

## *Original Paper*

# Interpretative Phenomenological Analysis of Factors for the Use of Serving Chopsticks and Separate Dining in Sichuan and Chongqing, China

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### ***Abstract***

***Objectives:*** To conduct a qualitative phenomenological study exploring factors for using serving chopsticks and separate dining.

***Methods:*** Qualitative phenomenological research was conducted via face-to-face, semi-structured interviews. All interview transcripts were analyzed using the seven steps of Colaizzi phenomenological data analysis and were input into the Nvivo12 (qualitative research analysis software) through sentence-by-sentence, word-by-word coding and formed themes.

***Results:*** Two main themes and fifteen sub-themes were found. The barriers in implementing serving chopsticks and separate dining include consumers bearing the cost of serving chopsticks and separate dining in the end; long-established dietary habits and culture background of willingness to share food with others by using own chopsticks or eating in one pot; the difficulty for low-end catering to implement the serving chopsticks and separate dining; separate dining bringing challenges to grasping the quantity of meals given each person's varying preferences; weak public awareness of serving chopsticks and separate dining; their perception that troublesome and embarrassing, separate dining destroys the overall aesthetic of the food; and no sophisticated design of serving chopsticks and separate dining. Suggestions to implement serving chopsticks and separate dining include pioneering the implementation and training of communal chopsticks sharing in the restaurant industry, the collective units implementing the serving chopsticks system, producing highly recognizable serving chopsticks, creating a living atmosphere of serving chopsticks, promoting the comprehensive government system to form a new "food" fashion, conducting serving chopsticks experience activities, guarantee through government mandatory

*policies starting with teenagers, prioritizing the implementation of serving chopsticks, and gradually promoting the serving chopsticks system.*

**Conclusions:** *Mandatory government policies and measures, public education on serving chopsticks, creating a good atmosphere for serving chopsticks, the production and sale of recognizable chopsticks and reasonable separate dining design, and the initiative of the catering industry and unit canteens to assume the responsibility of chopsticks sharing are required.*

**Keywords**

*Serving chopsticks, Separate dining, Qualitative study, Barriers Suggestions*

**1. Introduction**

From historical records, we found that Chinese ancestors began using chopsticks in the Shang Dynasty. Chopsticks, as a dining tool in daily life, are also an integral part of traditional culture and have profound traditional cultural connotations in China[1]. It somewhat projected on the spiritual level of Chinese people and affects Chinese people's thinking and feelings[2]. Chopsticks have been essential eating utensils for over 3 millennia, particularly in Asia, and are made of wood and plastic; metal chopsticks are used in some countries, such as South Korea. Generally, people respectively use their own chopsticks to take food from the same plate or serve others as a show of respect and care for others in China. However, behaviors such as the above could take some hygienic risks. Study findings suggest the potential for SARS-CoV-2 transmission through wooden chopsticks used by five consecutive asymptomatic and post-symptomatic patients[3]. Serving chopsticks refer to those used for serving food from a shared dish to an individual's plate and are used to address hygiene concerns in our study.

The separate dining mentioned in this study refers to the non-crossing and non-mixing of tableware and dishes (drinks) in the process of dining[4]. It enables the reasonable colocation of food, ensuring the body's nutrition is balanced, depending on the actual situation of different groups of people, and allowing us to eat scientifically by grasping precisely individual nutritional needs[5]. In fact, the traditional Chinese way of eating has been undergoing a long evolution from separate dining to shared meals. Since the Sui and Tang Dynasty, the shared meals system slowly formed and has become the mainstream practice of society during the Northern Song and Southern Song Dynasties[6]. Regrettably, a shared meal has two potential health hazards: (1) causing the spread of diseases and (2) increasing the difficulty of monitoring nutrition and healthy eating habits, especially for the young[7].

According to the WHO statistics, saliva is one of the most common ways of disease transmission (e.g., hepatitis A, influenza, enteroviruses [norovirus], and *Helicobacter pylori*). In late 2019, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) emerged in China, spreading primarily through droplets and contact with respiratory secretions or fecal materials[8,9]. Communal eating may accelerate the transmission of pathogens such as coronavirus through saliva[10], and has therefore been advised against by health officials in campaigns such as the "dining table revolution" to encourage the use of serving chopsticks as well as eating from separate portions rather than from the same plates[11].

Additionally, serving chopsticks and separate dining could prevent the virus from spreading to others through chopsticks with saliva during meals. The Dietary Guidelines for Chinese Residents (2022) refer to the eighth criteria of the dietary guidelines for the general population and mentioned serving chopsticks and separate dining. It shows that one serving per person, with relatively independent tableware for each person, or using serving chopsticks and spoons, can effectively reduce the risk of oral and saliva-transmitted infectious diseases and the risk of cross-infection[12]. However, a study published in 2020 revealed that only 44.2% participants followed the recommended dietary behavior of individual food servings, and 44.8% used serving chopsticks and spoons in the post-lockdown period[13]. Current studies have rarely explored the reasons for the difficulties in the implementation of serving chopsticks and separate dining from the perspective of qualitative research.

The study aimed to answer two questions: (1) Why is it so difficult to implement serving chopsticks and separate dining in China? and (2) How can serving chopsticks and separate dining be better implemented in China? The findings of this study may provide valuable information for the implementation of serving chopsticks and separate dining in China and other Asian countries.

## 2. Methods

In real-life contexts, a plethora of intriguing phenomena exists, thus rendering the exploration of their underlying causes and associated experiences a profoundly compelling subject for scholarly inquiry. Interpretative Phenomenological Analysis[14] is being increasingly used as an effective tool in illuminating such experiences. IPA constitutes a qualitative research methodology rooted in phenomenology that views participants as the experts of their own personal and social worlds and seeks to establish an equality of voice between the researcher and the researched.

To enhance the credibility of findings, the IPA studies under scrutiny employed post-interview field notes[15], reflective logs[16], and research diaries[17] to document the procedures and initial interpretations of participants' responses and increase researcher reflexivity. Given the possible temptation to re-describe what participants say rather than interpret and critically engage with their experiences, more emphasis should be placed on producing 'comprehensive, systematic and persuasive' accounts[18] of participants lived experience. Researchers need to enhance their reflexivity by actively engaging with their own experiences and preconceptions, while also recognizing the potential influence of the 'double empathy problem' on their research.

Most common among data collection methods was the semi-structured interview, in which topics and questions are initially guided by the researcher but are responsive to the participant's answers.

### 2.1 Participants

Participants in nutrition, food, agriculture, and sociology were selected for personal semi-structured interviews through purposeful sampling, including 12 in Chongqing and 8 in Sichuan (11 males and 9 females), and their working years in their own fields between 7–40 years. The inclusion criteria were the following: (1) engaged in the current field of work for more than 5 years, (2) volunteered to participate

in this research activity, and (3) participated fully in the entire research process without withdrawing. The sample size of the study was until the data began to be repeated, or the information was saturated and the data analysis was no longer presenting new themes.

### *2.2 Ethical Considerations*

The principle of informed consent was followed. The interview data were only used for this research and did not involve any purpose other than scientific research, and personal privacy including the real names of the interviewees, was guaranteed. Participants were volunteers, and they were ensured that the research data would be kept strictly confidential and presented anonymously; Furthermore, participants were allowed to withdraw at any time. The study was approved by the Ethics Review Committee of Chongqing Medical University and by the Ethics Committee of Chongqing Medical University (see Annex1), with ethics approval number 2021041.

### *2.3 Data Collection*

Through literature review, expert consultation, and the formulation of an interview outline based on the research purpose, the interview outline of this study was modified after the pre-interview with three respondents and was agreed upon by all members of the research team. Meanwhile, standardized training for the investigators (questioning skills, listening skills, and response skills) was carried out. Data collection was conducted through face-to-face semi-structured interviews and in a spatial area away from the outside world. Due to distance constraint, participants in Sichuan Province were interviewed online. The main questions included the following:

- (1) What do you think about the implementation of separate dining? In addition, what are the reasons that hinder the promotion?
- (2) How would you suggest implementing separate dining?
- (3) Can you describe the current status of serving chopsticks and the reasons that hinder their promotion?
- (4) Do you have any suggestions for the implementation of serving chopsticks?
- (5) Do you have anything to add about this interview?

After obtaining the consent of the interviewees, the whole process (the expressions, movements, and reactions of the interviewees) was recorded in real time by using recording tools. Then, the recorded materials were transcribed into text by the interviewer who organized the interview to control the interview within 24 hours. Finally, the text was returned to the interviewees: they were given feedback of the summarized themes and corresponding explanations for reconfirmation to ensure the rigor of the research. Furthermore, the researcher avoided using negative or judgmental statements and attitudes during the interviews.

### *2.4 Data Analysis*

To ensure the quality of translation of the texts, the analysis panel comprised two researchers with qualitative research experience and with mastery of the English language. The illustrative quotes used for the results were initially translated into English; then, the two researchers independently back-translated them into Chinese to assure the quality of translation and consistency. All files were analyzed

using the seven steps of Colaizzi phenomenological data analysis showed in Table 1. The interview transcripts were input into the qualitative research analysis software Nvivo12 for sentence-by-sentence, word-by-word, and word-by-word coding.

**Table 1. Colaizzi's Descriptive Phenomenological Method**

Step	Description
1. Familiarization	Read all protocols to acquire a feeling for them
2. Identifying significant statements	Review each protocol and extract significant statement
3. Formulating meanings	Spell out the meaning of each significant statement
4. Clustering themes	Organize the formulated meanings into clusters of themes
5. Developing an exhaustive description	Integrate results into an exhaustive description of the phenomenon under study
6. Producing the fundamental structure	Formulate an exhaustive description of the phenomenon under study in as unequivocal a statement of identification as possible
7. Seeking verification of the fundamental structure	Ask participants about the findings thus far as a final validating step

### 3. Results

#### 3.1 Basic Information of Participants

This study included a total of 20 residents for personal semi-structured interviews by taking a purposeful sample, including nine female and eleven male respondents. All interviewees have lived in this area for more than 10 years. The participants were numbered N1–N20; N1–N12 were from the Chongqing municipality and N13–N20 from Sichuan Province. Respondents who had previous experience of living in the countryside accounted for 68% and worked in their current fields for 7–40 years (Table 2).

**Table 2. Information of Interviewee**

Number	Have rural life experience	Sex	Title	Main research direction	Working years in the current field (years)
N1	Yes	man	Associate professor	Nutrition, food	40
N2	Yes	man	Professor	Ethnology	20
N3	Yes	man	Professor	Chronic disease management	10
N4	No	female	Associate professor	Sociology	19
N5	Yes	man	Associate researcher	Traditional Chinese medicine	8

N6	Yes	man	Researcher	Catering	20
N7	Yes	man	Professor	Nutrition, Evidence-Based Medicine for Food Safety	12
N8	No	man	Associate professor	Nutrition	18
N9	No	female	Associate professor	Sociology	7
N10	Yes	female	Associate professor	Health information dissemination	10
N11	Yes	female	Professor	Nutrition	16
N12	Yes	man	No	Culinary Chemistry and Management	12
N13	No	female	Chief Physician	Clinical nutrition	15
N14	Yes	man	Researcher	Vegetable varieties and cultivation techniques	27
N15	Yes	man	Editorial review	Sociology	37
N16	Yes	female	Lecturer	Crowd nutrition	8
N17	No	female	Professor	Nutrition and Chronic Disease	19
N18	Yes	female	Professor	Food	30
N19	No	female	Professor	Sociology	12
N20	Yes	female	Professor	Public nutrition	15

### Interview Results showed in Table 3

#### Barriers of implementing serving chopsticks and separate dining

##### Consumers bear the cost of serving chopsticks and separate dining in the end

The extra cost of ingredients and time spent on sharing meals have been transferred to consumers through additional charges for cutlery or through direct price increases for food. Additionally, it increases the financial burden on some people with low income. N12: “serving chopsticks and separate dining have no effect on restaurants, and they are useless for the general public, especially those with extremely low income (less than 3,000); the cost is also transferred to consumers, and it also wastes people’s time.”

##### Long-established dietary habits and cultural background of willingness to share food with others by using own chopsticks or eating in one pot

The long-established dietary habits and culture of the shared meal (Thinking that only eating in the same pot is righteous) hinder the promotion of serving chopsticks and separate dining, and changing it remains difficult. N5: “It is all having a meal in one pot in traditional culture. If separate dining is promoted, it will feel alienating, and changing years of habits overnight is difficult. N8: “The biggest hindrance to the promotion (of serving chopsticks and separate dining) is the traditional food culture that has been formed for a long time.” N20: “It is difficult to promote serving chopsticks and separate dining under the influence of Chinese traditional culture and customs.” N3: “The most important influence is traditional culture. N3: “Cultural reasons. N3: “Sharing food is one of Chinese cultures and has become a daily habit.” N1: “According to the characteristics of Chengdu and Chongqing, it is more difficult for

Chongqing, China to implement the separate dining system because of its shared and unrestrained culture, but public chopsticks can be implemented.” N4: “Chongqing has a marina culture that pays attention to loyalty. Understanding how to divide meals at the table is not easy. For example, everyone drinks a bowl of tea (enamel jar) together in Youyang Chongqing.”

#### **Development of low-end catering industry is affected because of the implementation of the serving chopsticks and separate dining**

The low-end restaurants are too busy to implement serving chopsticks and separate dining, which will affect their business. N18: “It is very difficult for low-end catering small restaurants which are characterized by high customer traffic and cheap prices, and the main service target is the lower income group who are more resistant to share meals with the serving chopsticks and/or separate dining. High-end catering can implement it, but the middle and low-end may be too busy to do it.” N15, N20: “Not many people are coming to dine with pleasure if the restaurants in the villages ask customers to get used to doing this (serving chopsticks and separate dining), and it is difficult for other restaurants to keep open.”

#### **Separate dining brings challenges to grasping the quantity of meals, because each person has different preferences**

Implementing the separate dining is difficult because each person's food consumption and food preferences are different. Thus, how to grasp the amount becomes a real problem. N10: “It is very difficult to implement because everyone likes different food, and grasping the actual quantity of divided meals is difficult.” N8: “Implementing separate dining can be supported if a need arises (e.g., family members have hepatitis A, intestinal infectious diseases, etc.), but the operation is more difficult.”

#### **Weak public awareness of serving chopsticks and separate dining, and they feel the proposed practice to be troublesome and embarrassing**

Getting together among acquaintances is believed to be relaxing, and the practice of serving chopsticks and separate dining seems rusty and formal. Additionally, the procedure of serving chopsticks and separate dining is cumbersome, and using serving chopsticks in certain dishes is unsuitable. In addition, many people who choose to dine in small restaurants are forced to live under pressure and rarely pay attention to dietary health. N20: “The reason that hinders the promotion is that everyone's awareness is not enough; they feel that the proposed practice is troublesome and are not just used to it.” N19: “Public awareness of using serving chopsticks has declined with the stabilizing of the COVID-19 pandemic.” N12: “This is also a habit. Public chopsticks and spoons were used 20 years ago when I went to school, but people seldom use them. First of all, using serving chopsticks and having separate meals feel too cumbersome and a bit awkward because we are all familiar with each other. In Chongqing, using serving chopsticks for certain dishes is not too easy. Most of us will have meals in small restaurants and not in big hotels. People's living standards have not caught up, and many people are rushing for life. Very little consideration is given for this aspect of health, unlike the Shanghai side.” N14: “It's more about the human consciousness chain. Everyone needs to get together to relax. It's okay at the workplace, but it's

not necessary at home. Changing the traditional eating habits and consciousness chain remains difficult.”

### **Separate dining destroys the overall aesthetic of the food**

Accepting separate dining was difficult for people for a while because some traditional foods concern whole cooking and the aesthetics of the whole. N17: “Dividing certain dishes remains difficult in China, as we pay attention to the appearance. The dishes were originally made to look brilliant, but you have to share a point.”

### **No sophisticated design of serving chopsticks and separate dining**

Separate dining faces huge challenges because no proven system exists for sharing meals and dishes deemed to be good looking. N7: “No relevant separate dining design exists for modern diets; thus, it will raise several things and cause burden if implemented.”

### **Suggestions on implementing serving chopsticks and separate dining**

#### **Pioneering the implementation and training of serving chopsticks and separate dining in catering companies**

Encouraging the catering companies to take the lead in serving chopsticks and separate dining in the restaurant industry may yield good results because people are more willing to accept them in the context of the epidemic. Moreover, doing so will give them training and other support to further standardize their operation. N1: “Public areas should be prioritized in carrying out serving chopsticks and separate dining.” N19: “I think restaurants are not yet adequately promoting the proposed practice. Contrary to the traditional concept, it is easier to avoid embarrassment if the restaurants lead in preparing the serving chopsticks and separate dining.”

#### **Collective units implement the separate dining system**

The implementation of serving chopsticks and separate dining in collective units can better give people a sense of experience, and the latter can help in the implementation. N20: “Taking the advantage of popular science and publicity of separate dining, collective units should implement centralized dining according to the separate dining system.” N11: “Serving chopsticks and separate dining could be conducted at first in Pilot sites (government agencies, school canteens, etc.) to improve the sense of experience that residents enjoy in the actual separate dining system.”

#### **Produce highly recognizable serving chopsticks**

Distinguishing between serving chopsticks from private ones can be done through certain characteristics of serving chopsticks. N20: “Fully promoting the popularization and use of serving chopsticks and producing some highly recognizable serving chopsticks are recommended.” N19: “For example, the restaurant should be required to prepare two colors of chopsticks: the light color is used as public chopsticks, and the dark color is used as private chopsticks.”

#### **Create a living atmosphere of serving chopsticks and separate dining and promote the comprehensive government system to form a new “food” fashion**

Various communication media should be used to create a sense of atmosphere of serving chopsticks and separate dining. Focus should be placed on the advantages of sharing meals with serving chopsticks and



separate dining through the popularization of science to let people identify with the eating behavior of using serving chopsticks and separate dining from deep inside their hearts. Additionally, it could help form a consistent sense of dining and avoid embarrassing incidents. N7: “Let everyone think this (serving chopsticks) is right through publicity, make it become a new fashion, and give everyone a sense of psychological satisfaction by creating a good atmosphere.” N9: “I will follow the local customs and divide the occasion. If my family member is sick, I will divide the meal. If they share the meal, I will also share the meal when I go to relatives and friends’ homes. But if they don’t do separate dining, I will not.” N3: “Use the whole system government behavior; publicize serving chopsticks and separate dining through the media (e.g., mobile TV and Douyin [a Chinese short video platform]); use the concept of government, behavior trends, and thinking atmosphere to promote changes in healthy eating behaviors to change the current poor situation of the implementation of serving chopsticks and separate dining.”

#### **Carry out serving chopsticks and separate dining experience activities**

Innovating the channels of serving chopsticks sharing meal propaganda is necessary, and carrying out experiential activities in conjunction with good traditional culture is a good choice. N11: “To host some experience activities, for example, Confucius’ apprenticeship can be combined with the promotion of separate dining.”

#### **Guaranteed by government mandatory policies**

The restaurant industry should implement the serving chopsticks and separate dining system bound by mandatory measures and policies (developed by the government of China). N8: “The government and media should continue to publicize and strengthen advocacy serving chopsticks and separate dining), and the government can introduce policies to force catering enterprises to provide consumers with the conditions of a separate dining or serving chopsticks.” N9: “The government can issue policies to force the catering industry to provide consumers the conditions of a separate dining system or serving chopsticks. Then, the common people will gradually improve; once everyone accepts the policy, their behavior will slowly change.”

#### **Start with teenagers**

Children and adolescents are more likely to accept communal chopsticks for the serving chopsticks and separate dining system because they are less influenced by traditional Chinese food culture than adults. N3: “It (serving chopsticks and separate dining) is easier to promote among teenagers because they are less influenced by traditional culture than adults.” N4: “The implementation of meal sharing should start from childhood, school, and family. At present, very little education exists on food culture and table civilization in primary schools. It should start from three aspects: a macro policy guidance from the macro perspective should be in place, the meso level is guided by the school, and the micro level is guided by family and individual.”

#### **Prioritize the implementation of serving chopsticks and gradually promote the separate dining system**

Prioritizing the implementation of serving chopsticks may be better at this stage because people are more

receptive to the implementation of serving chopsticks (especially in families) and to gradually implement the meal-sharing system. N10: “The meaning of gathering together will be lost if several friends have a separate dining in the restaurant, but it is easier to implement serving chopsticks.” N17: “Serving chopsticks should be promoted before the separate dining system because accepting the former is easier than the latter. I think the promotion of serving chopsticks should be done first, and the separate dining system implementation must depend on the situation.” N18: “It is enough to use serving chopsticks at home, and the separate dining mainly depends on the situation.”

**Table 3. Main Themes and Sub-themes from the Study**

Main themes	Sub-themes	Original statement
Barriers of implementing serving chopsticks and separate dining	Consumers bear the cost of serving chopsticks and separate dining in the end	N12
	Long-established dietary habits and cultural background of willingness to share food with others by using own chopsticks or eating in one pot	N3, N6, N1, N4, N5, N8, N20, N3, N17
	Development of low-end catering industry is affected because of the implementation of the serving chopsticks and separate dining	N18, N15, N20
	Separate dining brings challenges to grasping the quantity of meals, because each person has different preferences	N10, N8
	Weak public awareness of serving chopsticks and separate dining, and they feel the proposed practice to be troublesome and embarrassing	N14, N15, N20, N19, N12
	Separate dining destroys the overall aesthetic of the food	N17
	No sophisticated design of serving chopsticks and separate dining	N7
Suggestions on implementing serving chopsticks and separate dining.	Pioneering the implementation and training of serving chopsticks and separate dining in catering companies	N1, N19
	Collective units implement the separate dining system	N20, N11
	Produce highly recognizable Serving Chopsticks	N20, N19
	Create a living atmosphere of serving chopsticks and separate dining, and promote the comprehensive government system to form a new "foo" fashion	N20, N7, N9, N3, N11
	Carry out serving chopsticks and separate dining experience activities	N11, N3
	Start with teenagers	N3, N4
	Prioritize the implementation of serving chopsticks and gradually promote the separate dining system	N10, N17, N18, N2

#### 4. Discussion

Implementing serving chopsticks and separate dining in China seems to not be very feasible. First, the traditional food culture and eating habits are extremely deeply rooted that changing it is difficult. Second, the implementation of serving chopsticks will have an effect on the catering industry and consumers, the time and material cost of chopsticks sharing will be directly or indirectly transferred to consumers, and it also brings certain extra tedious work to the catering industry, not mentioning the risk of losing customers. Finally, public awareness of the value of introducing serving chopsticks and separate dining is weak, and the people think that the proposed practice is troublesome or embarrassing.

Family-style eating is typical of Chinese culture and manifests itself in people sharing dishes together rather than ordering and eating individually. People often gather around a table, whether at home or in a restaurant, and use their own chopsticks and spoons to select food from several dishes placed on the table[12]. Chinese cuisine has an emphasis on color, form, and flavor; while Chinese culture highlights wholeness and family unity. Therefore, this harmony is compromised when many dishes that are usually made as a whole dish are divided into smaller portions. Chinese people enjoy the feeling of not being distant when they drink and eat together. In Chinese families or friends, the act of asking for chopsticks may be awkward or perceived as rude because the person making the request does not seem to enjoy sharing with others. Especially in Sichuan and Chongqing, the straightforward and bold character of Sichuan and Chongqing people creates a lively atmosphere at the dinner table. For example, hot pot is the most representative Sichuan and Chongqing specialties[19]. Regardless of the time and place, Chongqing residents tend to eat hotpot whenever they want. People are always huddling around the burner, whether it be in high-end hotpot towns, little hotpot restaurants, or street food vendors. Hot pot is usually accompanied by a prevalent drinking game known as the Thumb Fight. It has been popular nationwide for decades. The game requires participants to eat while drinking, shouting, and occasionally waving their hands up and down[20]. Consequently, many Chinese consumers may have difficulty immediately adopting the new behavior of using chopsticks and a separate dining system, given the huge contrast with traditional Chinese customs[13].

From an economic point of view, serving chopsticks and using a separate dining system impose an economic burden on both consumers and restaurants. The policy means that each consumer may need more than one pair of chopsticks and one bowl, which increases both the cost of equipment purchase and dishwashing for restaurants. In addition, the increase in productivity has brought about an abundance of food varieties and diversification of dishes, which require the one-person-one-course meal portioning system to have a sufficiently large venue, preparation time, and number of service personnel. Particularly in large banquets where the number of guests is large and the venue limited, implementing the one-person-one-course meal portioning system is close to impossible. The associated restaurant costs will eventually be passed on to the consumers. For middle- and low-end catering, long preparation times and high costs can be devastating, because small restaurants are characterized by high customer traffic and cheap prices[21]. If the above costs cannot be controlled, the blind implementation of a separate dining

system may lead to a threat in the survival of low-end catering.

Changing the public's weak awareness of serving chopsticks and the separated dining system is the most challenging. According to a study based on a questionnaire distributed via WeChat to the rural population, the greatest difficulty and challenges faced by the rural population during the epidemic was their lack of understanding of the significance of prevention and control measures[22]. A survey of 747 Chinese consumers found that COVID-19 has less effect on their eating habits than was anticipated. Only approximately one in ten respondents practiced healthier eating habits, whereas more than eight out of ten respondents said they had made no changes[23]. Another survey by the official media, Jiangsu News, found that 64,000 people in the province thought that using public chopsticks was a hassle, while fewer (57,000) said they were willing to attempt using them. It may be more hygienic to use serving chopsticks, but for consumers, eating is supposed to be relaxing. Thus, they do not want to be bothered by these little rules[24]. In addition, consumers' lack of easy access to serving chopsticks and a separate dining is also an important reason for weak awareness. In the market, no obvious difference exists between "serving chopsticks" and "private chopsticks." Moreover, the function of serving chopsticks is imperfect, which not only adds trouble to the meal but also easily causes problems such as misuse and mixing, resulting in less willingness of consumers to practice separate dining[25]. An interview with 62 Chinese consumers revealed that they often forget to use serving chopsticks if they are not provided and are embarrassed to ask for them in front of their peers. They called for restaurants to offer serving chopsticks[12]. Thus, easier access to serving chopsticks and additional publicity and promotion make it easier for the public to develop good habits.

This study also reveals several practical contributions on promoting the use of serving chopsticks and the implementation of separate dining. This study confirmed government behavior, the target industry population, and the implementation of the order for determining their intentions to use serving chopsticks and separate dining. The findings noted that the relationships among the variables could be translated into actions.

Governments should use various means to increase public willingness to accept the promotion of serving chopsticks and the implementation of separate dining. First, to publicize the serving chopsticks and separate dining, one must especially focus on its advantages through various channels (Social Platform: WeChat, Weibo, Douyin, Kuaishou, etc.). For example, the use of serving chopsticks and/or separate dining decreases the possibility of cross infections of germs and ensures that guests feel respected. Meanwhile, separate dining could help hold the quality of the nutrients consumed, facilitate diet control, reduce waste, regulate individual tastes, and facilitate international interaction and cooperation. Notably, the benefits of individual dining style (IDS) to prevent the spread of infectious diseases could lead to its wider adoption. However, the threat of COVID-19 may not prompt people to change their dining styles[26]. The public will accept the concept of serving chopsticks and separate dining by osmosis. Second, governments should develop many culturally rich and fun experiences of serving chopsticks and separate dining in conjunction with the fine Chinese traditional culture. Third, the government should

also consider formulating policies and regulations to promote the use of serving chopsticks and separate dining. In particular, from the national level, the government should strengthen the formulation of regulations related to public health[12].

The restaurant industry and unit canteens must take the lead in promoting serving chopsticks and separate dining. The interview analysis revealed that many Chinese consumers often forget to use serving chopsticks and forget to ask for them when not provided although they are aware of the advantages of serving chopsticks and separate dining. Additionally, restaurants are encouraged to provide serving chopsticks or separate dining as one of the core services when serving meals to avoid embarrassment. Moreover, choosing teenagers and children as the key target for the implementation of serving chopsticks and separate dining can achieve good results because they are less influenced by the traditional food culture and more likely to accept its concept.

The implementation of public chopsticks and spoons must be prioritized, and gradually implementing the meal-sharing system will be a better idea. Traditional eating habits are somewhat unlikely to disappear. Most Chinese will still use personal chopsticks to choose food from shared plates and are scarcely or not at all inclined to consider the individual meal[24].

## **5. Limitations**

In the later stages of the study, many interviews were not conducted face-to-face . In addition, most of the respondents were reluctant to accept video interviews, and only Tencent conference interviews could be conducted. Additionally, contacting the general public and catering Industry Practitioners was not easy. Accordingly, we choose experts with more than 10 years of local living experience as interview subjects. These factors may have some influence on this study. Nonetheless, some clues for the implementation of serving chopsticks and separate dining in China could be provided through the results of this research.

## **6. Conclusion**

The implementation of serving chopsticks and separate dining is not very satisfactory. The traditional food culture and eating habits are extremely deeply rooted to change. The implementation of chopsticks sharing will have an effect on the catering industry and consumers, such as generating additional cost of time and material and the risk of losing customers for restaurants. Public awareness of the value of introducing serving chopsticks and separate dining is weak, and the people think the proposed practice is troublesome or embarrassing. The above factors primarily explain why implementing serving chopsticks and separate dining is difficult. Therefore, this finding necessitates the mandatory government policies and measures, public education on serving chopsticks, creating a good atmosphere for serving chopsticks, the production and sale of recognizable chopsticks and reasonable separate dining design, as well as the initiative of the catering industry and unit canteens to assume the responsibility of chopsticks sharing.

## Declarations

### Ethics approval and consent to participate

The principle of informed consent was followed. The interview data were only used for this research and did not involve any purpose other than scientific research, and personal privacy including the real names of the interviewees, was guaranteed. Participants were volunteers, and they were ensured that the research data would be kept strictly confidential and presented anonymously; Furthermore, participants were allowed to withdraw at any time. The study was approved by the Ethics Committee of Chongqing Medical University (see Annex1), with ethics approval number 2021041. And all methods were performed in accordance with the relevant guidelines and regulations.

### Consent for publication

Not applicable.

### Availability of data and materials

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

### Competing interest

The authors declare no conflict of interest. Non-financial associations that may be relevant to the submitted manuscript. We have read and understood the policy on declaration of interests and declare that we have no competing interests.

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### Author's Contributions

K.W wrote the draft of this paper. Y.W and K.W contributed to the design, data analysis, data interpretation, and revision of the paper; K.W and H.Z and R.D. conducted an on-site investigation, database establishment and data entry; Y.W and K.W contributed to data analysis, data interpretation, and revision of the paper; H.Z., J.Y. and Y.Z. edited and provided critical comments on the entire manuscript. All authors contributed to the revision of the manuscript, read, and approved the submitted version.

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