

A survey of differences in college students' perceptions, attitudes and behaviours towards COVID-19——Based on a comparative study of medical students and non-medical students

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Abstract. Objective: To understand the differences between medical college students and non-medical college students in terms of cognition, attitude and prevention and control behavior of COVID-19 virus during the normal epidemic prevention and control stage. Methods: Questionnaires were issued to students of Chongqing Medical University and other colleges and universities across the country and data were collected powered by www.wjx.cn. Later, SPSS26.0 and Excel were used for statistical analysis and processing of the survey data. Results: A total of 333 valid questionnaires were collected in this survey, including 210 valid questionnaires for medical college students (63.1%) and 123 valid questionnaires for non-medical college students (36.1%). There are statistically significant differences between the two types of college students in cognitive level, school closure policy and government management policy ($P < 0.05$). In terms of cognition, when students majoring in medicine and students majoring in non-medicine are asked whether asymptomatic infected persons can become the source of infection ($P = 0.019$), and when COVID-19 is exposed to high concentration of aerosol in a relatively closed environment for a long time, There were significant differences in the answers to questions such as whether aerosol transmission is possible ($P = 0.001$), whether N95 and surgical masks can effectively isolate COVID-19 virus ($P = 0.001$); In terms of attitude, there was a significant difference between the two types of students only on whether the school closure policy and the government's policy of "no visiting and no gathering" was necessary ($P = 0.01$). In terms of prevention and control behavior, there was no statistical significance between medical college students and non-medical college students ($P > 0.05$). Conclusion: College students have a higher level of awareness of the COVID-19 epidemic, but the level of awareness of medical students is significantly higher than that of non-medical students; non-medical students have a higher degree of recognition of COVID-19-related policies than medical students; there is no difference in behavior between the two. College students need to improve their awareness, attitudes and behaviors about the epidemic through various methods, and universities and the government should cooperate with each other to establish and improve the epidemic prevention and control system, and promote college students to become a firm group fighting against the epidemic.

Keywords: college students, medical students, novel coronavirus pneumonia, cognition, attitude, behavior, difference, epidemic knowledge education.

1. Introduction

Corona Virus Disease 2019, COVID-19) (COVID-19) is the widest global pandemic in the past century. It is a serious crisis and severe test for the world, facing a major threat to human life safety and health. To date (February 25, 2022), COVID-19 has infected more than 480 million people worldwide, killing more than 5.9 million people, and more than 100,000 infections and more than 5,000 deaths in China [1].

In the severe situation of COVID-19, many groups use their unique advantages to play a role, and college students are the special groups with high activity [2] It is also the main force in the construction of socialism with Chinese characteristics [3] Whether it has a good sense of social responsibility is also the decisive factor in whether China can overcome the difficulties and obstacles [4]. Therefore, in the current stage of normal epidemic prevention and control in China, college

students are one of the important factors in whether China can win this tough battle. Among them, medical students, as a special group of college students, because of their good health literacy and clinical knowledge level [5] Compared with non-pharmaceutical college students, they can deal with the large-scale explosive public health safety problems more calmly [6]. Therefore, it is particularly important to study the differences between medical and non-medical students in the face of COVID-19.

In addition, according to the survey, the higher the education level of the survey group, the more the information is opaque and open [7] College students, as a group with a high degree of education and due to the particularity of their future career, it is crucial to understand the understanding of the change of the epidemic. After understanding their opinions, they discuss the more feasible methods, which is conducive to dispel the doubts of this group and fight the epidemic together.

Cognitive-attitude-behavior model refers to the individual's cognition of things will determine the attitude, which further forms the behavior will [8], In general, people's response to a sudden public health crisis is often manifested in attitude, cognition and behavior [9]. This study through the investigation of Chongqing medical university and other universities in the face of the attitude, cognition and behavior, and discusses the problems of medical students in response to the public health crisis, and summarizes the corresponding solutions to improve the students' cognition, change their attitude, improve their behavior, and put forward corresponding policies, to improve the students' prevention and control consciousness and responsibility consciousness.

2. Object and Method

1.1 The survey objects adopted the convenient survey method, and distributed the questionnaires to the students of Chongqing Medical University and other universities across the country and collected the data. A total of 333 valid questionnaires were recovered, with an effective rate of 100%. Among them, 210 were valid questionnaires (63.1%) for medical students and 123 (36.9%).

1.2 Methods After referring to relevant literature and the team for discussion and analysis, the questionnaire has designed four parts: general data (including gender, grade, professional category), cognitive part, attitude part, and behavior part. According to COVID-19 Prevention and Control, Health Education Core Information and Interpretation (Third Edition) [9] Six cognitive questions, five attitude questions and five behavioral questions were set up. In the cognitive part, 5 questions are classified as high cognition, and other cases are regarded as low cognition.

3.1 Statistical analysis E xcel forms were exported from the questionnaire star website and statistical analysis was performed by SPSS 26.0 software. Taxonomic variables and percentage composition describe the data, and chi-square test is used for difference analysis. Chi-square test is a non-parametric test, mainly comparing the association analysis of two or more sample rates (composition ratio) and two categorical variables. A significance value (p-value) less than 0.05 indicates that the difference between the two samples is statistically significant.

3. bear fruit

2.1 General data and Overview: A total of 333 questionnaires were recovered, with a response efficiency of 100%. The ratio of male to female students was 0.74:1; the ratio of medical students to non-medical students was 1:0.58 There were significant differences between medical students and non-medical students in the gender ratio and each grade ratio ($p=0.001$), as shown in Table 1.

Table 1. Frequency and verbal ratio of demographic variables

	Number to composition ratio (n%)			
	Pharmaceutical major (n=210)	Non-pharmaceutical major (n=123)	χ^2	p
man	72(34.3%)	53(43.1%)	16.234	0.001
woman	138(65.7%)	70(56.9%)		
freshman	53(25.2%)	31(25.2%)	28.637	0.001
sophomore	82(39.0%)	78(63.4%)		
junior	53(25.2%)	13(10.6%)		
senior	12(5.7%)	1(8.1%)		
Big five	7(0.33%)	0		
bachelor or above degree	3(0.14%)	0		

2.2 Analysis of the cognitive differences between the two types of college students: medical students and non-medical students answered whether aerosol (P=0.019) can be aerosol (P=0.001), N95 and surgical masks can effectively isolate COVID-19 virus (P=0.001) (P <0.05). Medical students answered the three questions correctly by 94.3%, 85.3% and 84.8%, respectively, and non-medical students were answered by 85.4%, 65.9% and 69.1%, respectively. In addition, we listed college students who answered 5 or more correctly as high cognitive level, and all college students who answered wrong or 1-4 correctly as low cognitive level. The difference in the cognitive level (P =0.001) was also statistically significant (P <0.05). Among them, 69.5% of medical students were high cognition and 49.6% of non-medical students were high cognition. See Table 2.

Table 2. for cognition and composition of covid-19

	Know the number and composition ratio n (%)		c ²	p
	Pharmaceutical specialty (n=210)	Non-pharmaceutical specialty (n=123)		
Can asymptomatic infected persons be a source of infection	198(94.3%)	105(85.4%)	7.19	0.009
Pick the mask misunderstanding	161(76.7%)	99(80.5%)	6.764	0.0149
Whether COVID-19 can propagate through aerosols when long exposed to a high concentration of aerosols in a relatively closed environment	175(85.3%)	81(65.9%)	13.805	0.0001
Safe social distancing during the outbreak	103(49.1%)	53(43.1%)	2.333	0.0675
Whether the COVID-19 latency is 1-14 days	186(88.6%)	104(84.6%)	4.678	0.096
N95, whether surgical masks can effectively isolate the COVID-19 virus	178(84.8%)	85(69.1%)	14.134	0.0001
degree of awareness			12.091	0.0001
High recognition (correct questions 5 or above)	146(69.5%)	61(49.6%)		
Low cognition (all wrong or correct questions 1-4)	64(30.5%)	62(50.4%)		

2.3 Analysis of the difference in attitudes between the two types of college students: In terms of attitude, both medical students and non-medical students are willing to join the epidemic prevention and control volunteer team, treat COVID-19 carefully, can definitely consciously stay at home for 14 days, and often buy the most epidemic protective equipment. There is no statistical significance in the answers of the above questions ($P > 0.05$). But in the question of "the current school closure policy and the government policy of" no visiting, no parties "", the difference in the answers of the two types of college students has statistical significance ($P = 0.01$). of these, 62.9% of medical students considered very necessary, and 78.1% of non-medical students. See Table 3.

Table 3. Attitudes and composition ratios to covid-19

	Number to composition ratio (n / %)		c ²	p
	Pharmaceutical specialty (n=210)	Non-pharmaceutical specialty (n=123)		
Is the current school closure policy and the government's "no visits, no party" policy necessary			9.198	0.01
It is very necessary	132(62.9%)	96(78.1%)		
It will reduce going out	66(31.3%)	25(20.3%)		
Very unnecessary	12(5.7%)	2(0.02%)		
Are you willing to join the volunteer epidemic prevention and control team			1.83	0.401
under protest	8(3.8%)	4(3.3%)		
neutrality	57(27.1%)	42(34.2%)		
be willing	145(69.1%)	77(62.6%)		
Attitudes towards the Novel Coronavirus			2.777	0.249
pay no attention to	6(2.9%)	3(2.4%)		
Heart fear	11(5.2%)	2(1.6%)		
handle with care	193(91.9%)	118(95.9%)		
Can you consciously do home quarantine for 14 days			4.951	0.175
not on your life	2(1.0%)	1(0.8%)		
3-7 Days can be	25(11.9%)	10(8.1%)		
OK for 8-14 days	45(21.4%)	17(13.8%)		
absolutely can	138(65.7%)	95(77.24%)		
Buy epidemic protection equipment			1.599	0.66
never	6(2.9%)	5(4.1%)		
once in a while	80(38.1%)	51(41.5%)		
often	91(43.3%)	53(43.1%)		
always	33(15.7%)	14(11.4%)		

2.4 Two kinds of college students in behavior difference analysis between medical students in COVID-19 virus have good prevention and control behavior, are often open the window ventilation, occasionally keep reasonable diet and exercise, often go out wearing masks, not reuse masks 3-5

times, with soap a day, hand sanitizer times more than 6 times accounted for the most. However, in the behavior of "sealing discarded masks or sprinkling disinfectant and discarding them", the number of people without sealing or dumping disinfectant is the most. The difference in behavior between the two types of college students was not statistically significant ($P > 0.05$). See Table 4.

Table 4. Covid-19 behavior and composition ratio

	Pharmaceutical specialty (n=210)	Non-pharmaceutical specialty (n=123)		
Open the window ventilation			2.09	0.554
not have	3(1.4%)	3(2.4%)		
once in a while	46(21.9%)	34(27.6%)		
often	90(42.9%)	50(40.7%)		
q.d	71(33.8%)	36(29.3%)		
Keep your diet and exercise properly			1.456	0.693
not have	10(4.8%)	5(4.1%)		
once in a while	89(42.4%)	49(39.8%)		
often	85(40.5%)	48(39.0%)		
q.d	26(12.4%)	21(17.1%)		
Wear a face mask when going out			3.754	0.289
Don't wear	3(1.4%)	0(0.0%)		
once in a while	70(33.3%)	34(16.2%)		
often	96(45.7%)	58(27.6%)		
at every turn	41(19.5%)	31(14.8%)		
Waste masks are sealed or sprinkled with disinfectant before discarding				
not have	118(56.2%)	64(30.5%)	0.625	0.891
once in a while	62(29.5%)	39(31.7%)		
often	17(8.1%)	12(9.8%)		
at every turn	13(6.2%)	8(6.5%)		
Repeat the mask 3-5 times			1.774	0.183
yes	62(29.5%)	45(36.6%)		
deny	148(70.5%)	78(63.4%)		
Wash your hands with soap and hand sanitizer every day			0.539	0.91
0 Times	13(6.2%)	8(6.5%)		
1-3 Times	77(36.7%)	41(33.3%)		
4-6 Times	42(20.0%)	28(22.8%)		
More than 6 times	78(37.1%)	46(37.4%)		

4. Discussion

First of all, two types of college students about COVID-19 virus cognition are at a high level, but the questions about safe social distance answer the lowest accuracy, this shows that although the respondents of new outbreak knowledge have good cognition, but like social distance involves specific data problems still very low awareness, that the respondents of deeper public health safety professional knowledge are lacking. At the same time, we found that the cognitive level of non-

medical students was significantly lower than that of medical students, especially the answers to questions involving professional knowledge, such as "whether COVID-19 is long exposed to high concentrations of aerosol in a relatively closed environment", and the correct rate of non-medical students (65.9%) (85.3%) ($P=0.001$), indicating that non-medical students had a lower understanding of epidemiological professional knowledge than medical students, which is in line with fan rooting [6] The conclusion may be due to the different curriculum forms, where medical students are more accessible or familiar with expertise such as epidemiology, and most non-medical students can only learn about such expertise through the Internet, school or community preaching.

Then, in terms of attitude, medical students are less supportive ($P=0.01$) than non-medical students. Two reasons are because the medical majors have a better understanding of COVID-19 and are more optimistic about epidemic prevention and control; On the other hand, medical students are able to obtain relevant information more consciously and take relatively reasonable measures [11] However, it may make them overestimate their own perception, thus affecting their judgment on the current epidemic prevention and control situation, and being blindly optimistic about the current epidemic prevention and control.

Finally, in terms of behavior, there is no statistical significance between medical students and non-medical students ($P>0.05$), and both epidemic prevention and control behaviors are more in line with the requirements of epidemic prevention and control. However, in the post-treatment of the masks, most of the discarded masks were never sealed or sprinkled with disinfectant and then discarded. Our analysis may be because, on the one hand, college students' knowledge of medical items such as masks is not comprehensive enough. According to the study, used masks adsorb pollutants such as atmospheric bacteria, viruses and particulate matter [12] In the severe situation of the epidemic at home and abroad, the arbitrary discarding of untreated masks has a greater risk of secondary infection with COVID-19 virus [13]. Therefore, the irregular behavior of college students is not conducive to effectively preventing the spread of COVID-19 virus.

5. Conclusion

In conclusion, college students have higher awareness of COVID-19, but medical students have significantly more awareness than non-medical students and more awareness of COVID-19 policies than medical students; there is no difference in behavior.

6. Propose

For college students, in the context of the normalization of the epidemic in China, they should first constantly strengthen their self-protection awareness, and consciously do a good job in epidemic prevention and control, such as the post-treatment of discarded masks. Second more should strengthen their own prevention and control consciousness, not underestimate the severe situation of the outbreak, active learning deep epidemic knowledge, abide by the school and the government epidemic prevention and control regulations, response to a series of epidemic prevention and control policy, and medical students as special college students, and more should strengthen their study of professional knowledge, improve professional quality, excellence, achieve mastery through mastery, and can fully use under the epidemic prevention and control of daily life.

For universities, they should first actively communicate with teachers and students and formulate more reasonable epidemic management policies. Secondly, courses on epidemic protection should be given, such as the correct use and effective post-treatment of masks, the safest social distance between the epidemic, as well as epidemic ideological education and training courses, and actively explore advanced individual cases among college students during the epidemic prevention and control period [14], Let the college students understand the society, understand the national conditions in the class, so as to gradually cultivate their sense of responsibility, the sense of hardship, dedication consciousness. Then, schools should also actively understand the psychological state of college

students, such as through the official website and the official public account for publicity and education, to reduce the anxiety of college students [15].

First of all, the government will continue to maintain prevention and control and publicity efforts, guide college students to take protective measures, and improve the level of prevention and control knowledge [16]. Then, we will improve the emergency prevention mechanism for public health emergencies, adhere to early detection, early isolation and early treatment, collect all receivables, and control and actively respond according to law [17]. Finally, actively communicate and cooperate with university units, guide college students to establish a correct outlook on life and values, and cultivate their sense of responsibility. College students will continue to be guided to cooperate with the epidemic, encourage them to actively participate in the volunteer work of epidemic prevention and control in campus and off-campus communities, and promote college students to become firm groups fighting against the epidemic.

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