

Investigation and research on the college students' cognition, attitude and influencing factors to "separate dining system" under the normalization background of epidemic prevention and control

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Abstract: Investigating the cognition, attitude and behavior of students in Chengdu University of Traditional Chinese Medicine on "separate dining system", thus exploring the factors influence the promotion of it, and put forward relevant countermeasures for the implementation under the background of epidemic, which could improve the quality of life of the whole people and cultivate health awareness. Students from freshmen to Senior five of Chengdu University of Traditional Chinese Medicine were selected as the survey objects, and the survey was conducted by means of online questionnaire. A total of 320 valid questionnaires were collected. The result shows that there were more than half of the college students who have heard "separate dining system", and the epidemic had changed the attitude and behavior of their safety and healthy dining, however, the implementation is still low. Exploring the relevant influencing factors, discovery college students believe that the main reason for hindering the "separate dining system" in the family is "the difficulty in changing the long-established dining style of shared meals", while for the restaurant is "increased cost of catering industry".

Keywords: epidemic prevention and control; college students; separate dining system; public chopsticks and spoons; cognition; attitude

1. Introduction

From the beginning of 2020, the novel coronavirus pneumonia (COVID-19) is raging globally. Today, our country's epidemic prevention and control has been normalized. There are also some active epidemic prevention through different ways. In order to adapt to social development, people's habits and methods also changed subtly. Although our country's epidemic has been basically stable, there were still some cases reported by gathering dinners. As a result, the novel coronavirus pneumonia has made people began to re-examine the scientific and rationality of Traditional "system of shared meal" diet habits, and the awareness of civilized dining is significantly improved. In order to pursue more safe, healthy dining habit, more and more people support "separate dining system". On June 21, 2020, the "Separated dining Service Guide" officially began to implement, the vigorously promotion from government departments, news media to "separate dining system" has promoted the public to have a better understanding of it.

Separate dining refers to measuring meals that do not intersect dishes, dishes, drinks, etc. during the dining process^[1]. In the broad sense, eating separately mainly includes three forms of eating separately by position, with public tableware and by oneself. "Separate dining system" is a series of system arrangement based on separate meal^[2]. "Separate dining system" is the simplest and most effective way of health and disease prevention, and it is a civilized, healthy and green way of life. Under the background of COVID-19, it can also help scientific epidemic prevention. The study investigated the awareness and attitude of students in Chengdu University of Traditional Chinese Medicine towards "separate dining system" under the background of normalized epidemic prevention and control, as well as the factors affecting their separate dining, so as to provide data support for the implementation of it, and put forward relevant suggestions and countermeasures based on the survey results.

2. Objects and methods

2.1. Survey subjects

The survey was conducted among freshmen to Senior five in Chengdu University of Traditional Chinese Medicine. Stratified sampling and cluster sampling were used to conduct the survey in February 2022.

2.2. Survey methods

2.2.1. Literature research method

This project mainly through hownet, ten thousand party, and other network database access and analysis of some representative works and review papers, then get the definition of "separate dining system" and related state policies, etc., to realize the feasibility of the implementation and the significance of it, summarize the main factors which affecting its promotion, at the same time, put forward our own views and related countermeasures. The above contents were integrated into the questionnaire for investigation.

2.2.2. Network research method

Through the online "questionnaire star" anonymous survey, stratified sampling and cluster sampling were conducted for different majors and grades, and questionnaires were randomly distributed and collected to screen out valid questionnaires and analyze the survey results. The sample size of formal investigation was selected according to the formula $n = Z\alpha^2PQ/d^2$ of simple random sampling, where P is the estimated awareness rate, Q= 1-p, $Z\alpha \approx 2$, and d is the allowable error (0.1P). After consulting relevant literature and data and combining with pre-survey results, the P value is 0.67. Since cluster sampling is involved and the sample size is increased by 50% based on the sample size estimated by simple random sampling, the sample size is $n = (22 * 0.67 * 0.33 / 0.0672) * 1.5 \approx 296$. During the formal survey, 320 questionnaires are used to carry out the survey to control the effects of invalid questionnaires.

2.2.3. Interviews

After the collection of the questionnaire, in the analysis of the questionnaire data, aiming at some questions about attitudes and influencing factors involved in the questionnaire, some survey objects were randomly interviewed and the relevant reasons were summarized.

2.3. Survey content

The content of this questionnaire is mainly guided by KAP, and a more complete questionnaire is designed based on relevant literature review. The main content includes the basic information of the respondents (gender, major, grade, national, number of families living together), the recognition of "separate dining system", attitude, factors affecting its application, access to get information and other related issues.

2.4. Quality control

Before the formal investigation, a small scale pre-investigation was carried out to continuously optimize the questionnaire questions and found out the errors or ambiguities in the questionnaire. After continuous modification, the final ideal questionnaire was determined. The same mobile phone number or IP address can only be answered once. Sensitive words should be avoided in the questionnaire, and blank items didn't be submitted. The questionnaire with less than 2min of answer time was screened as invalid. Establish instructions for filling in the questionnaire, and briefly explain the content, significance and filling method of the questionnaire at the beginning of the questionnaire.

2.5. Statistical Analysis

The qualitative and quantitative data of the questionnaire were collected and a database was established. SPSS25.0 software was used for statistical analysis. Chi-square test was used between qualitative data groups, and $P < 0.05$ was statistically significant.

3. Results

3.1. Basic information of the respondents

A total of 320 questionnaires were obtained in this survey, of which 320 were valid with an effective rate of 100%. The basic information of the research objects is shown in Table 1. The ratio of male to female is about 4:6, which is similar to that of the surveyed schools and is representative to a certain extent.

Table 1: Basic information of research objects

Name	Classification	Total	Percentage
Gender	Male	136	42.50%
	Female	184	57.50%
Profession	Medicine	217	67.81%
	Non-medical	103	32.19%
Grades	Senior five	27	8.44%
	Senior four	63	19.69%
	Junior	92	28.75%
	Sophomore	63	19.69%
	Freshman	75	23.44%
Nationality	Han nationality	300	93.75%
	Minority	20	6.25%
Number of families living together	3 people and below	115	35.94%
	4 people	102	31.88%
	4 people and above	103	32.19%
Monthly living expenses	More than 800 yuan	14	4.38%
	800-1000 yuan	53	16.56%
	1100-1500 yuan	170	53.13%
	More than 1500 yuan	83	25.94%

3.2. College students' recognition of "separate dining system"

Through this survey, we find that 189 people in the survey have heard of "separate dining system", accounting for 59.06% of the total number of people. The main way to know about it is the Internet (mobile phones, computers, etc.), followed by TV and radio. Among these people, the ways of separate dining that they know or have contacted meals according to position, dividing meals with public tableware, and take meals by themselves, accounting for 70.37%, 85.19%, and 72.49%, respectively. This suggests that public tableware such as public chopsticks and spoons may be the more common and easier way of separate dining. In view of the fact that some students may not have heard of the "separate dining system", but know its related form, the questionnaire also investigated whether they have heard of some suggestion like public chopsticks and spoons or dining separately in various regions and institutions recently. 198 people in the survey had heard of it, accounting for 61.88% of the total number of respondents. Among the 320 people surveyed, the three benefits brought by "separate dining system" are most agreed with, accounting for 95%, 47.81% and 44.06% of the total number of people respectively, which are helpful to reduce cross-infection of foodborne diseases, reduce food waste, make dining more civilized and form a good dining culture, as shown in Figure 1. From the aspects of health, saving food and civilized dining, it reflects the cognition of the benefits brought by "separate dining system". As for which diseases can be effectively reduced by separate dining, most of the respondents agreed that it can effectively reduce the transmission of *Helicobacter pylori*, followed by hand, foot and mouth disease and the novel coronavirus pneumonia infection.

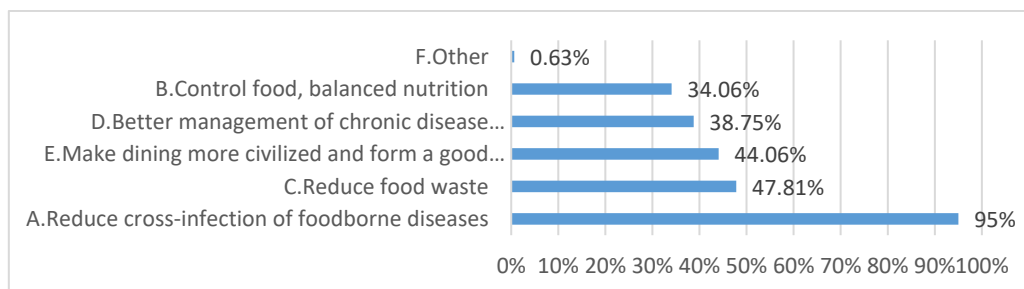


Figure 1: Cognition of the benefits of "separate dining system"

3.3. College students' attitude towards "separate dining system" and its influencing factors

In the survey group, 292 people, accounting for 91.25% of the total, believe that it is necessary to implement separate meals during the novel coronavirus pneumonia outbreak. The comparison of the implementation of separate dining before and after COVID-19: Before COVID-19, 29.06% never dined separately at restaurants, 3.13% always did; after COVID-19, 20% never did, and 8.44% always dined separately. From the visible slogan of "public chopsticks and spoons", this paper investigated the implementation of "separate dining system" among college students, and found that the willingness to use public chopsticks and spoons decreased significantly when there was no slogan next time. It can be suggested that civilized slogans have a certain positive effect on the behavior of dining separately when using public chopsticks and spoons.

According to the survey, 298 people think that the main reason hindering the promotion of family "separate dining system" is that "the difficulty in changing the long-established dining style of shared meals", accounting for 93.13% of the total number, as shown in Figure 2. 65.94% of the total number of respondents, namely 211 people, think that the main reason hindering the promotion of "separate dining system" in restaurants is "increased cost of catering industry", as shown in Figure 3, which can provide some guidance for the later promotion. It is considered that the feasible method to implement the "separate dining system" is to implement the "public chopsticks and spoons" firstly, accounting for 77.81% of the total number of people, so the implementation of the "separate dining system" can be considered from the promotion of "public chopsticks and spoons". As for how to publicize the "separate dining system", the survey found that college students are more interested in "restaurant posters, street banners, online promotional videos, variety shows and other entertainment embedded propaganda", which can be considered to popularize knowledge through the above channels. For the propaganda content, the research objects would like to know more about how to implement the "separate dining system" at home or restaurants, the reason for implementing the "separate dining system", and the matters needing care when using public chopsticks and spoons.

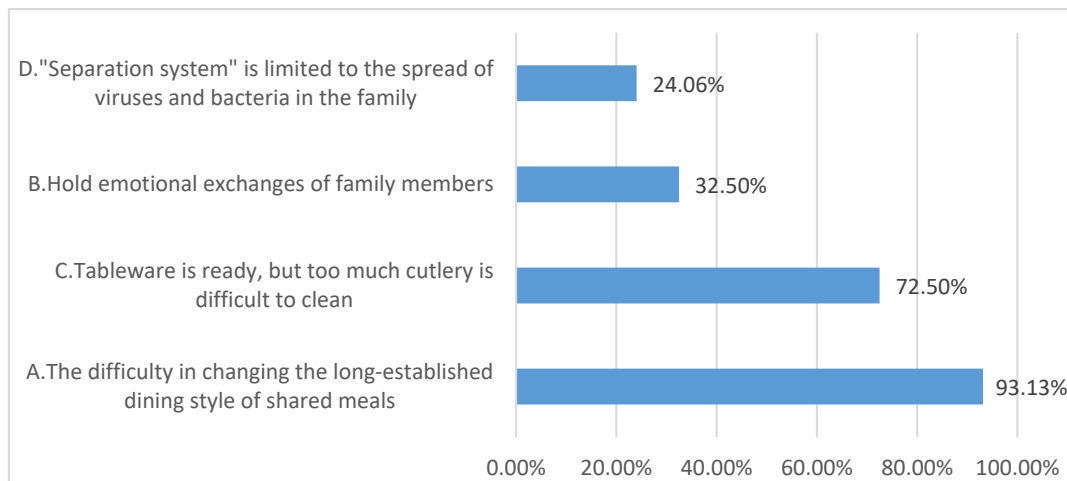


Figure 2: The main reasons hindering the promotion of family "separate dining system"

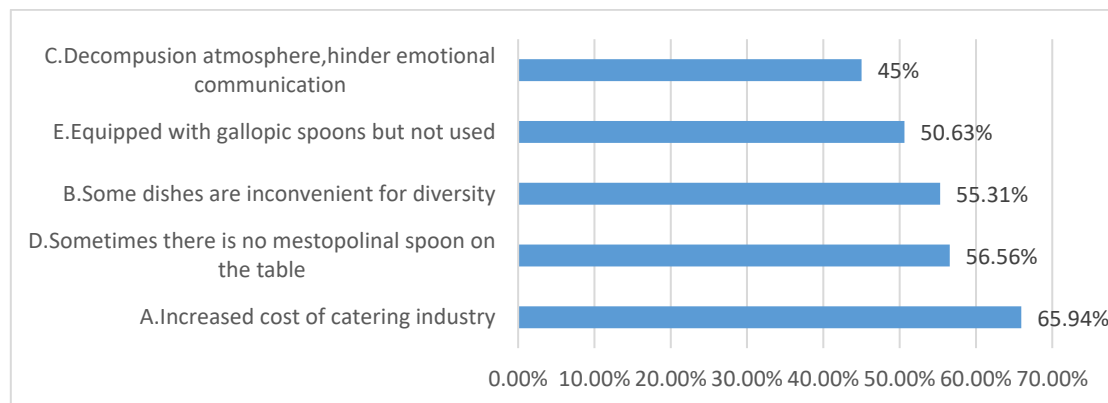


Figure 3: The reasons that hinder the promotion of "separate dining system" in restaurants

Through interviews with some of the students whether willing to implement the "separate dining system" or not, the students who are willing to implement it believe that it can reduce the spread of diseases such as *Helicobacter pylori* infection, meanwhile, it is relatively more sanitary, and they can be more assured when eating with unfamiliar people or people with bad dining habits. Students who did not want to implement separate dining argued that different cultures naturally lead to different living habits. It is not in line with the accepted cultural concept of "separate dining system" for all people, and they should only be used in places that require special "gastrointestinal isolation".

4. Discuss

4.1. The epidemic has improved college students' health awareness

In April 2020, the Social Survey Center of China Youth Daily jointly conducted a survey of 2014 respondents on questionnaire network. According to the survey, most respondents said that they would dine separately when dining out after the epidemic, and 73.5% of them believed that it was necessary to promote "separate dining system" to develop civilized and hygienic dining habits [3]. In our study, 292 people, accounting for 91.25% of the respondents, also believe that it is necessary to implement "separate dining system" during the epidemic period. Comparing the implementation of separate eating system before and after COVID-19, the extent of implementing "separate dining system" in restaurants before and after COVID-19 has changed, suggesting that the epidemic may have changed the attitude and awareness of safe and healthy dining among college students. The possible reason is that during the epidemic period, the publicity of using public chopsticks and spoons has played a certain health education effect. At the same time, the fifth chapter of the Health Education Manual on COVID-19 Prevention and Control, which was compiled by The China Health Education Center on September 10, 2020, also includes a discussion on "Why promote separate dining system and use public spoons and chopsticks?", "How to implement separate dining and use public spoons and chopsticks in families?", "How to overcome the emotional barrier caused by dining separately and using public spoons and chopsticks?", "What should be pay attention to when using public spoons and chopsticks?" This manual was distributed in universities and increased students' understanding of "separate dining system" to some extent.

4.2. Priority can be given to woman to promote "separate dining system"

The survey found that women's awareness of "separate dining system" and support for the implementation of it during the epidemic were higher than men's ($P < 0.05$), as shown in Table 2 and Table 3 below. This may be due to the common belief that women are relatively more sensitive than men and may be relatively more health-conscious. In the traditional concept of family responsibility and division of labor system, the women in the marriage, especially after marriage, they have more child care responsibilities than men^[4], given that most women undertake the diet of children, the elderly and chronic disease patients' diet management, so in raising awareness and implementation of "separate dining system", cultivate related health idea can start as propaganda object from woman.

Table 2: Gender differences in recognition of "separate dining system"

Name	male	female	χ^2	p
Know	68(50.00%)	121(65.76%)	8.034	0.005
Unknown	68(50.00%)	63(34.24%)		
Total	136	184		

Table 3: Gender differences in support for the implementation of "separate dining system" during the epidemic

Name	male	female	χ^2	p
Support	117(86.03%)	175(95.11%)	8.074	0.004
Not support	19(13.97%)	9(4.89%)		
Total	136	184		

4.3. Improving college students' health awareness and knowledge is conducive to the implementation of "separate dining system"

Under the influence of the epidemic, college students have a new understanding of the way of dining. According to the survey, they may mainly benefit from the popularity of online media, so they have a certain understanding of the "separate dining system", however, they still lack health awareness and relevant knowledge. Therefore, it can be considered to popularize relevant knowledge through entertaining implantable propaganda such as restaurant posters, street banners, campus science, education activities, and variety shows, so as to make them aware of the health and safety risks brought by "shared dining system". And let college students fully and correctly understand the "separate dining system" to help reduce cross-infection of foodborne diseases, reduce food waste and other benefits, cultivate college students related health awareness, form a good catering culture, make the catering more civilized and healthy.

4.4. Promoting the habit of dining separately at home is conducive to the promotion of "separate dining system"

The survey found that the main reason hindering the spread of separate meals was "the difficulty in changing the long-established dining style of shared meals." If the family eating habits can be promoted through publicity, for example, parents take the lead in setting a good example and start to cultivate good eating habits from an early age, which will help improve the enthusiasm of consumers to choose the related forms of dining out. In addition, starting from the prevention of family cluster *Helicobacter pylori* infection, it is also more conducive to be accepted and supported by the public, and targeted publicity of health education also need to be carried out in hospitals.

4.5. The implementation of "separate dining system" can start from "public chopsticks and spoons"

The reasons that have hindered the promotion of separate meals in restaurants include the "increased cost of catering industry" and "the lack of serving chopsticks and spoons on the table". Serving chopsticks and spoons not only retain the atmosphere of eating around the table, but also can effectively avoid cross infection, which is a simple and low-cost way of dining separately. If one has the right health concept and understands the benefits of "separate dining system", then using chopsticks and spoons in meals can show a responsible attitude towards the health of others, which is easier for the public to use when dining at home or out. The study found that by posting "please use the public chopsticks and spoons" slogan in the restaurants, the College students are more willing to use it. So as to cultivate the habit by using the public chopsticks and spoons, attention should be paid to in the restaurant to post related publicity slogans, and use clearly marked public chopsticks and spoons. We can give priority to help the service staff of the restaurant cultivate the habit of using, and propaganda to customers. Relevant departments can also give appropriate rewards to the restaurant that promotes the implementation of separate dining to form a positive effect.

4.6. Targeted promotion based on respect for cultural differences

The implementation of "separate dining system" is not just a simple change of public living habits, but also influenced by cultural background, values and many other factors^[3]. In the interview, we found that some students hold the view that "different cultures naturally lead to different living habits", which has to make people think whether "separate dining system" is in line with people's life and cultural concepts. Dining culture formation is the result of Chinese demand for emotional communication, today's "shared dining" is China's main table culture^[5] in the family and in the restaurant, and is the more common form, but in some important and formal occasions, such as a state banquet dinner "separate dining system" is still the standard form. So in the propaganda we should consider family culture and social cultural differences. In our daily life, it is easier to be accepted by the public to give priority to targeted publicity and promotion in families with elderly people, children, chronic diseases or patients with stomach diseases.

5. Conclusion

Through the above research, it is found that college students have a good recognition of "separate dining system", and the most recognized benefit of it is that it can reduce cross-infection of foodborne

diseases. Among the surveyed population, 91.25% agreed that it was necessary to implement "separate dining system" during the epidemic period. The data showed that college students' ability to implement it had changed before and after the epidemic, but it was still relatively low in general. By analyzing the relevant influencing factors, it is concluded that the main reasons hindering the implementation of "separate dining system" are that it is difficult to change long-established dining style of shared meals and separate dining will increase the cost of catering industry. At the same time, it is found that the recognition and support of "separate dining system" among women are higher than that of men. In view of the above research results, it is suggested to give priority to women as the target of publicity, and advocate the family "separate dining system", starting from the use of public chopsticks and spoons to carry out targeted promotion of it. In the process of investigation, it was also found that college students still lack health awareness and related knowledge, so it is very important to strengthen science education and publicity. Specifically, knowledge popularization can be carried out from how to implement "separate dining system" at home or restaurants, the reason for implementing it, and attention when using public chopsticks and spoons.

Acknowledgements

This paper is an investigation and research on the awareness, attitude and influencing factors of "separate dining system" among college students in Chengdu University of Chinese Medicine under the background of epidemic prevention and control normalization (Project Number: ky-2022138).

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