread rapidly around the world, and it has had a huge impact on human health and social stability. At the same time, it cannot be ignored that the epidemic has also seriously endangered public mental health. The government's measures such as lockdown and isolation, as well as the 'information epidemic'(insert citation) caused by social media and the internet, have brought a large number of negative effects on the mental health of

people, resulting unemotional reactions such as panic and anxiety .During this epidemic, patients, medical personnel and other citizens working at the front-line have received the most attention due to the greater susceptibility caused by their work (could insert citation). Researchers have conducted a lot of studies around these groups, and generally drew the conclusion that COVID-19 has a negative impact on people's mental health [1].

For high school students, they are still experiencing tremendous changes physically and psychologically, and this immaturity in mental and physical states will easily lead to emotional fluctuations. Also, under unique social and cultural background in China, the fierce competition and heavy pressure of schoolwork along with the changes in lifestyle and ways of having classes brought by COVID19 epidemic would naturally lead to

students' anxiety. Anxiety is a negative emotional experience perceived when an individual is unable to cope with a received threat, so the states of anxiety of high school students deserves attention. Existing studies lack the attention paid to the anxiety of Chinese high school students during epidemic. Most of researches focus either on hospital staff or a general combination of psychological disorder, and the discussion on anxiety is not in-depth enough. Therefore, this paper intends to use a qualitative research method in questionnaire to study more about the current situation of high school students' anxiety under the background of the epidemic. This study would be helpful for understanding the conditions of high school students' anxiety states, and propose corresponding intervention measures to help high school students adjust their emotions and relieve their anxiety.

2. LITERATURE REVIEW

2.1. Anxiety: Definition and Classification

Anxiety is defined as an individual's negative and complex emotional state of nervousness, worry, annoyance, etc caused by possible, upcoming danger or threat which means that anxiety is a negative emotional experience when not being able to handle threats. Moderate anxiety in daily life is normal, but anxiety will become an anxiety disorder if it becomes severe to a certain extent. Anxiety disorder can be roughly divided into two types: specific phobia and generalized anxiety disorder. There are various ideas on how anxiety is formed, in addition to external conditioned reflex, it is also influenced by individual cognitive evaluation capabilities: such as dysfunctional ways of thinking, personality tendencies, and other physical and mental conditions. In general, worry is the basic feature of anxiety, manifested as defensive or evasive behaviour.

2.2. Anxiety: theory and Measure

2.2.1. Theories

There are three main theories about causes of anxiety and what anxiety is listed below:

Psychoanalysis is the first to look into the concept of anxiety. Freud's theory of anxiety aroused academic interest and attention to anxiety. Freud think that personality is composed of three parts: self, ego and superego and proposed two anxiety theories: the first anxiety theory and the second anxiety theory. The first anxiety theory holds the opinion that anxiety is transformed from the repressed libido and the self is the root of anxiety. In the second anxiety theory, Freud divided anxiety into two stages, namely the original anxiety stage and the subsequent anxiety stage, and using the conflict among self, ego and superego to explain anxiety.

For humanistic psychologists, anxiety is an inevitable mental phenomenon that is caused by internal conflict of humans, Goldstein (1878), representative of humanism, points out that anxiety is an emotional response caused by the accumulation of inconsistencies between one's ability and self-acquisition. Maslow (1943) pointed out in his hierarchy of needs theory that when people's basic needs are not met, psychological threats may occur which would lead to the occurrence of psychological disorders like anxiety.

Behaviourist believe that anxiety is a response acquired through learning, emphasizing such concepts as drive, cue, response and reinforcement. Mervell regarded anxiety as the conditioned reflex of painful response, which could prevent the reappearance of painful unconditional stimulus or motivate the defensive response. while Skinner views anxiety as a basic conditioned response of aversion; Bandura believes that anxiety is a functional deviation in human existence, which has a mutual restriction effect with self-efficacy.

2.2.2. Measuring Anxiety

Some widely used measures for anxiety include Hamilton Anxiety Scale compiled by Hamilton (1959); Psychiatric clinical scale for the measurement of psychosis and anxiety; Baker Anxiety Scale (BAI) for adults that r compiled in 1985; Self-rating Anxiety Scale (SAS) compiled by Zung in 1971. In addition, there are also scales made according to the types of anxiety, including: social anxiety scales, such as the social avoidance and distress scale of Watson and Friend (1969) and the social anxiety scale developed by Chinese scholar Zhao Yong; Exam anxiety scales such as Sarason's test anxiety scale; Employment anxiety scales, like the employment anxiety scale for higher vocational college students compiled by Cao Hui et al and the employment anxiety scale compiled by Zhang Xiaoqin, etc.; Existential anxiety scale, such as the Existential Anxiety Questionnaire (EAQ) compiled by Weems et al.

Self-Rating Anxiety Scale was used in this survey to evaluate the psychological state of the included patients. The 20 items were evaluated by 4-level scoring method. The integral part obtained by multiplying the score of 20 entries by 1.25 is used as the standard score. The demarcation value was 50. Normal: the score was <50; Mild anxiety: 50 to 59; Moderate anxiety: 60 to 69; Severe anxiety: ≥ 70 points, the higher the score, the more serious the anxiety is.

2.2.3. Research Relating to the Epidemic and Mental Health

There have been many studies on the impact of the outbreak of COVID19 pandemic on the mental health of people, such as the anxiety, depression and somatic

symptoms of 106 patients with COVID [3]. At the same time, the study on the anxiety situation and influencing factors of medical staff showed that 38.7% of medical staff suffer from anxiety disorder, and young medical staff were more likely to have mental health problems. A study on the psychological status of primary and secondary school students in Anhui Province showed that the anxiety level of primary and secondary school students who were isolated at home during the epidemic period of the novel coronavirus pneumonia was generally not high, and the primary and secondary school students who learned of the epidemic from different channels showed varying degrees of anxiety [4]. The study of anxiety during the epidemic period of college students reached the conclusion that the anxiety level of college students during the epidemic period was higher than the normal pattern, and the degree of anxiety was significantly correlated with their gender, level of study, subject, and average time spent online of college students [5]. In summary, previous studies have concluded that factors that may affect people's anxiety in the epidemic include age, whether anyone around is sick, the degree of understanding of negative news, the degree of satisfaction with government policies, one's own subjective judgment on whether the epidemic will be improved, etc.

However, through the literature review, this paper also found out that research targeted at high school students is of a relatively small amount. Although objectively speaking, high school students were less likely to have direct contact with the virus, and the risk of infection is far less than nurses and doctors, but as their brain and emotion control is still developing, also that Chinese high school students face with the huge amount of pressure from college entrance exams etc, I think it is vital to study their anxiety conditions in the context of the outbreak. The following hypotheses were proposed: (1) The more positive the overall attitude of high school students towards COVID-19, the lower their anxiety scores; (2) The more adequate the epidemic prevention and control behaviour of senior high school students, the lower the anxiety scores.

3. METHOD

3.1. Participants

From late in March in 2021 to early in April in 2021, volunteers took part in this study ,through filling in the online questionnaire on social media platforms QQ and WeChat, 137questionnaires were collected and 136 of the 137 questionnaires were effective (an effectiveness of 99.2%), among the 136 students taking part, male accounts for38.97%(53/136), female takes up 61.3% (83/136); Grade one students took up 63.97%(87/136), senior 2 students took up 28.86%(39/136), senior 3 students took up 7.53%(10/136). Art students took up

33.09% (45/136), Science students took up 38.97% (53/136), others took up 27.94% (38/136)

3.2. Materials

Intended to use questionnaires to study high school students. The digital questionnaires are delivered through Wen Juanxing and participants fill the questionnaires online. One IP can only answer the questionnaire once. Questionnaires used include COVID19 epidemic KAP questionnaire, SAS self-rating scale and survey of demographic information. Among the questions used, the survey of demographic information includes the participants' gender, age, how much attention they pay on the epidemic (rate from 1 to 7), the conditions of people around them (infected or not) and whether they have been living in what considered as medium and high risk area.

3.2.1. KAP Questionnaire

Using the KAP questionnaire compiled by Liu Mingchang et al, which contains 3 parts: knowledge, attitudes and behaviour. The contents include 6 questions about the knowledge relating to the epidemic, 3 questions relating to attitudes and 8 questions relating to behaviours.

3.2.2. Self-rating Anxiety Scale

The Self-rating anxiety scale (SAS) which was compiled by Zung in 1971, containing 20 items and is divided into 4 grades, has a wide range of applicability domestically. A 4-point rating scale was used to assess the frequency of symptoms. The criteria were: "1" for no or very little time, "2" for a small amount of the time, "3" for a considerable amount of time, and "4" for most or all of the time. The main statistical index of SAS is the total score. After the self-evaluation, each score of 20 items is added up to get the rough score, which is converted by $y = \text{int}(1.25x)$. That is, after the cluster is divided into 1.25 and rounded, the standard fraction Y is obtained. Among the 20 scoring items in SAS, the reverse scoring items are: 5,9,13,17,19. After the scale was recovered, SPSS was used for reliability analysis ($\alpha=0.768$), meaning the scale had good validity, which could be used for subsequent analysis.

4. RESULTS

4.1. Knowledge of COVID19

The knowledge about coronavirus was investigated by filling in blank questions. More than 90% of the students answered correctly about the infection symptoms, days in quarantine and transmission route of coronavirus. Although a few students answered

inaccurately, it can be seen that they have a certain understanding of coronavirus.

4.2. Attitudes Towards COVID19

In this part, three questions were set to investigate the frequency for viewing information about COVID-19, the anxiety or fear caused by COVID19, and the confidence of the participants in overcoming the epidemic. 21.32% of the students view COVID19 related information occasionally or not at all; 67.65% students showed general or frequent concern for the epidemic; 11.03% of the students always browse information related to the epidemic, indicating that more than 70% of the students are concerned about the epidemic. 27.94% of the students showed no fear in the question of "whether they are frightened or anxious about COVID-19"; 66.17% students reported no serious fear or anxiety; 5.89% of the students experienced serious fear, indicating that most of the students had certain fear and anxiety about COVID-19 epidemic. As for the question of "whether we can defeat the epidemic", 79.41% of the students said yes, 19.12% expressed concern and doubt, and 1.47% were indifferent. Therefore, on the whole, the students had strong confidence and held optimistic attitude towards the COVID-19 epidemic.

4.3. Behaviour Towards COVID-19

As seen in the table 1, generally, a majority of students have taken some measures to prevent being infected by the virus. The participants were doing particularly well in wearing masks, reducing eating out, travel less and reduce visiting relatives, strengthening indoor ventilation and increase the frequency of washing their hands. However, they have not done enough in strengthening physical exercise, reducing taking walks outside and increase indoor ventilation.

4.4. SAS (self-rating anxiety scale)

The SAS has a standard cut off value of 50 points. According to the norm of China, 50-59 is classified as mild anxiety, 60-69 as moderate anxiety, and 70 points or above is classified as severe anxiety. The self-rated results showed there are 5 students with severe anxiety, 4 students with moderate anxiety and 46 students with mild anxiety. In other words, the results of self-evaluation indicated that in the background of the COVID-19 epidemic, 41.91% of high school students had anxiety problems, among which 3.67% (5 students) had severe anxiety, 2.9% (4 students) had moderate anxiety, and 35.29% (48 students) had mild anxiety. Here listed a few points which I consider worth pointing

Table 1. Behaviour towards COVID-19

	1	2	3	4	5
Wear face masks in public places	0.74% (1/136)	1.74% (2/136)	21.32% (29/136)	20.59% (28/136)	55.88% (76/136)
Going out for walks less frequently	8.09% (11/136)	10.29% (14/136)	31.62% (43/136)	27.21% (37/136)	22.79% (31/136)
Dieting out less frequently	8.09% (11/136)	8.09% (11/136)	26.47% (35/136)	22.79% (31/136)	34.56% (47/136)
Giving up traveling or visiting relatives	5.15% (7/136)	11.03% (15/136)	21.32% (29/136)	19.85% (27/136)	42.65% (58/136)
Enhance ventilation	1.47% (2/136)	2.94% (4/136)	16.18% (22/136)	24.26% (33/136)	55.15% (75/136)
Indoor sterilization	4.41% (6/136)	8.82% (12/136)	29.41% (40/136)	19.12% (26/136)	38.24% (52/136)
Washing hands more frequently	0.74% (1/136)	0.74% (1/136)	9.56% (13/136)	22.79% (31/136)	66.18% (90/136)
Physical exercises	5.15% (7/136)	6.62% (9/136)	25% (34/136)	18.38% (25/136)	44.85% (61/136)

out: in the "unfortunate hunch" question, 47.8%, which is nearly half of the high school students have an unfortunate hunch often or for most of the time; 44.85%, that is, nearly half of high school students often feel that they cannot sit still; More than half (53.67%) of the high

school students said that they had difficulty falling asleep or not sleeping well in the "sleep disorder" question.

4.5. Correlation between Attitudes and Behaviour

After analysing using Pearson analysis, the results showed that the senior high students' attitudes toward COVID-19 pandemic significantly positive correlated with their prevention behaviour ($r=0.258$, $p<0.01$), which means that more optimistic students are, the more they do to prevent being infected by the virus. The high school students' anxiety and their attitudes toward the epidemic showed a significant negative correlation ($r=-0.273$, $p<0.01$), so it showed that the more optimistic students are, the less anxious they will get, while the high school students' anxiety has no significant correlation with their behaviours. However, it cannot be determined whether it is that the behaviours lead to the confidence about defending the epidemic or is the confidence about defeating the epidemic lead to the students' being careful about the virus. Also, it could be that the students' anxiety about the future lead to their being not confident about the epidemic, or it can also be that the students' bad attitude toward the epidemic lead to their high anxiety levels.

5. DISCUSSION

5.1. Conditions of Anxiety among High School Students

Overall, the data from this study showed that 41.91% of high school students suffered from anxiety problems. Similarly, a domestic investigation on psychological stress and coping styles of adolescents during the COVID-19 epidemic also pointed out that nearly half of high school students showed anxiety stress of varying degrees during the epidemic[5]. Although 35.29% of the students in this study had only mild anxiety disorder, the reasons behind it and the possible serious consequences are still worth exploring and reflecting on.

For teenagers, their emotion is still in a stage of development, and has not yet developed mature enough. However, teenagers' control over their emotions has not been fully developed, so they are prone to some adverse emotional problems, such as inferiority, anxiety, loneliness and depression (insert citation). At the same time, the pressure and worry in study as well as the pressure and demand from peers, teachers and parents are also key factors in causing high school students' stress and anxiety. A 2019 study of 30,000 students aged 8 to 19 in Sichuan province found that 10 to 40 percent of teenagers showed depression of some extent, and the symptoms increase with age 5 to 20 percent showed moderate anxiety; older students were more anxious and depressed than younger students, and girls were more anxious and depressed than boys in the same age group. This situation should arouse the concern of schools, families and societies, and studies have shown

that mood disorders in adolescence can lead to poor physical and mental health, reduced educational attainment, unemployment, and an increased risk of substance abuse and criminal behaviour in future.

Additionally, this research shows that nearly half of all high school students have bad forebodings often or most of the time. This unfortunate premonition may be caused by anxiety over college entrance exams or by concerns about the health of one's family and friends in the background of COVID-19 epidemic, and can be explained by the notion of death salience. Death salience is a condition in which when someone is exposed to a death-related situation (for example, the threat of death, or, exposed to death related scenes or objects), and their thoughts about death related things may be aroused [6]. Death salience can be a cause of anxiety. Evidence for terror management theory: I. The effects of mortality salience on reactions to those who violate or uphold cultural values. Especially with the advent of the epidemic, in the face of the gradually increasing number of confirmed and dead, the unfortunate news in the news reports filled our lives, people do not know whether it is tomorrow or death that would come first. Under the remind of information about death, we will undoubtedly have death anxiety; As for the fact that nearly half of high school students often feel unable to sit still for long periods of time, having difficulties sitting still is an external manifestation of endogenous tension, restlessness, and the need to move constantly. The amount of high school students that thought they cannot sit still indicates that they have serious nervousness. And what is worth thinking is, in most schools or families, students were asked to keep the sit-in in order to maintain a state suitable for study, or, say, to help remain concentrated. Basically, except daily activities and dining time, students spend most of their time studying in their seat, so there would be a conflict situation. According to research, if teenagers at the age of 12, 14 and 16 have an additional hour of mild physical activity every day, scores of depression scale would be reduced by 9.6%, 7.8%, and 11.1% at age 18. That is to say, a moderate increase in the amount of exercise for teenagers is helpful for their mental health in the future. Therefore, I think it is necessary for schools to set up related activity classes and physical education classes to alleviate this conflict. Especially, the courses of senior threes cannot be completely replaced by cultural classes required for exams. What's more, more than half of the high school students thought they had a sleep disorder, such as being unable to fall asleep or having insomnia. Long-term or frequent insomnia can seriously affect people's mental and physical health. In particular, sleep quality at the age of 15 can predict the severity of anxiety and depression symptoms, and can also predict the severity of anxiety and depression symptoms after the age of 17. For high school students, insufficient sleep or poor sleep

quality will induce individual negative emotions, which will not only lead to impaired cognitive function in the daytime, but also make individuals experience a higher sense of fatigue [7]. Relationship between stress and adolescent depression: Moderated mediating effect analysis[8]. Therefore, once the physiological mechanism of sleep is disturbed, the individual's emotional and cognitive function will be affected. For one thing, negative emotions will cause a variety of emotional problems, such as anxiety and depression. For another thing, the decline of cognitive function, such as inability to maintain attention and impaired memory, is closely related to academic performance.

5.2. Relationship between COVID19 and Anxiety

The results of this survey showed that high school students have a comprehensive grasp of COVID-19 related knowledge, correct attitude and active protection. Most high school students can face the epidemic positively, and have the right attitude to make the corresponding epidemic prevention behaviour. Through the control of cognition, attitude and behaviour, we have reasons to believe that (1) the more positive the general attitude towards COVID-19, the lower the anxiety score; (2) The more adequate the epidemic prevention and control behaviours, the lower the anxiety score. However, through investigation and data analysis, it can be found that (1) can be proved while (2) cannot be proved. The possible reasons are listed below:

High school students' attitudes toward the 1 coronavirus is more positive, self-rating anxiety scored less likely because of the characteristics of anxiety is that it is usually the worry for the future and produce negative emotions, because this kind of negative emotions such as fear, is usually pointed towards the future and thus cannot be tested, so will produce sense of uncertainty, which is anxiety. When some high school students hold a positive attitude towards the epidemic, they tend to have a more definite prediction about the future. Combined with the background that, in order to reduce the spread of the virus in the outbreak, school delays and start online teaching, for students, especially high school students who bearing heavy burden of schoolwork and facing challenging exams, thus are generally more nervous about their future, students who believe that the outbreak would end at a certain time, or that the disease will not affect the future of their tests and grades, So fear and uncertainty about the future will be lower. If students' attitudes for the outbreaks is positive, they may think that current situation will be quickly improved or be completely controlled, so that it would not influence the lives, study, work and health conditions of oneself or people around them, and people with positive attitude are not easily getting depressed by news of government blocking

cities, infections, or the deaths caused by infection and are more likely to adjust their mood. Therefore, they are more likely to maintain a healthy state of mind, thus reduce the level of anxiety. The study on the anxiety of high school students during the epidemic period can help schools and families pay more attention to mental health problems other than students' academic performance, so as to avoid the deterioration of mental health resulting in an irreparable tragedy.

On the other hand, according to the data analysis, there is no significant correlation between the behaviours of epidemic prevention and the anxiety of high school students. One of the reasons may be the separation of the behaviours and anxiety of the students. Psychological theory points out that attitude contains three components, namely, cognition, emotion, and behaviour tendency. It can be seen that attitudes are more powerful in predicting and explaining behaviours and emotions, which means that attitudes implicitly include emotions and behavioural tendencies. The changes made by the students participating in this study to their own prevention behaviours are more likely to be due to caution against the coronavirus, a positive attitude. The degree of prevention behaviour and anxiety is far less closely related than attitude.

5.3. Advice

At present, the situation of epidemic in China has improved, and the number of infected cases has been basically eliminated. The survey results showed that high school students do well in knowledge about the epidemic, action to prevent being infected and developing a good attitude toward it, but still, nearly half of students should pay more attention to the mental health problems during the epidemic to prevent excessive anxiety. Based on the results of this survey, the following specific suggestions are put forward:

1. Increase physical exercise and extra-curricular activities
2. Adjust sleeping habits
3. For students with anxiety reaction, first, it is important to let them adjust their attitudes toward COVID-19, to hold a positive attitude, and to encourage appropriate anxiety of middle school students speak of inner anxiety and mental restlessness, relieve pressure, through exposed the plight of the heart and fear, to release them for a long time accumulated by pent-up mental suffering. In addition, through psychological counselling, to help them analyse the root of the psychological problems that produce anxiety, pointed out that students produce the positive and negative aspects of the psychological activities of anxiety, so that he can correctly grasp their own psychological activities

6. CONCLUSION

It can be found from this study that during the COVID-19 period, high school students have a relatively comprehensive knowledge of COVID-19, as well as correct attitude and active protection. However, nearly half of the students have anxiety problems of varying degrees (41.91%), among which 3.67% have severe anxiety (5/136), 2.9% (4/136) have moderate anxiety and 35.29% of the students had mild anxiety. The study also showed that the more positive the attitude of high school students towards coronavirus was, the less their self-rated anxiety symptoms were. However, there was no significant correlation between the prevention and control behaviour and the anxiety status of high school students during COVID-19 epidemic, and there was a separation between prevention behaviour and anxiety.

However, there are some problems with this study in deed. For example, the sample of the subjects is not representative enough. In terms of age, the number of students in grade one is the majority, while the number of students in senior two and senior three is small. The number of students in senior one is 63.97% (87/136), and 28.68% (39/136) in senior two, while only 7.35% (10/136) in senior three. In terms of gender, the ratio of male to female is unbalanced, with 38.97% (53/136) for male and 61.03% (83/136) for female. At the same time, the number of people who do not live in the middle and high-risk areas is far greater than the number who live in the middle and high-risk areas. Therefore, it is impossible to judge whether the anxiety of people in different areas and situations is differed. The object of this study is that the anxiety of high school students under the epidemic, and the epidemic may also cause other psychological diseases or negative emotions, such as fear and depression, etc., which should be considered more for comprehensive understanding about epidemic's influences on students' mental health in future studies.

APPENDIX

Research on Mental Health Conditions of High School Students During COVID-19

Hi! This is a survey designed to research the mental health conditions of high school students during the epidemic. Please fill in the questionnaire according to your own situation, thanks for your cooperation.

Personal Information

1. Gender [MCQ] *
2. Grade [MCQ] *
3. Subjects [MCQ] *
4. Whether people around have been infected [MCQ] *
5. living in medium to high risk area or not [MCQ] *

Section 1: Knowledge about COVID-19

Fill-in-blank Questions: Please answer the questions below.

1. Name of the virus [fill-in-blank questions]

 2. Route of transmission [fill-in-blank questions]

 3. Number of days of quarantine for close contacts [fill-in-blank questions]

 4. Signs of infection [fill-in-blank questions]

2. Multiple Choice Questions
5. Cover your mouth and nose with tissue when sneezing [MCQ] *
 6. Your source of information about COVID-19 epidemic (multiple choice) [multiple choice] *

Section 2: Attitudes towards COVID-1

Please assess your own conditions, rating from 1 to 5 (1 for no time 2 seldom 3 often 4 frequently 5 always)

1. Frequency for viewing information about COVID-19*
2. Whether you feel afraid or anxious about COVID-19*
3. Whether the epidemic can be defeated *

Section 3: Protection method

Please assess your prevention behaviour taken to prevent being infected rating from 1 to 5

1. Wearing face masks in public *
2. Going out for walks less frequently *
3. Dieting out less frequently *
4. Giving up traveling or visiting relatives*
5. Enhance ventilation *
6. Indoor sterilization *
7. Washing hands more frequently *
8. Physical exercises *

Section 4: Anxiety scale

Please assess yourself according to your own conditions, rating from 1 to 5. (1=no time, 2=a small amount of time, 3=for a considerable amount of time, 4=most or all time)

1. I feel easier to get nervous and anxious (anxiety)*
2. I feel afraid for no reason (fright)*
3. I feel easier to get agitated or panicked (panic)*
4. I think I will go mad (insanity)*
5. I think everything is fine and nothing unfortunate will happen (unfortunate hunch) *
6. My hands and feet tremble (trembling) *
7. I feel annoyed for headache, cervicodynia and backache (somatic symptoms) *
8. I find it easy to get tired (tiredness) *
9. I feel calm and it is easy for me to sit still silently

(akathisia) *

10. I find my heart beating fast (palpitation) *
11. I feel annoyed for feeling dizzy (dizziness) *
12. I faint or feel like fainting (fainting) *
13. It is easy for me to breath (dyspnea) *
14. There is stabbing pain in my hands and feet (pain) *
15. I am annoyed for stomachache (stomachache) *
16. I often want to pee (ascheturis) *
17. My hands are dry and warm (hydrosis)*

REFERENCES

- [1] Wang Kexin, Xu Decui, He Wenfeng, Qian Zhaoxin, Yu Dan, & Wu Ligang et al. Medical staff anxiety during the novel coronavirus pneumonia epidemic, 2020,v.40;No.467(06), 37-40.
- [2] G.C. Davison. *Abnormal Psychology*. Toronto: Veronica Visentin, 2008, p. 154.
- [3] Zhao qian, Hu caihong, Feng Renjie, & Yang yuan. Anxiety, depression and physical symptoms in patients with new coronavirus pneumonia. *Chinese Journal of Neurology*, 2020, 53(06), 432-436.
- [4] Shen Xiaoshuang, Li Xin, Yan Junwei, Liu Shuai, Hu Shuwen, Guo Pengfei, Zhong Hui. Anxiety of primary and middle school students in Anhui Province during the novel coronavirus pneumonia epidemic. *Chinese Mental Health Journal*, 2020, v.34(08), 87- 91.
- [5] Wang Ya. Research on the Anxiety Level and Influencing Factors of College Students during the Period of Epidemic Prevention and Control. *Journal of Southwest Agricultural University (Social Science Edition)*, 2020, 007(003), 76-83.
- [6] Wang Ningxia, Xu Pengfei. Rosenblatt, Greenberg, Solomon, & Pyszczynski,1989). Evidence for terror management theory: I. The effects of mortality salience on reactions to those who violate or uphold cultural values. *Journal of Personality And Social Psychology*, 2020, 57(4), 681-690.)
- [7] Fu Weiwei, Wang Guangxi & Li Yongjuan. The relationship between stress and depression in adolescents: an analysis of moderated mediation effects. *Chinese Journal of Clinical Psychology* 2018, (04), 788-791. doi:10.16128/j.cnki.1005-3611.2018 .04.034.
- [8] *Diagnostic and Statistical Manual of Mental Disorders American Psychiatric Associati (5th ed.)*. Arlington: American Psychiatric Publishing, 2013. pp.189-195.