



An Experiment About if COVID Lockdown Would Affect the Probability of Depression

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Abstract. This paper mainly studied the impact of home quarantine on depression among quarantined people in Shanghai, China, when the outbreak of COVID-19 suddenly recurred in the city in early 2022. A group of people were randomly selected to collect the responses of quarantined people online. The questions the quarantined person answered included basic personal information as well as basic information about the quarantine situation. Finally, it is concluded that the isolation without hope for a long time will have certain psychological impact on the isolated people to a certain extent. At the same time, different personal circumstances also affect the probability of depression in isolated people.

Keywords: Covid · Depression · Questionnaire · Shanghai China · Anxious

1 Introduction

COVID-19 has spread globally since 2019, and almost every country has been affected by it. China was the first country to find and confirm the case. As of June 2022, China has 3,39,2315 confirmed cases and 7,709 people have died [1]. During the fight against the virus, the Chinese government adopted strict quarantine policies, and almost everyone living in China has been quarantined at least one time or more. Studies have shown that being isolated at home for long periods of time or having less daily communication can have an impact on people's mental health [2]. China's quarantine policy often requires everyone to stay in isolation, which is likely to affect the mental health of those quarantined. This paper examines whether quarantine policy has an effect on the diagnosis of depression. The purpose of this paper is if strict quarantine policy do have a big effect on depression, then solution is in need.

2 Literature Review

Starting on March 2022, Shanghai China suddenly appears severe covid cases and the city take urgent action by lockdown the city. This is a great chance to analysis the theory of covid lockdown increase the likelihood of depression, so the study has been designed. Previously, researchers in different countries have looked at the effects of COVID-19 quarantine policies on depression. Some may be analyzing at different categories, or

other countries, but almost all of their result is that quarantine will impact the chance of getting depression. For example, in India, researcher have 403 participants to finish a survey that includes questions about depression, anxiety, pressure and family wealth. Result shows that the people with no supplies suffer anxious the most, students and healthcare professionals is more likely to feel pressure than others [3]. Another example is this study that mainly look at the probability that people will get depression during COVID in United State. They use multi-item, valid and reliable questionnaire that were posted online to gather response, in total they got 1978 response. The authors conclude that depression, anxiety, and psychological distress is significantly predictive of race, ethnicity, age, having children at home, employment as a health care worker, annual household income, and place of residence. Men are more likely to be depressed and women are more likely to have symptoms of anxiety [4].

3 Methodology

Study was designed to get response through questionnaires app called <https://www.wjx.cn/app/survey.aspx>. Since WeChat is the most common communication app that Chinese use, questionnaires was done through there. The study groups were divided into marital status, age distribution, the number of people quarantined together, and monthly income. The participant was limited to those who were quarantined in Shanghai and required to have been quarantined for at least 14 days. In addition, the participants must be the people that have never been diagnosed with depression. These requirements is intended to increase the accuracy of the study.

First, to be as specific as possible of the results, marriage was divided into single; in love; married; and divorced. The gender is divided into male and female. The age range is wide, from 18 to 57. Because of different quarantine policies, some people quarantined alone, some people are with others. So, living status is divided into quarantine alone; living with a partner; and living with a family (or three or more people). The last group is the monthly income. It is divided into people of monthly income less than 10,000 RMB; 10,000 to 20,000 RMB and 20,000 to 25,000 RMB and more than 25,000 RMB. I also added additional questions about whether they had enough supplies during the quarantine period and asked if they felt anxious or depressed without enough supplies. This question is also intended to provide a more detailed understanding of the effects of quarantine on depression. At the end of the questionnaire, I added the SDS test, which is a special test form for depression, and then each respondent filled in the scores in the blanks after finishing the test. (5) SDS scores are classified as normal (<50), mild depression (50 to 59), moderate to marked major depression (60 to 69), and severe to extreme major depression (>70). All of these separated groups were done to increase accuracy and to study whether which group affected more on the risk of getting depression.

4 Results

Through WeChat mini program questionnaire, the researcher collected 89 answers, among which 17 answers were judged invalid because they did not meet the requirements, so 72 answers were valid. Among them, 18 are single, 27 are in love, 18 are

Table 1. The cross analysis data of age and SDS score

Age	<50	50–59	60–69	>70	Total
<18	0(0%)	1(100%)	0(0%)	0(0%)	1
19–29	14(36.84%)	14(36.84%)	10(26.32%)	0(0%)	38
30–39	5(17.24%)	10(34.48%)	13(44.83%)	1(3.5%)	29
40–49	0(0%)	2(66.67%)	1(33.33%)	0(0%)	3
>50	1(100%)	0(0%)	0(0%)	0(0%)	1
Total	20	27	24	1	72

married and 9 are divorced. There are 27 males and 45 females. There is one person under the age of 18, 38 people between the age of 19 and 29, 29 people between the age of 30 and 39, 3 between the age of 40 and 49, and 1 person age is over 50. 19 people were quarantined alone, 28 were quarantined with their partners, and 25 were quarantined with family members or more than three people. The economic situation is separated into 22 employees whose monthly income is less than 10,000 RMB, 40 employees whose monthly income is 10,000–20,000 RMB, 10 employees whose monthly income is 20,000–25,000 RMB, and no one whose monthly income is more than 25,000 RMB. During the quarantine period, 57 people had enough supplies, 15 people did not have enough supplies, and among these 15 people, 12 people felt anxious without enough supplies. 38 people experienced anxiety or depression during the quarantine period, while 34 did not. None of the 72 questionnaires had a diagnosis of depression. SDS test results showed that 20 people with a score of less than 50 were classified as normal, 27 people with a score of 50–59 were mildly depressed, 24 people with a score of 60–69 were moderately depressed, and 1 person with a score of >70 was severely depressed. The question about whether during quarantine time if you have felt anxious or depressed was to be the target of separating people into categories. The data shows that 38 people have felt anxious during quarantine while 34 people have not felt anxious.

By looking at the SDS score and the age, there are 20 people have a score of under 50, 27 people have a score of 50–59, 24 people have a score of 60–69, and 1 person have a score of over 70 (Table 1).

Most of the people who are not depressed are more than 50 years old. Some of the mildly depressed ones are mostly 40–49 years old. The majority of those suffering from the recession were 30–39 years old. People with severe depression tend to be 30–39 years old.

Through cross-analysis on marriage and depression mood, 12 out of 18 single people felt anxious in quarantine, accounting for 66.67%. Among the 27 people in love, 11 felt anxiety, accounting for 40.74%. 11 out of 18 married people felt anxious, accounting for 61.11%. 4 out of 9 divorced people felt anxiety, accounting for 44.44% (Table 2).

Through cross-analysis on gender and depression mood, among the 72 respondents, 27 were male, and 13 of them (48.15%) felt anxious after being quarantined for such a long time (Table 3).

Table 2. The cross analysis data of marriage status and anxious feeling

Marriage Status	Felt anxious	Not anxious	Total
Single	12(66.67%)	6(33.33%)	18
In love	11(40.74%)	16(59.26%)	27
Married	11(61.11%)	7(38.89%)	18
Divorced	4(44.44%)	5(55.56%)	9
Total	38	34	72

Table 3. The cross analysis data of gender and anxious feeling

Gender	Felt anxious	Not anxious	Total
Male	13(48.15%)	14(51.85%)	27
Female	25(55.56%)	20(44.44%)	45
Total	38	34	72

Table 4. The cross analysis data of quarantine status and anxious feeling

Quarantine with	Felt anxious	Not anxious	Total
Quarantine alone	10(52.63%)	9(47.37%)	10
Quarantined with partner	16(57.14%)	12(42.83%)	28
3 or more together	12(48%)	13(52%)	25
Total	38	34	

According to the cross-analysis on the number of people responders quarantined with and the depression mood, among the 72 responses, 19 respondents were quarantined alone, and 10 of the respondents (52.63%) said that quarantine have caused depression. Of the 28 people who were quarantined with their partners, 16 of them (57.14%) said their isolation had caused them to feel depressed. 25 people were quarantined with family members or more than three others, and 12 of them (48%) reported depression during their quarantine (Table 4).

By analyzing the cross-analysis, the relationship between monthly income and depressed mood is also important. Of the 72 responses, 22 out of 15 of them with a monthly income of less than 10,000 RMB, accounting for 68.18%, said that the quarantine made them feel depressed and anxious. Among 40 people with a monthly income of 10,000–20,000 RMB, 18 of them, or account for 45%, said they felt anxious about quarantine. In the end, 5 out of 10 people with a monthly income of 2,000–25,000 yuan, or 50%, said they experienced anxiety during the quarantine period (Table 5).

Table 5. The cross analysis data of monthly income and anxious feeling

Monthly income	Felt anxious	Not anxious	Total
Less than 10000 RMB	15(68.18%)	7(31.82%)	22
10,000–20,000 RMB	18(45%)	22(55%)	40
20,000–25,000 RMB	5(50%)	5(50%)	10
25000 RMB or higher	0	0	0
Total	38	34	72

Table 6. The cross analysis data of supplies situation and anxious feeling

Supplies	Felt anxious	Not anxious	Total
Have enough supply	27(47.37%)	30(52.63%)	57
No enough supplies	11(73.33%)	4(26.67%)	15
Total	38	34	72

Of the 72 responses, 15 did not have adequate supplies during quarantine. 11 said they were very anxious (Table 6).

By look over these tables, conclusion have made. By marital category, single people were more likely to feel anxious than people of other marital status. And people in love are less likely to feel anxious than others. Women are more likely than men to experience anxiety during quarantine. Anxiety was most likely to be felt when you were isolated with your partner, while it was reduced when you were isolated with family members or more than three people. Quarantined people were most likely to feel anxious if they earned less than 10,000 yuan a month, and those earning between 10,000 and 20,000 yuan were least likely to feel anxious. Most people have a score of SDS at 50–59, which is mildly depressed, and the age of 19–29, it is more possible to have depress.

Lastly, not having enough supplies during quarantine is also likely to cause anxiety.

SDS scores were divided into three levels. And the way the researcher does this is to randomly take four people from each of the three grades and observe their results of SDS and the status of quarantine. First of all, out of 20 people with less than 50 points, the author randomly selected four people. Three of the four people were quarantined with their families or more than three people. All of them had a monthly income of 10,000–25,000 RMB, all of them were under 30 years old and they all had enough supplies during their quarantine. Out of 27 people who scored 50–59, the author randomly picked four too. Three of their age are over 30, and three of them are single and quarantined themselves. The monthly income is between 10,000 and 20,000 and there are enough materials for four of them. Out of the 24 people who scored 60–69, the author randomly selected four more. Three of the four are under 30, and three of the four are in a relationship or married, but they're quarantined alone. The monthly income of three people is between 10,000 and 20,000, and the other one is less than 10,000, and they

all have enough materials. Finally, among the 72 answers, the only one whose SDS test result is over 70 points is male, divorced, 33 years old now, isolated, with a monthly income of less than 10,000 RMB, and not enough materials.

5 Discussion

The question of whether the coronavirus quarantine policy affects the probability of depression has been studied by many different researchers in different aspects, and they all conclude that prolonged quarantine has affects the probability of depression. Of the 72 people in our study, 38 experienced anxiety and depression after such a long period of isolation, a 52.8% chance. Higher than Shenzhen's 6.21% [6], the prevalence of anxiety and depression in the affected population in southwest China during COVID-19 was about 8.3% and 14.6%, respectively, in early February 2020 [7]. A similar study in Spain found an 18.7% risk of depression and 21.6% of anxiety symptoms [8]. The reason for the huge difference between my data and those of other researchers is that my sample size is much smaller than theirs. I only have 72 valid answers, while there are at least 1000 answers in other papers.

6 Conclusion

The conclusion of this study is consistent with other studies that isolation policies affect the symptoms of anxiety or depression in isolated individuals. Since 2020, the transmission of coronavirus has been on a large scale around the world. In order to reduce transmission, each country has issued different forms of quarantine policies. In a study it talked about longer durations of poorer mental health were associated with poorer mental health [9]. Because the sample size is too small, the result may not be so accurate. Although many specific conditions have been set for the sample so that the results can be as accurate as possible, the results of studying only 72 people may not be so accurate. Secondly, there will be confounding variables in the study by questionnaire. In the questionnaire, it is not excluded that some people do not understand their own situation, for example, they are not sure whether they are depressed or really depressed.

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