

An analysis of the situation and practices of the Chinese Dental Industry through an interview with a local dentist

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ABSTRACT :

BACKGROUND: *Chinese citizens have demonstrated increasing awareness towards oral health in recent decades. This leads to greater demand for dental services and potential shortages of dental supplies. Compared to developed countries, there is still a huge potential for the Chinese Dental Industry. Detailed situation and practices of Chinese Dental Industry is not clear yet.*

METHODS : *An online interview through WeChat was conducted with my cousin, who has been working as a professional local dentist in a private hospital in Shanghai, China for five years to illustrate the general picture of the Chinese Dental Industry. Questions from multiple dimensions were asked regarding her occupation and practice, including issues before, during, and after she diagnoses her patients, her previous experience related to medical field, and her own reflections towards the occupation. After her response was collected, analysis including graphs and tables was conducted.*

RESULTS : *Common dental problems for people with more dental concerns (age 8-18, and greater than 45) varied. In addition, even for those who were diagnosed with similar dental problems, the causes of their problems might be different, so the treatments they received were personalized. From an occupational perspective, occupational stress and salaries are the biggest issues faced by dentists, even for those who have high qualifications.*

CONCLUSIONS : *This research analyzes the status of Chinese Dental Industry and the problems it faces. Yet it still leaves space for further improvements. For instance, more comprehensive sets of information will be available if expanding on the number of dentists interviewed. In addition, future researches could compare the practices among public and private clinics since they are both important parts of Chinese Dental Industry together.*

KEYWORDS : *Chinese Dental Industry, Dental Caries, Tooth loss, Occupational Stress, Public Health*

Introduction

During recent decades, Chinese citizens have become more aware of the importance of oral health. According to the Chinese Dental Industry Report, 2019-2025, 60.1 percent of residents have basic knowledge about oral health, and more than 40 percent of kids adopt the habit of visiting their dentist regularly[1].

When the awareness increases, the demand for dental services increases as well, which might lead to shortages in dentist supply. It has been estimated that by the end of 2018, there were 150 dentists on average per million people in China[2]. Yet in United States, there were about 61 active dentists per 100,000 citizens by the end of 2017. Hence, the gap with other developed countries is still huge, indicating that the Chinese market has a great potential.

The majority of studies in this field have focused on the analysis from a purely quantitative (statistical) level. However, some variables, such as people's own reflection, can not be simply measured by statistics. In order to fully understand the status quo of the industry, it would be better to supplement existing research with a qualitative analysis with the help of the interview.

Methods

The interview with Sally, my cousin, was divided into two sections, each lasting one hour. Before it started, she was informed of the purpose of the interview, which was for a Public health research study regarding Chinese Dental practices.

In the first section, questions based on patient's dental problems, diagnoses, and treatments were being asked, which included the following:

- 1)How many patients come to your clinic on an average day?
- 2)What are some common age groups of patients that you deal with?
- 3)What are the most prevalent presenting problems that these patients present with? What are their respective diagnoses/treatment?
- 4)What are the main causes for the problems mentioned in question (3)?

The second section focused more on the qualifications, concerns, and her own reflection towards the dentistry occupation. Questions included:

- 5)What is the education that you received to help you reach the current position?
- 6)What are some of biggest concerns with Chinese dentists? Are these different from other countries?
- 7)What are your own thoughts about this occupation?
- 8)Are there any other interesting issues about your patients/ your job as a dentist that you can share with me?

Outcomes

Patients

Most dentists in China work four days a week from 9AM to 5PM. It was reported that on average, an active dentist is responsible for 20 patients during each day of work.

The age for patients who come to my cousin ranges from 2 to 80. These patients can be divided into four groups by age: 2 to 11, 12 to 19, 20 to 64, and 65 or older. Out of 80 patients per week, the estimated percentage from each group shown below:

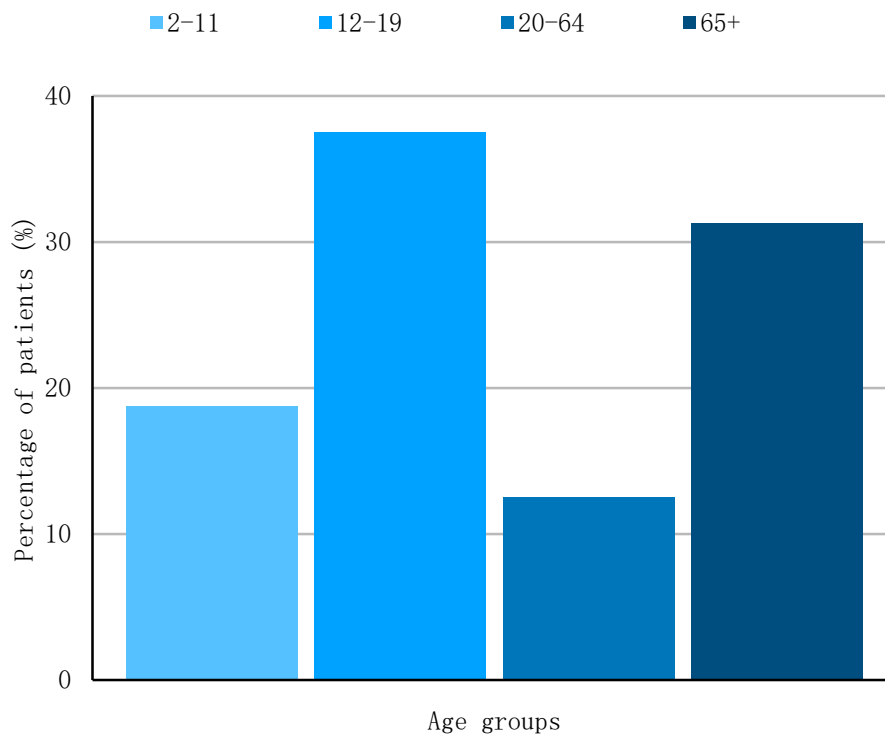


Figure 1: Percentage of patients in different age groups the dentist meets per weekday

From the chart, it is obvious that there are two other major age groups that demand dental services are from 12 to 19 years old, or greater than 65.

Dental problems and diagnoses

Dental problems patients come up with vary by age. The following table demonstrate several common illnesses reported (along with ICD 10 code) that are associated with ages.

Age \ Issues	Common dental problems	ICD-10 code
2 to 11	Tooth Decay (Dental Caries)	K02.9
12 to 19	Tooth Decay (Dental Caries) Tooth misplaced (Crooked teeth)	K02.9 K00.2
20 to 64	Tooth loss	K08
65+	Tooth loss Oral Cancer	K08 C04

Table1: Common dental problems for all age groups

From the above table, children and teenagers in China show great tendency to have tooth decay. In addition to tooth caries, Chinese adolescents tend to suffer from tooth misplacement after their permanent teeth grow.

For adults and the elderly, the main dental issue is Tooth loss, including partial and complete loss. Oral cancer usually happens among those above 65 years of age.

It is interesting to compare these findings to those in other countries. According to the National Institute of Dental and Craniofacial Research, in the United States, for example, 42% of children from 2 to 11, and 59% of adolescents from 12 to 19 have dental decay in their primary or permanent teeth – this is a high prevalence; For adults, those from 20 to 64 have an average of 24.92 remaining teeth, and those greater than 65 have an average of 18.07. [5]

Treatments

There are different methods to treat these dental problems. The following table lists the most commonly used treatments in China.

Table 2: Treatments for common dental problems

Dental problems	Common treatments
Dental Caries	Fluoridizing (Mild cases) Fillings (Moderate cases) Root canals (Severe cases) Tooth pull-out (Most severe case)
Crooked Teeth	Orthodontics Tooth pull-out
Tooth loss	Dental Implants (Partial missing) Traditional Denture (Complete missing)
Oral cancer	Surgery Radiation/Chemotherapy Traditional Chinese Medicine

From Table 2, it is obvious to see how treatments might vary in accordance with the severity of the illness, especially for dental caries. Nevertheless, the treatment most suitable and commonly used for kids is fluoridation. In addition, it is interesting to discover a combination of Traditional Chinese Medicine (TCM) and western therapies in treating the oral cancer.

Causes

Among patients around similar ages that are diagnosed with the same dental issues, the causes behind seem to vary from person to person. During the interview, Sally listed several causes for her patients diagnosed with oral cancer and estimated the percentage for each cause, based on 90 cases in her clinic.

Table 3: Causes for oral cancer*

Causes	Number of cases (N=90)	Percentage
Cigarette Smoking (>5 yrs)	70	77.8%
Excessive Alcohol consumption	57	63.3%

Family history of cancer	28	8.89%
Exposure to Human Papillomavirus (HPV)	10	11.1%
Betel Quid chewing	40	44.4%

*Since each patients might have more than one causes for oral cancer, the number of cases add up more than 90.

Long term cigarette smoking is the most prevalent cause of oral cancer, as reflected by the fact that 70 out of 90 cases reported more than 5 years of smoking before they were diagnosed. Other factors, such as excessive alcohol consumption, HPV, and inheritance factors, also play a role in the formation of oral cancer. Furthermore, it was unexpected to find out the correlation between betel quid chewing and oral cancer. Betel quid chewing, which consists of betel nut, spices, and lime, is a popular practice in certain parts of Asia. Research shows that the risk of developing oral cancer is increased with more betel quid chewed per day. [3]

Occupation-related issues

Apart from common dental illnesses and its epidemiology, another purpose of this interview was to investigate the occupational situation of dentists in China, including their educational background, stress, salary etc.

To start with, the salary for Chinese dentists has a wide range. The median salary is about 65,000 RMB per month. It was being mentioned in the interview that the salary dentists received is closely related to their experience level: For those who have worked less than 2 years, their average salary will be around 40,000 RMB per month, while more experienced, professional dentists can earn up to 100,000 RMB per month. Compared to other occupations, salary for dentists is at a decent level in China. However, when comparing these figures to those of U.S. Dentists whose median income is 12,654 dollars per month (roughly 90,000 RMB), huge gap still exists. [4]

Moving on, occupational stress is a common issue among dentists. The stress mainly stems from competition between dentists, the large number of patients per person per day, and certain physical problems related to the occupation. Dentists often suffer from long-term back and neck pain, visual fatigue due to long hours of work in a fixed posture. These problems indicate the defective design in the work place and the work load. Professional counseling for stress and personal problems, and activities such as meditation and yoga should be popularized to avoid stress and these physical problems. [1]

Lastly, qualifications for dentists in China is identical among different cities. A bachelor or above degree with a medical major is required; After graduation, they need to pass the National Dental Licensure Exam and fulfill the probation period for two years before becoming an official dentist.

Conclusion

Throughout this study, multiple layers of Chinese Dental Industry were being discovered, including the common age groups of patients, several dental problems and their respective causes and treatments, and some occupation-related issues among dentists. For patients, two main age groups that frequently visit their dentists are those between 12 to 19 years old and those greater than 65 years old; Among all dental problems, most young teenagers in China suffer from Dental Caries and Crooked teeth, while tooth loss, or even oral cancer, is considered to be a problem for most adults and the elderly. Since causes for the same dental problem, for instance oral cancer, tend to vary, treatments vary from patients to patients as well, from surgeries to radiation to TCM. Lastly, the treatment of Chinese dentists is still not comparable to dentists abroad, and occupational stress is often reported among them, indicating the need for more attention and better enforcement of related regulations by the domestic government.

This study was carried out through the form of interview. An authentic picture of the Dental Industry could be portrayed by the words of those who are currently working in this field, but an interview can sometimes be too subjective. Since this interview was conducted with only one dentist who is working in a private hospital in Shanghai, dentists from more places should be interviewed in the future to generalize the status quo and practices of Chinese Dental Industry better. For future research directions, it would be worthwhile if a comparison between public and private dental clinics and the dentists who work there can be conducted.

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