

HEALTH ASPECT OF CHINESE CULINARY CULTURE

TRADITIONAL CHARACTERISTICS AND CURRENT ISSUES

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Abstract

Traditional Chinese cuisine, which is highly evaluated with respect of taste and techniques, is built based on a sound healthy philosophy and distinct dietary culture, with emphasis on the unity of human beings and nature. The traditional cuisine utilized food materials according to the physical status and seasons, which is still a valuable principle in the modern diet. According to relevant research, the nutrient retention in Chinese cooking is acceptable. However, following the rapid growth of domestic economy, the Chinese diet is in danger of losing its original merits, especially when eating out. The excessive desire for food enjoyment leads to a rapid increase in the prevalence of obesity and chronic disease. It is a critical point to review the characteristic of traditional Chinese cuisine and lead the trend to a healthy direction.

Key words: Chinese cuisine, dietary culture, health, nutrition

Food is the material basis of existence of human beings, and cuisine serves as the way of transform food materials to diet. The Chinese dietary culture is one of the most important components of Chinese culture, while the splendid cuisine culture is the core of the dietary culture.

The Chinese word of cuisine is peng-tiao or peng-ren, which can be dated from 3,000 years ago. The word peng means boiling, and ren means well cooked, and tiao means taste management. The modern definition of the word is the whole process of food handling, cooking and serving[1].

The basic pursuit of culinary art is preparing food of great organoleptic enjoyment. The ability of making food enjoyable represents the progress of human civilization, but the goal of food preparation can never deviate from the essential role of diet providing the food that benefits the health of human being.

1 Introduction of Chinese dietary culture

The formation of Chinese cuisine culture can be attributed to the vast land, the diversified landscape, the varied climate type, the agricultural pattern, the economic characteristics, the political hierarchy and

the cultural backgrounds[2]. It is proposed that Chinese people might be more passionate toward their food than people of other nations. There are sayings such like Common people take food as their primary need. Humans two basic desires exist in sex and food. For some Chinese people, food is a way of enjoying life, and to some degree the goal of life itself, rather than just a way of subsistence.

1.1 Intellectuals and dietary culture

In history, highly developed culinary technique has been encouraged by intellectuals as well as followers of religions. The Confucius made a well-known remark on food: the food is never too refined and well-prepared. This could be regarded as the basic attitude of the intellectuals toward food in ancient China. The scholarships enthusiastically promoted Chinese cuisine by writing countless poems, essays, and books about exquisite foods and menus. The Taoism advocated the theory of strengthening the body and achieving longevity by enjoying natural food, and appealed to the appreciation of the natural taste. The Buddhists, although forbidden from taking animal foods, developed a sophisticate technique of cooking delicious dishes with plant-origin food[3].

1.2 Social-economic orientation of dietary culture

The food craze of aristocrats and the rich people also posed substantial influence on the development of Chinese cuisine. Their preference of luxurious dietary styles led to three unreasonable character of Chinese cuisine: the use of unusual materials, the excess pursuit of delicious taste, and the complicated procedures in food preparation. The Chinese cuisine is thus classified into three levels in terms of social-economic status: imperial or royal cuisine, official cuisine, and common cuisine. The cooking in common families is rather simple and healthy, while the royal cuisine is extremely labor-consuming, sophisticate and extravagant.

1.3 Geographic and national characters of dietary culture

Chinese cuisine is a generalized concept, which includes numerous branches characterized by local geographic and national distinction. There is a common conclusion of taste preference in different areas in China: east-hot, west-sour, south-sweet, and north-salty. The people lives along the sea, rivers and lakes are skillful at cooking fish, while the people lives in grassland are more capable of handling beef and mutton.

There are 56 nationalities in China and the minority nationalities account for 8% of the total population. Many praised foods today derive from food of minority nationalities. However, most of these branches follow the basic philosophy of Chinese dietary culture with respect to nutrition and health.

2 Basic philosophies in ancient Chinese dietary and culinary culture

Chinese diet has been following the basic philosophy of the unity of human, food and nature. According to this philosophy, the food selection and handling must be in harmony with the physiological status of human, the change of season, and the condition of the environment.

Food and medicine is of the same origin, and food can serve as medicine. This deep-rooted belief of Chinese people can be dated from 2,500 years ago, when the ancient medical book declared that the most intelligent doctor could cure disease by modifying food intake even before the symptoms manifested. Most people believe that appropriate food combination may adjust the physiological balance in human body, thus prevent the development of chronic diseases and enhance body resistance to infectious diseases.

In ancient medical books, the health function of foods includes preventing diseases, strengthening the body, prolonging life span, keeping body slim, enhancing the auditory function, improving the eye-sight, improving skin quality, improving hair quality, enhancing intelligence, keeping mental peacefulness, and improving sex performance.

2.1 The medical property of food

As documented in Chinese herb medicine, food can be classified into five categories: cold, cool, balanced or even, warm and hot. In a meal, cold food must be balanced by hot food, and vice versa, in order to keep the metabolic homeostasis in human body. For example, crab is believed to be a very cold food, therefore it is always served with brown vinegar, ginger and yellow wine, which are supposed to be hot.

It is also believed that sweet, salty, sour, bitter, and hot, each interact with a major organ in the human body: sweetstomach; sourliver; bitterheart; saltykidney; hotlung. Every food, including spices and condiments, is characterized by its thermogenic properties and taste characters, which could be used to match the physical status of human body. In this way, it is possible to modify the property of a dish by making choices of spices and condiments.

2.2 Food choices for physiological status

In western nutrition, every person is suggested the same good and poor food choices. However, the Chinese diet culture emphasizes the importance of distinguishing the body type, i. e. the physiological status of the person, before making the right food choice for the person, including the cooking choice. [4]

Sun Simiao, a great physician in Tang dynasty, concluded that as a doctor, his primary work is to analyze the genesis of a disease in a certain patient. Once the cause of the disease is clear, first treat the patients with food. If the food therapy fails, then prescribe some herb medicine instead.

In culinary practice, dishes prepared with different materials, different cooking methods and different taste are recommended to people of different physical status. For example, a person of cold body should make a food choice of more hot food while avoid cold food, while a person of hot body should eat more cold food than hot food. Another example is that a person with respiratory infection should eat more food which can moisten the lung. For people under some medical condition, they must abstain from certain kinds of food, which may be especially harmful at this moment. For example, people who have carbuncles should never eat goose or shrimp, which may exacerbate the infection and endanger the life itself.

2.3 Food choices for seasons and climates

The physiological function is subtly influenced by season and climates, according to Chinese dietary culture. The spring is warm, the summer hot, the autumn cool and dry, and the winter cold. On the other hand, some parts in China are cold and dry, while some other parts are cold and wet in winter. The food must help people to accommodate the features of the seasons and the regions.

A famous ancient physician and dietitian Hu Sihui remarked in his book *Yinshanzhengyao*, which is evaluated as the first dietary handbook in China history: Among the staple food crops, the wheat is best for the spring, the mung bean and soy bean best for the summer, the sesame and the flax seed best for the autumn, while the millet best for the winter. As for the meat, it is recommended that mutton is taken in winter, while the duck is taken in summer. In the autumn, for example, honey, pear and Chinese almond is the best for preventing dryness of the body. It is suggested that the food materials that is flourish at the season are the best choices for the diet, such as the shoot of China toona trees and the shepherd's-purse for the spring, the balsam pear for the summer, the lotus root for the autumn, and the meat for the winter.

The cooking method should also changes with the turn of seasons. In winter, stew, simmer, quick boil in heated pots are most common ways, while in summer, cold dishes, boil, and quick stir fry are more reasonable. The flavoring materials should also adjust to the seasonal needs. For example, Ginger should not be used in August, while the leek is best for the spring[5]. Generally the dishes taste heavier than the dishes in summer. It is common sense that spicy food should be reduced from the table in the autumn to avoid dryness, while bitter food should be added to the table in summer to eliminate the excess heat.

2.4 Food choice and dietary pattern

Chinese diet is based on staple food , in contrast to assistant food , which includes vegetables, animal foods and any food other than staple food. The staple food is composed of cereals, starchy beans, soy beans and tubers. Chinese people believe that a perfect diet must be an appropriate combination of staple food and assistant food. The main principles of dietary pattern are[6]:

- A The amount of staple food must exceed the amount of assistant food.
- B The amount of vegetables must exceed the amount of animal food in assistant food.
- C The amount of warm food must exceed the amount of cold food.

In 2500 years ago, the Confucius remarked: The amount of meat must not exceed the amount of cereals. In the first medical book Huangdineijing, it is recorded the basic food principle as Life is based on five cereals, while the five fruits is helpful to digestion, the five meat is beneficial when moderately taken, the five vegetables must be fully taken to make the diet bulky [7].

The staple foods are normally taken without adding any salt and oil, such as rice, steaming bun and noodles, though hundreds of novel foods made of cereals have been developed in China. It is believed that the food without heavy taste will match best with the rich taste of the dishes. In this way, the diet is balanced with potassium and sodium, as well as fat and carbohydrates. By the appropriate combination of staple food and the assistant food, the diet may include diversified food materials without sacrificing the basic nutrient balance.

Most dishes in Chinese diet are cooked, including most vegetables. This reflects a basic belief that cook food is more digestible and safer than raw food. Another reason for cooked food is based on the constitution of Chinese people. The digestive function of Chinese people, who mostly live on cereals and other plant-origin food, does not adapt to large amount of cold and raw food, according to the theory of Chinese medicine. In a medical book composed a thousand years ago, Sun Simiao concluded that Too hot food hurt the stomach, while the cold food hurts the lungs. The temperature of food should be such that the lips will not be burnt and the teeth will not shiver. [8] There is a certain percentage of cold and raw food in Chinese diet, such as vegetables and meat products, but it must be balanced with more hot dishes.

3 Facts relevant to nutrition and health in traditional Chinese cuisine

3.1 Taste management and physiological balance

Taste management is the essence of Chinese cuisine [9]. The use of flavors and condiments must

comply with the goal of improving the health, highlighting the typical taste of the main materials, and suppress the undesirable taste in the materials.

Most spices and condiments are regarded as medical materials in traditional Chinese medicine, such as cinnamon, anise, fennel, clove, nutmeg, capsicum, and even the fermented soy curd, vinegar, salt, honey and oil. While managing the taste of foods, the proper physiological balance can be achieved. Cuisine is therefore critical in changing or preserving the health property of food.

For example, the people who have low blood pressure are recommended to dishes with more salt and more spices; people who have indigestion problems are recommended to dishes with more vinegar; and people who have constipation are suggested to take dishes with less spices and more sesame oil. Another example of taste management is stir fried balsam pear (bitter melon) with five tastes. Since the balsam pear is a very cold food, small amount of hot capsicum is added to neutralize it, and sugar and vinegar are used to make the bitter taste more acceptable and delicious. In contrast, the mutton stewed with ginger can enhance its heat-generating property, thus more helpful to the cold-body people in winter season.

Hu Sihui, a famous physician in a thousand year ago, pointed out that the desire for the food tastes should be in harmony and kept at a moderate level. Strong taste may lead to disease while light tastes benefit health. He warned that excessive salt is harmful to the bone while hot food is detrimental to the liver.

3.2 Handling of materials and nutritive value

In Chinese culinary practice, the food materials are treated with different methods according to the original attributes. The tender materials are stir-fried quickly to preserve the soft or crispy texture, while the tough materials are subjected to prolonged braising or simmering to make them soft. Some vegetables are taken raw or after quick blanching. This practice is favorable to the preservation and digestion of food nutrients.

The stir-fry treatment of green leafy vegetables contributes greatly to vegetable intake of Chinese people. Because of the heat treatment, it is not at all difficult to take more than 500 grams of vegetables in a day.

Some analysis data revealed that the nutrient preservation in Chinese cooking is satisfactory in most dishes. The stir-fried spinach retained 84% of its ascorbic acid and 87% of its carotene. The retention of ascorbic acid and carotene is 65%~85% and 80%-95%, respectively, for green leafy vegetables,

which is the most susceptible to nutrient loss in cooking[10]. The absorption of carotene is also greatly enhanced by the stir-fry treatment.

Before strong heating, the protein-rich materials are usually coated with a thin layer of starch slurry. The layer of starch absorbs most of the heat energy during gelatinization, thus protected the inner material from being overheated and from the genesis of carcinogenic substances. The retention of thiamin and riboflavin in stir-fried shredded pork meat is 90% and 80%, respectively[11]. On the other hand, the prolonged stew of pork meat can reduce the content of saturated fatty acid and cholesterol for 20%~50%[12].

In some area, there are special cooking methods for women who just have newborns. For example, in Guangdong province, lactating women are given soup made of sweet vinegar and pork feet. Mineral analysis discovered that the calcium content of the soup was as high as 178mg/100ml, which would benefit the lactating women greatly, as the traditional Chinese diet is rather low in calcium[13].

3.3 Food energy content of dishes

The energy density in traditional Chinese diet is moderate, with a relatively high percentage of energy coming from carbohydrates. As the Taoism, the Buddhism philosophy and the theory of traditional medicine advocated, people can only reach a perfect physiological balance with slightly restricted food energy. A scholar in Jin Dynasty pointed out that the more people eat, the more stuffed the heart is, and the shorter the life span will be[14]. Hu Sihui also remarked that too much food at supper would damage the health.

It is interesting to notice that the dishes in traditionally relatively developed regions are low in fat and energy while high in vegetables and aquatic product. In the less developed regions, the food is spicy or salty, and more oil is used in cooking. This represents the tendency that the local people value more of the energy density of the foods and the taste stimulation of dishes, which facilitates the intake of more staple food. In some areas, most vegetables were too cheap to appear at restaurants until 10 years ago. Many dishes in restaurant are prepared by firstly slight frying the materials in cooking oil before they are stir-fried, and before serving, another spoon of oil is added to the dishes to make it brighter. As a result, the energy density of the food in restaurant is much higher than the food prepared at home.

3.4 Unreasonable tendencies in traditional Chinese culinary culture

The Chinese culinary culture, to some extent, is strongly influenced by the living style of aristocrats and the rich. Especially in the previous 200 years, the culinary practice in restaurants cared less about

the health of the common people, either the nutrition value of the food. Some of the unreasonable tendencies of the professional culinary practice include the excess pursuit of precious materials, the exquisite taste, the novel and complicated preparation procedure, and the number of items[15].

To some extent, the art of cuisine among the professionals meant the skills of handling animal materials, especially the rare materials such as fin of sharks and birds nest. On the other hand, there advanced skills of making the common food into another taste by complex preparation procedures, such as making radish into something tastes like the birds nest. A well-known example is the preparation of dried aubergine in *Dream of the Red Mansions*, a most famous classic novel in China written in about 200 years ago[16]:

Fresh aubergine is peeled, diced, fried in chicken fat, stewed in chicken soup with bamboo shoot, mushrooms and dried soybean curd until the soup almost evaporated, then mixed with sesame oil and fermented rice oil, then served with stir-fried chicken dices.

It can be expected that such preparation process would cause serious nutrient loss and nutritional imbalance. However, the complicated process is regarded as a symbol of exquisiteness of food enjoyment by some people.

4 Current issues of Chinese cuisine

4.1 Integration of foreign food styles

Since the 1980s, especially the late 1990s, Chinese people have been presented with foods from all over the world. The Chinese cuisine gradually adopted some of the materials and flavors commonly used in western food, such as butter, margarines, curry, mayonnaise, milk and cheeses. Young women are interested in Japanese food, while young men are attracted by Korean style grills. Many young couples decide to equip their kitchen with an oven in order to make baked dishes and baking goods. The integration of multinational culinary styles will certainly bring new vitality to Chinese cuisine.

4.2 Attention to food nutrition

Following the improving of living standard, the frequency of eating out is greatly increased among Chinese people. It is suggested that the high-fat, high-energy food in restaurants would raised the prevalence of some chronic diseases, such as obesity, cardiovascular diseases and diabetes. The 2002 national nutrition and health survey revealed that among the prevalence of diabetes climbed to an astonishing rate of 6.4%, while the prevalence of overweight was as high as 30% in urban citizens [17].

Reasonably, there is a call of a regression to the traditional dietary principles. There are scholars who pointed out that nutritional balance should be the ultimate goal of modern cuisine. The sensory attributes of the cuisine is not only an aesthetic appeal to human beings, but also the way of stimulating the appetite and enables the intake of nutrients [1]. It is expected that the nutritional quality of food in Chinese cuisine should be paid more attention to by more consumers. The innovation of low-fat cooking methods is in urgent need, and the preference of plant-origin materials, especially food of special healthy values may become a new trend in high-standard restaurants.

4.3 Environment conscience

The new idea of environment protection has been accepted by more and more people in China, as a result of comprehensive public environment education. There is the tradition in Chinese to cook wild animals and precious species as rare enjoyments . However, an increasing number of people realize that taking wild animals as food is both uncivilized and unhealthy. They advocate the idea of harmony of human beings and nature.

For the sake of environment protection, in 2004, there were 230,000 cooks swore that they refuse to cook wild animals and materials from any endangered species, such as fin of the shark, foot of the bear, birds nest, giant salamander, some wild algae and herbs.

The waste of food in restaurant is another serious problem, which causes significant stress of food production in a country of limited arable land resources per capita like China. There should be rules or education precedures to limit the food waste and develop a new food culture of respecting food resources.

4.4 Improving of hygienic quality

The smoke generated during high-temperature cooking in Chinese kitchen has been a serious problem for the cooks health as well as for the air condition of cities. The oil smoke may be associated with the chronic obstructive pulmonary disease (COPD) and the decrease of immune function [18]. The ways of diminishing the oil smoke while preserve the enjoyability of Chinese food is an important task in the future. Establishing of more hygienic standards of cooking is in discussion, which is concerned by the professionals as well as the consumers.

4.5 Stadardization and convenience

There has long been the criticism that the Chinese culinary techniques are based on personal skills rather than well-defined standards. In order to ensure a stable quality of the food, the standardization of

cooking procedures is in urgent need.

On the other hand, the convenience of Chinese cooking is discussed in the light of the fast-rhythm modern society. Products that can simplify the cooking procedure or ready to eat may find vast market space in the future.

4.5 Food preparation for special purposes

It is suggested that the food for difference purposes should follow different styles in culinary practice. The food for offices use should be simple and convenient, food for schools high in nutrients, food for social occasions exquisite and rich, food for the young couples delicate and pretty, according to the experts [1].

In general, the future Chinese cuisine practice will maximum the retention of nutrients, ensure the health quality of food, while preserve the desirable color, flavor, taste, shape, texture of the food with the most appropriate cooking techniques, in order to best meet the consumers needs. Leading by the traditional food philosophy the modern management and the new techniques, it should be the perfect unison of food quality in terms of the sensory, aesthetic, health and even ecological values.

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