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College student willingness to vaccinate COVID-19 Vaccine and its Evaluation

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Abstract: The purpose of this survey is to investigate college students' cognition, vaccination willingness and influencing factors of COVID-19 vaccine, and to provide theoretical basis and suggestions for the promotion of COVID-19 vaccine in college students. A simple random sampling method was used to conduct online questionnaires and face-to-face interviews among college students. Results A total of 352 valid questionnaires were collected, and the data were analyzed by Logistic regression analysis and cross-contingency analysis. And draw a relevant conclusion, at present, most of the college students in COVID-19 vaccination work maintain a positive and cooperative attitude, but they still need to improve their understanding.

1. Introduction

Looking back on the development of COVID-19 epidemic in China, we can probably summarize its process into four stages. From the case of "unexplained pneumonia" to the neglect of medical treatment of ordinary pneumonia in Wuhan, it developed to novel coronavirus wreaking havoc in Hubei and even the whole country. The second is to gradually achieve the resumption of production and work through epidemic prevention and control measures, and finally the regular prevention and control of the epidemic situation of COVID-19 [1]. Most of the existing studies focus on the analysis that the group is all the people in a certain urban area, and the scope is too wide to explore the specific situation of a certain group in depth.

Therefore, according to the above analysis, this paper uses a variety of survey methods such as questionnaires and interviews, and uses multi-stage sampling methods to describe statistics, regression analysis, correlation analysis and other operations. To analyze the factors affecting COVID-19 vaccine vaccination and predict the vaccination situation in the future.

2. Survey scheme design

2.1 Research object

This paper takes college students as the most important subject of investigation. In terms of vaccine publicity, counselors of various departments and relevant leaders of various colleges play a role in publicizing COVID-19 vaccine knowledge to students and advocating students to actively participate

in COVID-19 vaccine vaccination. In terms of vaccination, vaccination workers [2], as real zero-distance contact vaccination staff, they can more effectively understand and grasp the vaccination information of COVID-19 vaccine. In terms of management, as the arrangers and managers of all kinds of student activities and work, the leaders of each school have the relevant information about student vaccination [3].

Finally, combined with the actual situation of investigation and research and vaccination, the survey selected students, vaccination workers and relevant responsible persons and leaders of various departments and colleges as the objects of our traditional survey methods.

2.2 Data collection method

First of all, we visited the school Hospital of Chengdu University of Technology to interview the vaccination staff, and then conducted a face-to-face interview with the students within the University Of Chengdu University Of Technology. Through the form of network questionnaire survey with computer as the medium. Upload the QR code of the questionnaire on social media such as QQzone, QQ group, Wechat moments, Weibo and other social media, and deliver the questionnaire to college students in universities in Chengdu [4].

2.3 Investigate the organizational process framework

1. Establish the research goal: collect real-time news about COVID-19 vaccine and crawl related articles on net.

2. Formulate a research plan: conduct a questionnaire survey on college students, and conduct in-depth interviews with some insightful college students to understand the current situation of COVID-19 vaccine research and development and vaccination in an all-round way.

3. Specific research process: in the stage of data analysis, we will comprehensively analyze the factors that affect college students' COVID-19 vaccination willingness by using the methods of descriptive statistics, logical regression, decision tree, factor analysis and so on.

4. Research results and their feedback: we write a report based on the results of data analysis and case analysis, give the corresponding result analysis and predict the future development trend.

3. The questionnaire design

Two questionnaires were used to investigate college students' willingness to vaccinate against COVID-19 and their understanding of the vaccine, as well as their opinions and understanding of the vaccine. The first questionnaire mainly investigated college students' willingness and general cognition of inoculation. The second questionnaire is to carefully understand college students' cognition level of COVID-19 vaccine, and to make an estimate of the understanding level of the questionnaire results.

4. Evaluation of the results of the questionnaire

There are two questionnaires in this survey, 178 questionnaires are distributed, 174 questionnaires are sent out, a total of 352 questionnaires are collected, and a total of 352 questionnaires are collected. The two questionnaires of this group investigate different contents respectively. The first questionnaire mainly investigates the vaccination situation and vaccination willingness of college students, as well as their views and evaluation on COVID-19 vaccine. The second questionnaire adopts the form of examination questionnaire, by designing test questions about vaccine-related knowledge with different degrees of difficulty, through the correct rate to investigate the degree of

college students' understanding of COVID-19 vaccine-related knowledge. Using SPSS software to analyze the differentiation degree, the method of distinguishing degree is as follows:

Data-case sorting: first, the total scores of all students are sorted from high to low (or from low to high), and then the scores of the top 27% and the bottom 27% are taken as the critical points of high and low grouping. Conversion-recode to different variables. New value and old value-assign, old value and new value options encode the new value 1 from the highest to the top 27% threshold (i.e., 27 to 65) and the new value 2 from the lowest to the bottom 27% threshold, then form a new variable "high and low discriminating grouping". Establish sample T test, set "high and low classification group" as group variable, code by 1, 2, and then set "total score" as test variable.

Table 1: Group statistics

High and low grouping	Number of cases	Average value	Standard deviation	Average standard error
1	72	35.33	8.740	1.030
2	102	22.00	3.930	0.389

Table 2: Independent sample test results

	F	Signif-icance	t	Degree of freedom	Sig.(Double tail)	Mean deviation	Standard error difference	The lower limit of the difference of 0.95	The upper limit of the difference of 0.95
Assume equal variance	21.446	0.000	13.594	172	0.000	13.333	0.981	11.397	15.269
No assume equal variance			12.109	91.403	0.000	13.333	1.101	11.146	15.520

It is seen in the table that the significance of the three columns is 0.000. Under the condition of the significance level, the significance is less than the significance level, that is, it is assumed to be equal variance. And in the sixth column of the peer Sig. (double tail), we get the Sigvalue of 0, which is less than 0.05. We reject the original hypothesis, and think that the high and low of this questionnaire has a distinguishing degree, that is, it can be proved that this questionnaire can distinguish the depth of the situation.

5. Sampling and data analysis

5.1 Sampling

This paper uses the stage-by-stage sampling method, first carries on the stratified stage for the first stage, collects the colleges and universities in Chengdu, Sichuan Province, and distributes the questionnaire and divides the results according to the proportion of the number of colleges and universities. Then carry on the second stage, stratified sampling of men and women. In order to reduce the error caused by the ratio of male to female and the cognitive difference between male and female, we decided to divide the college students of Chengdu University of Technology and Sichuan Communication University into two layers of male and female, and carry on the stratified sampling. According to official data, the male-to-female ratio at Chengdu University of Technology is about 2:3. The male-to-female ratio of Sichuan Communication University is about 1:3.

5.2 Data analysis

In this survey, various forms of pie charts and bar charts were used to analyze the basic information, vaccination and wishes of the respondents. The Alpha reliability coefficient method was used to analyze the reliability of the questionnaire. According to the KMO value to judge whether the number of common factors between variables is appropriate, that is, the correlation between variables. The influence of inoculator gender on vaccination was analyzed by cross-contingency table analysis and chi-square test, and the college students were subdivided by mean clustering.

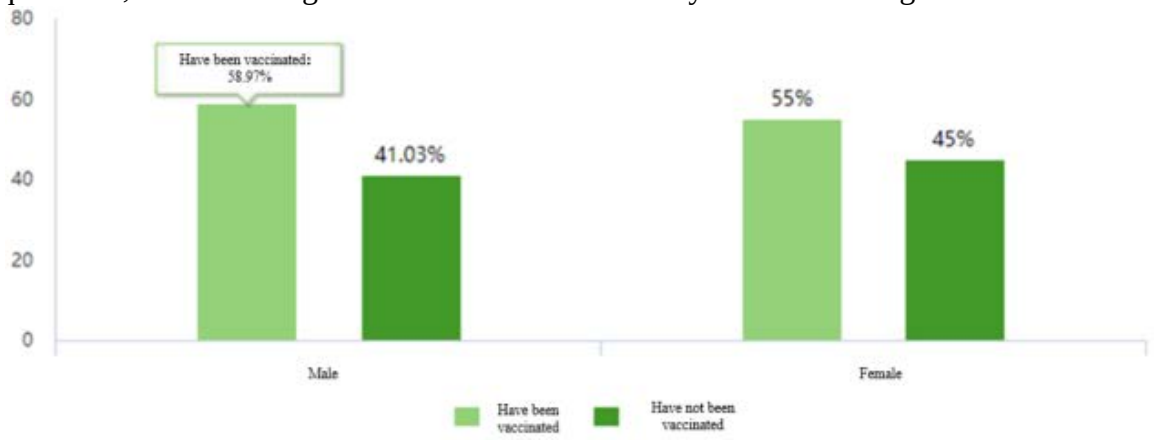

Figure 1: Histogram of cross-analysis of vaccination intention of different genders

Females accounted for more than half of the vaccinated and unvaccinated population. SPSS was used to test the P-value.

Table 3: P-value Test under the influence of gender

Sex	Have been vaccinated	Have not been vaccinated	Total		
Male	46	32	78	0.363	0.547
Female	57	45	100		

Test P-value, accept the original hypothesis, that is, there is no significant difference in vaccination willingness between different genders, that gender does not affect their vaccination decisions, according to roughly the same proportion can also be seen.

6. Conclusion

In this paper, a simple random sampling method is used to analyze the network questionnaire survey and face-to-face interview of college students. A total of 352 valid questionnaires are collected, and the data are analyzed by Logistic regression analysis and cross-contingency analysis. Then it is found that most of the college students in COVID-19's vaccination work maintain an active and cooperative attitude, and think that vaccination is an effective regular epidemic prevention and control work. However, some college students choose not to be vaccinated, mainly have the following objective willingness, such as physical discomfort, have been vaccinated with other vaccines within 28 days, and think that the safety of COVID-19 vaccine has not been guaranteed. Most of the college students' comments on COVID-19 vaccine are positive.

References

[1] Wang Zhiwei, Li Zhi, Huang Huimin, Yang Zhicong, Lu Jiachun. Investigation on cognition and vaccination intention of novel coronavirus vaccine among residents in Guangzhou [J]. Modern Preventive Medicine, 2021 748 (04): 732-737.
[2] Beijing Business Daily. The Food and Pharmacy Bureau investigated the adverse reactions of COVID-19 vaccination. 2020,12,21.
[3] Zhang Hangjie, Ding Linling, Pan Xuejiao, Shen Lingzhi, Zhu Yao, Chen Fuxing, Fu Jian, Gao Fu, Lu Huakun. Investigation on vaccination willingness and influencing factors of novel coronavirus among medical and health workers in Zhejiang Province [J/OL]. Vaccine and Immunization in China: 1-7 [2021-06-14]. Https://doi.org/10.19914/j. CJVI.2021030.
[4] Wu Guowei, Deng Ting, Zhang Manqi, Liu Zhening, Pu Weidan, Wang Jianxin. Investigation on COVID-19's attitude towards vaccination and its psychosocial factors [J/OL]. Chinese Journal of Clinical Psychology, 2021 (03): 622-625 [2021-06-14]. https://doi.org/10.16128/j.cnki.1005-3611.2021.03.036. "Know COVID-19 pay attention to the Research and Development of drugs for epidemic Prevention and Control".