

Ethical Analysis of Betel Nut Culture and Related Policies in China

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Abstract: Betel nut has been consumed in China for thousands of years. Some regions have formed a deep betel nut culture with a strong social, economic and medical background. Betel nut chewing is also a risk factor for oral cancer development, and national and local governments have different policies on betel nut due to economic and cultural reasons. Oriented toward betel nut culture and related policies, we use the relevant theories of ethics to view betel nut from the perspectives of utilitarianism, informed consent, cultural identity, and autonomy, and propose an appropriate institutional response to betel nut.

1. Introduction

Betel nut is one of the most widely used psycho-stimulants in the world, with approximately 600- 700 million people consuming it worldwide. It ranks fourth in popularity after nicotine, alcohol and caffeine. Betel nut eaters are mainly located in Southeast Asia and China's Taiwan, Hainan and Hunan provinces, forming a betel nut culture with strong local characteristics. In Chinese traditional medicine, betel nut is regarded as the first of the four southern medicines (betel nut, sharp-leaf galangal fruit, villous amomum fruit and morinda officinalis). In 2003, the World Health Organization classified betel nut as a Class I carcinogen. In 2017, the Food and Drug Administration of China released a complete list of “carcinogens”, and betel nut was also classified as a Class I carcinogen. Betel nut culture and modern medicine have created an ethical conflict. The author found that there are more articles on scientific experiments and clinical studies on betel nut carcinogenesis, but few articles on betel nut culture, policy and its ethics. This paper intends to analyze betel nut culture and policy from an ethical perspective.

2. Overview of Chinese Betel Nut Culture

Betel nut has a long history of consumption in China, dating back to the Dynasty period. Yang Fu, who lived in Eastern Han Dynasty in his book *Yiwu Zhi* recorded that “eat with Fuli leaves, Gubi ash. When it goes down into the stomach, it can help with the digest. Thus, people start eating it”[1]. It also mentioned that “only the ones in Hainan, with its warm weather, is the best.” It is known that betel nut chewing in China dates back to Han Dynasty, and the inhabitants of Hainan Island in China were the earliest growers and eaters.

In ancient China, betel nut was mainly used to prevent and control diseases, especially in areas with high incidence of malaria. Liu Xun of Tang Dynasty wrote in *Records in Lingnan* that “Guangdong and Guangxi regions are hot, so betel nut is eaten to dispel malaria”. Li Shizhen from Ming Dynasty in the *Compendium of Materia Medica* pointed out: betel nut can “cure diarrhea and dysentery, treat heart and abdominal pain, constipation, asthma and shortness of breath, and malaria. [2]” He also listed a total of 26 prescriptions for betel nut, which are used to treat 26 conditions such as phlegm and saliva infestation. Traditional Chinese medicine affirms the functions and main treatment of betel nut as a medicinal herb: expelling worms, help digest, diuretic, clearing heat, and intercepting malaria. It is used for treatment of parasite accumulation and abdominal pain, stagnant diarrhea and dysentery, and edema and heat sensation.

In the records after Song Dynasty, betel nut consumption gradually from medicine to daily enjoyment of goods, and the influence is gradually expanding. In Song dynasty, Zhou Qufei in *Lingwai Dai Da* recorded, “people from Fujian to Sichuan and Guangdong, Xilu, are eating betel nut. Guests are not set tea, but betel nut as the etiquette.” It is clear that the region of betel nut consumption in Song Dynasty, has expanded from Hainan to the southeast and southwest of the mainland, and has become a common gift for guests. Zhou Qufei recorded that chewing betel nut “is extremely popular in Guangzhou.” “The lower- and middle-class people in Guangzhou spend more than a hundred a day on betel nut.” They even eat betel nut to the point of forgetting to eat: “no matter rich or poor, young or old, male or female, from morning to evening, they are only addicted to betel nut.” Because of the prevalence of betel nut, even foreigners living in Guangzhou are also addicted. Zhuangchuo from Song Dynasty in his book “*Ji Lei Bian*” recorded: “Guangzhou Persian women... make bamboo thin slices as the door, eat betel nut, spit on the ground like blood.” With the promotion of betel nut, betel nut in daily life has gradually been given more meaning, such as Qing Dynasty period, betel nut is necessary in the wedding of Chengmai County of Hainan. It was said that “marriage must choose family with high reputation, and betel nut.” “Bing means wife, Lang means husband. Bing Lang (betel nut) means the husband and wife treated each other with respect.”

Hunan, China is not the origin of betel nut, but it is one of the main areas of betel nut consumption in China. Especially Xiangtan, a city in Hunan, has a strong betel nut culture. It was only after Qing Dynasty that the betel nut custom in Xiangtan and Hunan was documented. The origin of betel nut chewing in Xiangtan is the most prevalent. The most documented reason is due to war and plague. It is said that the Qing soldiers in Xiangtan in the first year of Shunzhi massacre lasted more than ten days, the corpses all over the city, no less than 100,000. “There was an old monk to collect dead bodies. He chewed betel nut to avoid bad the filth” [3]. At first, people ate betel nut for medicinal purposes. As the plague passed, chewing betel nut became a daily habit. The local people have had a continuous demand for betel nut as food, betel nut industry was born. In Qing Dynasty, Xiangtan relied on the convenience of water transportation, its economic prosperity was at the top of Hunan Province, and it was called “the first strongest county in the world”. The betel nut became one of the bulk goods transferred to Xiangtan by Cantonese merchants in the middle and late Qing dynasty. Xiangtan betel nut industry took initial shape during the Qianlong period. [4] The method of making betel nut in Xiangtan continued to improve, turning it into a more sweet and more acceptable taste of “improved betel nut”. Now, Xiangtan is not only the region with the highest betel nut consumption rate, but also the largest betel nut secondary processing market in China.

Betel nut culture, as a characteristic food culture in some regions of China, has a strong social, economic and medical background. Betel nut was first used as a medicine. Chewing betel nut was mostly used for the function of prevention and treatment of diseases. In Ming and Qing Dynasties, for example, the custom of eating betel nut was more prevalent in areas with serious malaria, such as Yunnan and Guangdong [5]. However, betel nut has a certain degree of mental excitability and addiction. It is difficult to abandon it when it becomes a habit. In Taiwan, there is a saying that “a woman who chews black teeth is called a beautiful woman”, which also promotes the habit of betel nut chewing in the aesthetic standards of women.

The betel nut culture has a heritage of thousands of years. It is a traditional Chinese medicine herb. However, with the development of modern medicine, the health problems caused by the widespread consumption of betel nut have gradually emerged, and the cultural identity and health have created an ethical controversy.

3. The Epidemic Caused by Betel Nut Culture

Betel nut chewing is a custom in Taiwan, Hainan and other places since ancient times. Ancient literature has betel nut addictive records, such as “after eating a long time, you cannot be without it, otherwise the mouth and tongue will be tasteless”, etc., but we did not see records that the betel nut

causes oral mucosal disease and oral cancer. This may be due to the fact that most of the betel nut chewing habits in ancient times were in the malaria regions of the south. Many studies have shown that the life expectancy in these regions in ancient times was no more than 40 years. The years of betel nut consumption were shorter. The effects of other diseases were much greater than the potential risks associated with betel nut chewing.

In modern epidemiological studies, the proportion of betel nut chewing in Hainan reached 38.42%, with 50.36% in the 30-40 age group [6]. The prevalence of betel nut consumption in local areas of Hunan such as Xiangtan was as high as 64.5%-82.7% [7]. In the ranking of males suffering from cancer in 2017 and 2018 published by the Cancer Prevention Office of Hunan Province after the census, oral cancer was the eighth and grew to the sixth in 2020. From 2009 to 2015, the composition ratio of oral cancer incidence and death composition ratio of Hunan residents were 2.09% and 1.22%, which was significantly higher than the national oral cancer incidence composition ratio of 1.22% and death composition ratio of 0.87%. The incidence composition was higher than the national and worldwide averages. The oral cancer death composition, although higher than the national level, was lower than the international level [8]. According to Hu Yina [9], who summarized the results of existing studies and applied Meta-analysis, the same conclusion was reached that betel nut chewing is a risk factor for oral cancer.

Some scholars believe that it is more accurate and scientifically sound to use the name “betel nut chewing block” instead of “betel nut” in medical research because other added ingredients are also directly and importantly related to the development of oral cancer. The way betel nut chewing blocks are eaten varies greatly from place to place. About 33.0% of people in India consume betel nut, which is the largest betel nut consuming population in the world. India also has the highest incidence of oral cancer in the world [10]. India consumes mainly the ripe kernels and usually chews them together with tobacco. Taiwan and Hainan provinces in China consume mainly the fresh shells and kernels. In Hunan Province, a drying and flavoring process has been developed to eat the processed “fibrous shell of the dried betel nut”. The consumption of betel nut abroad is dominated by betel nut kernels, leading to the fact that most of the current foreign studies focus on betel nut kernels rather than betel nut shells. Thus, it becomes difficult to determine the relationship between betel nut shells and oral diseases based on foreign literature. However, in terms of incidence, the prevalence of oral cancer in Hunan is significantly lower compared to that in India [11].

Different chewing habits and composition have a significant impact on morbidity. Studies have found that the incidence of oral cancer in betel nut chewing people with smoking and drinking habits is 123 times that of the normal population [12]. Yen [13] showed that the risk of oral cancer is positively correlated with the daily consumption of areca nuts and the number of years of areca consumption. Du Yongxiu et al. [14] showed that chewing dried areca nuts has stronger pathogenicity and carcinogenicity than chewing fresh areca nuts. Excessive harmful ingredients in dried areca nuts play an important synergistic role in the occurrence and carcinogenesis of oral mucosal diseases. The study by Xiao Fuyuan et al [15] [16], on the other hand, concluded that the consumption of processed dried betel nut in Hunan region has some limitations in terms of its harmful effects on humans, and further studies are needed. As can be seen, although mainstream studies have concluded that betel nut is an independent risk factor for oral cancer, the effects of different chewing habits and different betel nut components on oral cancer development are difficult to give an accurate assessment.

4. Policy and Ethical Analysis Related to Betel Nut

Betel nut consumption is a bioethical issue worth exploring because it is a culturally acceptable stimulant with some risky medical consequences. National and different local governments have different attitudes toward betel nut. We take an ethical approach to betel nut from the perspectives of utilitarianism, informed consent, cultural identity and health, and autonomy.

In 1996, Xiamen government formulated the *Regulations on the Prohibition of the Production,*

Sale and Consumption of Betel Nut in Xiamen based on the principle of “safeguarding people's health, maintaining a clean and hygienic cityscape, and creating a good production, living and investment environment”, which stipulates that the production, consumption and sale of betel nut are prohibited in Xiamen, or else a fine will be imposed. Currently, no other region in China has introduced similar restrictive regulations except for Xiamen. Xiamen is not the origin of betel nut, nor is it the main processing place of betel nut. It does not have a strong betel nut culture, nor does it have a larger scale betel nut industry. The ban on betel nut hardly affects the citizens' autonomy and right to live. As a tourist city, the ban on betel nut can bring about an improvement in the city's appearance and promote the city's development, which is beneficial to the vast majority of people from a utilitarian point of view.

However, in some provinces and cities, betel nut and its products are supported by some local policies as one of their major financial sources and livelihood crops. Hunan Provincial Administration of Market Supervision website published *Response to the Fourth Session of the Thirteenth Provincial People's Congress No. 1247*. The document mentions that Hunan is currently seeking to introduce provincial government regulations to clearly establish a provincial administrative license for the production of betel nut products. At the same time, it will further strive to pass local legislation to designate betel nut as a local specialty product. The Betel Nut Association of Hainan Province posted *Hainan Province issued relevant measures to vigorously support the development of betel nut industry* in the policy and regulations column of its website on August 27, 2021. In the article, the text mentioned: “We should carry out new tests, and scientifically response to untrue rumors. About the rumors that eating betel nut is harmful, there are a variety of statements on the network and the media. There are many different opinions, but there has not been an authoritative statement. Examples to the contrary are all around us. As we all know, Hainan Island is the 'world longevity island'. Wanning city, where the most betel nut is planted, is also the 'world longevity township'. It has been a long time for Hainan people, especially Wanning people to chew betel nut. However, we rarely heard of serious illness because of chewing betel nut. Instead, most of the old people who live long have the habit of chewing betel nut for many years.” In this way, it responds to the theory that betel nut is harmful to human health. It can be seen that the attitude of some local governments and institutions towards betel nut is opposite to the attitude of the medical profession towards betel nut.

Some local governments and institutions that support the betel nut industry are mostly from the economic and livelihood perspectives. The response made by the Betel Nut Association of Hainan Province is only from the perspective of common sense and not supported by data. According to Dong Hua [17] and other studies, the incidence rate of oral cancer and pharyngeal cancer in Hainan Province in 2016 was 8.13/100,000, ranking 10th in the incidence rate of malignant tumors. The mortality rate was 3.39/100,000, ranking 8th in the mortality rate of malignant tumors, which is higher than the national average. *China Betel Nut Industry Analysis Report 2021 - Market Operation Trend and Development Prospect Research* released by Insight and Info shows that as of December 2019, the annual output value of the national betel nut industry reached 40 billion yuan, of which Hunan accounts for three-quarters, with an annual output value of 30 billion yuan. The betel nut market is growing at an annual rate of 30%. According to Hainan Daily in 2020, Hainan was the main production area of betel nut, with a cultivation area of over 1.78 million mu, which was related to the economic income of 2.3 million farmers in Hainan Province, a group that accounts for 41.37% of the province's agricultural population. Moreover, betel nut has a history of thousands of years in Hainan. There is a strong betel nut culture. A simple ban on betel nut cultivation and production and processing would lead to the loss of livelihood for millions of workers and seriously violate the right to survival of these farmers and the autonomy of local residents. For a consumer product like betel nut, which has cultural affiliation and economic value, but also has health risks, rashly “destroying” it may lead to the loss of a culture and the reduction of people's autonomy and right to live. “Restriction” may be an economically and ethically acceptable approach.

At the national level, it is temporarily in a neutral perspective. The central government introduced some measures with little impact. 2019, the National Health Commission mentioned in the *Action Plan for Healthy Mouth (2019-2025)* that it should focus on promoting the dangers of long-term betel nut chewing on oral health in areas with betel nut chewing habits. In 2020, the State Administration of Market Supervision removed the category of “edible betel nut” from the Food Production License Catalogue. However, “betel nut” was still included in the Pharmacopoeia of the People's Republic of China as a Chinese herbal medicine. On September 17, 2021, the State Administration of Radio, Film and Television (SARFT) issued the Notice of the General Office of the State Administration of Radio and Television (SARFT) on stopping the promotion and marketing of betel nut and its products through radio, TV and Internet audio-visual programs, which decided to stop the promotion and marketing of betel nut and its products through radio, TV and Internet audio-visual programs from that day.

It can be seen that, due to economic and cultural factors, although betel nut is considered as an independent risk factor for oral cancer by the mainstream, there is still debate in the medical community about the harm caused by different processing methods and consumption methods, and other reasons, the country's attitude towards areca nut is ambiguous for the time being. From the perspective of utilitarianism, according to the prediction model established by Hu Yanjia et al., the cumulative financial burden of oral cancer caused by betel nut in Hunan province in 2016 was 4.93 billion yuan, which was predicted to be 12.14 billion yuan in 2020 and 64 billion yuan in 2030 [18]. It can be seen that although the current economic benefits brought by betel nut are greater than the economic burden caused by disease, in the long term, the growth rate of disease burden caused by betel nut exceeds the growth rate of income brought by trade. From the perspective of bioethics, it should not be simply compared with economic figures, because the value of human life should be higher than economic value.

In terms of informed consent, many research studies have found that most betel nut consumers are not fully aware of the specific harm that betel nut can cause to their bodies. At the same time, some merchants have concocted concepts such as “healthy betel nut”, and “no harm to the oral cavity” to promote the herbal effects of betel nut and exaggerate its health benefits. They try to tell people that betel nut is a healthy, and sugar-free product. What's worse, there are even products such as betel nut with wolfberry and betel nut with xylitol. Indigenous people are more likely to be addicted to betel nut due to lifestyle, work and cultural factors. Poor and uneducated betel nut sellers, youth and pregnant women are likewise at greater risk [19]. As a vulnerable group in society, they need the protection of the government to look after their well-being and health interests. They need to be informed of the harmful effects associated with betel nut in order to achieve informed consent: people have the right to be informed of the harmful health effects of betel nut before they start using it. Users may be motivated and motivated to quit once they become aware of the effects.

Regarding cultural identity, some groups consider betel nut chewing as part of the lifestyle of people, especially local indigenous people. Examples include areas such as Xiangtan and Hainan. In the Xiangtan area of Hunan, there is a tradition of “Crossing arms, walking on the street, chewing betel nut, making friends.” “To welcome guests, betel nut and cigarettes are necessary.” “To celebrate Spring Festival, come in and eat betel nut.” In the local culture, betel nut is seen as a gift during Chinese New Year and festivals. Some scholars believe that the betel nut industry profoundly constructs the urban symbols belonging to Xiangtan, the betel nut city, and enhances the regional identity of Xiangtan people [2]. Therefore, we need to compare health and cultural identity. Commodities are hierarchical and not all of them are equal. We can consider life and health as the basic commodities on which other commodities (including cultural commodities) depend. Although betel nut has become part of the local culture, it cannot be considered unquestionably beneficial, and cultural practices can change as people become more educated and health conscious. Considering the medical consequences, it is reasonable to assume that reducing the incidence of betel nut chewing is more conducive to the preservation of human dignity and rights.

Given these bioethical issues, we might consider an appropriate institutional response to betel nut consumption. As we have seen in the history of tobacco and alcohol, particular government agencies or officials may not be entirely at fault or entirely right because of the complex forces competing for self-interest. In such cases, we need to be aware that government agencies or decision makers may tend to ignore “ethical blind spots” and refuse to act objectively based on long-term predictive models, instead seeking some short-term benefit for themselves. In behavioral ethics, we can observe that humans often exhibit irrational behavior and unwittingly violate their own moral standards. Time and again, we witness the phenomenon of moral blindness, as when certain factions continue to strictly deny that smoking is linked to lung cancer or that alcohol and drug abuse may be harmful to health.

Time-tested ways to curb similar dependencies (such as smoking, alcohol and drug abuse) include high taxes, smuggling prevention, health hazard labelling, pregnancy warnings, age limits for consumers, advertising bans, restrictions on use in public places and increased health education and media campaigns [20]. In order to reduce the consumption rate of betel nut, we can develop strategies to promote oral hygiene in addition to education and health promotion programs [21]. We can also learn from Taipei's example of fining people who spit betel nut in public. According to another study, one effective approach is to tax the companies that make the most profits from the industry [22]. Betel nut has similar properties to tobacco in terms of addictiveness, potential cancer risk, and cash crop. Could the government categorize betel nut as state-managed like tobacco and charge heavy taxes and apply health hazard labels? The government is in a good position to implement these policies because betel nut is not currently produced on a mega-industrial scale like tobacco or alcohol.

Most people in the West have never heard of betel nut, so they don't have policies and initiatives. However, we, who are at risk, can't be silent about it. Under the policy background of Healthy China, we need to clarify the nature of betel nut: is it food or medicine? Hunan government is pushing to list betel nut as “food and medicine” in an effort to avoid consumption controls that might see it as a medicine. At present, although betel nut has been removed from the food list in China, only its promotional measures have been restricted and no direct consumption restrictions have been made on it. Therefore, we need to clarify its nature and strengthen control, and in the absence of a background of health policies that can be learned from Western developed countries, we need to explore the existence and development of the betel nut industry in line with our ethics and morality.

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