



# Research on the Psychological Behaviors of Undergraduates During the Covid-19 Pandemic Through Data Analysis

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## Abstract:

Data analysis refers to analyzing the collected mass data through proper statistical analysis methods, meanwhile summarizing, comprehending and digesting it to exploit its functions to the largest extent, so as to give play to its effect. Data analysis is a process in which data is researched and summarized in detail, so as to extract useful information and form a conclusion. Under the background of the Covid-19, descriptive statistics are used. Under the COVID-19 epidemic, we use descriptive statistics. The dropping objects are mainly college students from Dalian Vocational and Technical College and Dalian University of Technology. The dropping majors include mechanical design and manufacturing, preschool education and other majors. We followed up with the group using the same questionnaire. It is hoped that the measurement results of college students' psychological cognition under the COVID-19 epidemic could be obtained. Then the T-test is applied, which is to deduct the occurrence probability of difference based on t-distribution theory, so as to compare whether the differences between 2 mean values are significant or not.

**Keywords:** Data Analysis, Statistical analysis, T-test, Psychological behaviour, Research

## 1 INTRODUCTION

COVID-19 refer to Corona Virus Disease 2019. On January 30, 2020, the World Health Organization declared the COVID-19 epidemic a public health emergency of international concern. Through the COVID-19 epidemic, multiple rounds of follow-up visits were conducted on college students, and survey analysis and measurement were conducted to provide scientific reference for college students' psychological cognition during the epidemic.

## 2 RESEARCH OF PROBLEMS

Public mentality refers to the general psychological characteristics and behavior patterns of a certain number of social members that appear in a certain historical stage and are formed under the influence of the macro social environment, and it is not the simple accumulation and mechanical superposition of individual mindsets [1]. Studies have shown that negative emotions such as anxiety, anger, and disappointment increased significantly after the

“lockdown” of Wuhan due to the outbreak of COVID-19. As people’s interpersonal communication and leisure activities were restricted, people in Wuhan had decreased positive emotions and increased negative emotions, which weren’t like those in other parts of the country. The public mentality has social and group attributes, and its formation and change involve many factors and follow certain internal logic. In order to prevent the epidemic from entering the campus, ministry of education required that the spring semester of 2020 be postponed, advocating "suspension of classes and continuous teaching". The majority of students must adapt to online teaching and home-based learning, and continue to reduce going out and face-to-face social activities [5]. It is hoped that the measurement results of college students' psychological cognition under the COVID-19 epidemic could be obtained.

1. Do you have any rescue behaviors (donate masks, donate money, provide help in your community, etc.)

A (Yes, a lot)

B (Yes, a little)

- C (No)
- 2. Do you have any friends or relatives in Hubei?
  - A (Yes, many)
  - B (Yes, a few)
  - C (No)
- 3. Do you have friends, relatives or classmates fighting against the epidemic in Hubei? ()
  - A (Yes)
  - B (No)
- 4. Do you know anyone infected ()
  - A (Yes)
  - B (No)
- 5. Are there any confirmed or suspected cases in your city ()
  - A (Yes)
  - B (No)
- 6. Do you think you need some psychological counseling after this time?
  - A (Yes, very much)

- B (Yes, a little)
- C (No)
- 7. Have you heard that there are a lot of psychological consultants for epidemic psychological help ()
  - A (Yes, a lot)
  - B (Yes, a little)
  - C (No, never heard of it)
- 8. Do you think psychological intervention can better help everyone rebuild confidence in life ()
  - A (Yes, absolutely necessary)
  - B (Maybe)
  - C (No)
  - D (I'm not sure)

### 3 DESCRIPTIVE STATISTICAL ANALYSIS

First of all, a descriptive statistical analysis was performed on the variables.

**Table 1** Descriptive statistical analysis

Basic information		Quantity	Percentage ( % )
Relief effort	Yes, a lot	72	13.9
	Yes, a little	265	51.2
	No	181	34.9
Are there any friends or relatives in Hubei?	Yes, many	18	3.5
	Yes, a few	35	6.8
	No	465	89.8
Do you have any friends or relatives in Hubei?	Yes	54	10.4
	No	464	89.6
Do you know anyone infected?	Yes	15	2.9
	No	503	97.1
Are there any confirmed or suspected cases in your city?	Yes	383	73.9
	No	135	26.1
Do you think you need some psychological counseling after this time?	Yes, very much	24	4.6
	Yes, a little	87	16.8
	No	407	78.6
Have you heard that there are a lot of psychological consultants for epidemic psychological help?	Yes, a lot	55	10.6
	Yes, a little	228	44.0
	No, never heard of it	235	45.4

Do you think psychological intervention can better help everyone rebuild confidence in life?	Yes, absolutely necessary	101	19.5
	Maybe	288	55.6
	No	20	3.9
	I'm not sure	109	21.0

As can be seen from the table, among the survey objects of this scale, there are 265 people who conducted some rescue behaviors, accounting for 51.2%, 181 had a lot of rescue behaviors every month, accounting for 34.9%, and 72 had a lot of rescue behaviors, accounting for 13.9%.

Regarding whether there are friends or relatives in Hubei, 465 said they had many friends or relatives in Hubei, accounting for 34.9%, followed by "Yes, a few", and "Yes, many", 35 and 18, accounting for 6.8% and 3.5%, respectively.

As for whether there are friends, relatives and classmates fighting against the epidemic in Hubei, the survey respondents mainly said no, including 464 people, accounting for 89.6%, but 54 said yes, accounting for 10.4%.

As to whether they knew someone was infected, most of the survey respondents said no, with 503 people, accounting for 97.1%, and 15 said they knew someone infected, accounting for 2.9%.

As for the factor of whether there are confirmed or suspected cases in their cities, 383 people said yes, accounting for 73.9%, while 135 said no, accounting for 26.1%.

As for the factor of whether they think they need some psychological counseling, 407 said no, accounting

for 78.6%, followed by 87 and 24, accounting for 16.8% and 4.6%, respectively.

As for the factor of whether they have heard of many psychological counselors for psychological help, the respondents said they have heard a lot, accounting for 45.4%, followed by 228 people who have heard a little and 55 people who have heard a lot, accounting for 44.0% and 10.6%, respectively.

As for the factor of whether psychological intervention can help people rebuild their confidence in life, 288 respondents, accounting for 55.6%, thought it could be helpful, 109 said they were not sure, 101 said they completely needed it, and 20 said no, accounting for 21.0%, 19.5%, and 3.9%, respectively.

## 4 PROBLEM INSPECTION

### 4.1 Independent sample T-test of satisfaction

To explore whether the factors of whether the user has friends, relatives, and classmates fighting against the epidemic in Hubei will have an impact on performance satisfaction, an independent sample T-test is conducted for the performance satisfaction of yes and no, and the results are shown in the table below.

**Table2** Independent sample T-test descriptive statistical scale.

	Are there any friends, relatives or classmates fighting against the epidemic in Hubei? (Average)		T	p
	Yes	No		
<i>Performance satisfaction</i>	3.19	3.09	0.688	0.492

### 4.2 Independent sample T-test of performance satisfaction

To explore whether the factor of whether there are confirmed or suspected cases in the user's city have an

impact on the performance satisfaction, an independent sample T-test is conducted for the performance satisfaction of yes and no, and the results are shown in the following table.

**Table 3** Independent sample T-test descriptive statistical scale

	Are there confirmed or suspected cases in your city (average)		T	p
	Yes	No		
	<i>Performance satisfaction</i>	3.03		

**4.3 Comparison of differences**

A one-way ANOVA is conducted to study the difference in performance satisfaction among different rescue behaviors.

**Table 4** One-way ANOVA results of rescue behavior and performance satisfaction

	Rescue behavior (average)			F	p
	Yes, a lot	Yes, some	No		
<i>Performance satisfaction</i>	3.49	3.05	3.00	6.700	0.001

**4.4 Comparison of difference between performance satisfaction**

who feel that they need psychological counselling here after.

A one-way ANOVA is conducted used to study the difference in performance satisfaction between people

**Table 5** One-way ANOVA results of whether or not they feel the need for psychological counseling afterwards and performance satisfaction

	Do you feel you need counseling afterwards? (Average)			F	p
	Yes, very much	Yes, a little	No		
	<i>Performance satisfaction</i>	3.08	3.25		

**4.5 Comparison people rebuild their confidence in life**

psychological interventions that could help people rebuild their confidence in life.

A One-way ANOVA is carried out to study the differences in performance satisfaction after different

**Table 6** One-way ANOVA results that can help people rebuild their confidence in life and performance satisfaction after psychological intervention

	Psychological intervention can help people rebuild their confidence in life :(average)				F	p
	Completely necessary	May help	Cannot help	I'm not sure		
<i>Performance satisfaction</i>	3.17	3.03	3.14	3.19	0.895	0.443

## 5 CONCLUSION

As can be seen from the data in the table, there is no significant difference in performance satisfaction between those who have relatives and classmates fighting against the epidemic in Hubei and those who have no relatives and friends fighting against the epidemic in Hubei ( $T=0.688$ ,  $P>0.05$ ).

As can be seen from the data in the table, there is a significant difference in the performance satisfaction between those with confirmed or suspected cases and those without confirmed or suspected cases in cities ( $t=-2.420$ ,  $P<0.05$ ), and the performance satisfaction of those without confirmed or suspected cases in their city is higher than that of those with confirmed or suspected cases in their city.

As can be seen from the data in the table, the samples of different rescue behaviors show a significant difference in performance satisfaction ( $P<0.05$ ), indicating that there is a significant difference in performance satisfaction among samples of different rescue behaviors. According to the overall trend, the respondents with more rescue behaviors have a stronger perception of performance satisfaction. Those who had such rescue behaviors and did a lot of rescues had the highest performance satisfaction score of 3.49, while those who did not do anything about rescue had the lowest performance satisfaction score of 3.00.

As can be seen from the data in the table, there is no significant difference ( $P>0.05$ ) in performance satisfaction among samples with different feelings of needing psychological counseling later ( $P>0.05$ ), indicating that there is no significant difference in performance satisfaction among samples with different feelings of needing psychological counseling later.

As can be seen from the table below, the samples that can help people rebuild their confidence in life after different psychological interventions have no significant difference in performance satisfaction ( $P>0.05$ ), meaning that the samples that can help people rebuild their confidence in life after different psychological interventions have no significant difference in performance satisfaction

## 6 DISCUSSION AND ANALYSIS

The COVID-19, started in Wuhan, Hubei Province for the first time, temporarily hit the pause button for the entire country. We were looking forward to the end just like the Severe Acute Respiratory Syndrome (SARS) [2]. However, as time went by, our expectations have been dashed and we have had to accept that we would probably need to coexist with the Novel Coronavirus for a long time in the future, which has had a huge impact on people's psychology, spirit, as well as way of life [3]. Besides, the impact of COVID-19 on humans may be deeper, longer, and more widespread than we ourselves expect. During this period, especially at the beginning of the epidemic, the epidemic caused great psychological pressure on the people, including panic, anxiety, depression, suspicion, and compulsion [4].

Based on the investigation, we can draw the following conclusions:

There is no significant difference in performance satisfaction between those who have relatives and classmates fighting against the epidemic in Hubei and those who have no relatives and friends fighting against the epidemic in Hubei ( $T=0.688$ ,  $P>0.05$ ).

There is a significant difference in the performance satisfaction between those with confirmed or suspected cases and those without confirmed or suspected cases in cities ( $t=-2.420$ ,  $P<0.05$ ).

The samples of different rescue behaviors show a significant difference in performance satisfaction ( $P<0.05$ ).

There is no significant difference ( $P>0.05$ ) in performance satisfaction among samples with different feelings of needing psychological counseling later ( $P>0.05$ ), indicating that there is no significant difference in performance satisfaction among samples with different feelings of needing psychological counseling later.

The samples that can help people rebuild their confidence in life after different psychological

interventions have no significant difference in performance satisfaction ( $P>0.05$ ).

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