

Proposal of a dietary program

With the increasing cost in receiving modern medical treatment, and lack of attention on preventative treatments, our group is pleased to present the following project: The Personal Diet Doctor.

Introduction

Traditional Chinese Medicine (TCM) has been practiced for years, and served as the basis for health care in China for much of its history. Western-inspired evidence-based medicine made its way to China beginning in the 19th Century. When the Communist Party took over in 1949, western health care was nationalized, a national "patriotic health campaign" attempted to address basic health and hygiene education, and basic primary care was dispatched to rural areas through barefoot doctors and other state-sponsored programs. Urban health care was also streamlined.

In 2005, Chinese government launched the New Rural Co-operative Medical Care System (NRCMCS) in an overhaul of the healthcare system, particularly intended to make it more affordable for the rural poor. Under the NRCMCS, some 800 million rural residents gained basic, tiered medical coverage, with the central and provincial governments covering between 30-80% of regular medical expenses. Availability of medical insurance has increased in urban areas as well. By 2011 more than 95% of the total population of China had basic health insurance. However, most of the hospital under the Co-operative Medical Care System provide western-inspired evidence-based medicine only, and the Traditional Chinese Medicine is almost abandoned. Thus, in order to enjoy the medical insurance to make medical treatment affordable, citizens are now using western medicine only. New generation who never benefit from the use of Traditional Chinese Medicine or even barely heard of it start to doubt its effectiveness. However, the complete reliance on Modern Western Medicine system and nonuse of Traditional Chinese Medicine has caused worrying phenomenon in urban areas.

Statement of Problem

Despite the introduction of western style medical facilities and the implementation of a National Essential Drug Policy, China has several emerging public health problems, which include a progressing diabetes epidemic, problems as a result of pollution, and the increase in obesity among the population. Part of the reason is that western style medical systems put their primary focus on curing diseases when patients are affected instead of preventing the diseases from happening.

Certain medical concerns mentioned above such as diabetes and obesity are actually preventable even not curable. Preventive healthcare consists of measures taken for disease prevention, as opposed to disease treatment. Just as health encompasses a

variety of physical and mental states, so do disease and disability, which are affected by environmental factors, genetic predisposition, disease agents, and lifestyle choices. Health, disease, and disability are dynamic processes which begin before individuals realize they are affected.

Focusing too much on curing instead of preventing, western styled medicine left millions of people die of preventable deaths each year. A 2004 study showed that about half of all deaths in the United States in 2000 were due to preventable behaviors and exposures. Leading causes included cardiovascular disease, chronic respiratory disease, unintentional injuries, diabetes, and certain infectious diseases. This same study estimates that 400,000 people die each year in the United States due to **poor diet** and a sedentary lifestyle.

Another issue occurred along with the over-concentration of curing instead of preventing is the increasing cost of medical care. Different from the majority of industries in the world, health care industry encourages higher prices with increasing level of technology (at least in current stage). The life expectancy at birth in China has grew from 43 in 1960 to 76 in 2014, thanks to the development of medical technology. Simultaneously, the resources and cost people spent in medical is also increasing. The reason behind is simple: because life is priceless. People are willing to spend millions to save the life of their families.

Also, Chinese government focus on health care as both a social priority (as seen in a 2009 health-care reform) and a strategic one (in the 12th five-year plan's impact on the biomedical industry). Health-care expenditures have more than doubled—from \$156 billion in 2006 to \$357 billion in 2011— inching closer to 5 percent of the country's GDP. In curing the same diseases, people are spending more money. Take diabetes for instance. Before the invention of insulin, the only way that people can treat diabetes is the hunger treatment. Patients prolonged their lives by significantly reducing their food intake. Insulin improved patients' life expectancies greatly, but it also increased patients' cost on treating the disease. For all current chronic diseases which we cannot find an effective cure, patients are extending their lives with the help of technology regardless of the cost. However, the development of technology served like a license to people, approving them for unhealthy life-style, because patients think that those diseases can be controlled after infection. However, those diseases, including the diabetes can actually be prevented before head, which is a concept that has been too underestimated in modern western medicine.

In all, unnecessary deaths and costs are caused due to the lack of attention modern medical system has on preventive treatment of diseases, and our group tend to search for a solution is traditional Chinese dietary therapy.

Proposed Solution

Our group provide a service called personal diet doctor, an individualized dietary therapy program. This program aim to help consumers customize their own diets with a large

amount of classified and well tested recipes. We also intend to deliver the ingredients needed by the recipes to our consumers through an App.

The program is based on the dietary therapy in Chinese medicine which studies how to treat diseases as well as how to prevent them using different diets under the guidance of Chinese medicine theories. Prevention takes an important part in Traditional Chinese Medicine (TCM). According to TCM, the fundamental reasons of senilism and diseases of body lie in our body itself, and the nurturing of food plays a major role in prevention and protection for our human body. In fact, various kinds of food provide different sorts of nutrition, so rational arrangement of diet secures abundant nutrition so that organs work well with abundant energy and blood.

It has been proved by modern studies that humans will suffer from diseases once their bodies lack some nutrition. For example, lack of protein or carbohydrate causes liver dysfunction, lack of vitamin causes night blindness, beriberi, stomatitis, scurvy or chondropathy. Besides, lack of micro elements also causes diseases; for example, lack of calcium causes rickets, lack of iodine causes thyroid enlargement, lack of iron causes anemia and lack of zinc or molybdenum causes mal-development of body. By overall collaboration of nutrition or targeted increase of some certain sorts of nutrition in food, some diseases can be prevented and cured.

It has been proved by modern studies that the functions of disease prevention of food proposed by Chinese medicine have their scientific support, and are receiving more and more attention from the international medical community.

Historic, enriched, safe and effective, food therapy of Chinese medicine prevents diseases in daily diet. As a unique part of Chinese nutriology, it is widely popular among people. Despite differences between the theoretical systems of food therapy of Chinese medicine and the modern clinic nutriology, they work with each other well with their own edges, and are of vital significance for the improvement of clinic effect. In this study, the researching team will be committed to the knowledge system fo food therapy of Chinese medicine, and popularize the system among the public in a modern way which is easy to understand, expecting to benefit the people with the precious researching result of nutriology of Chinese medicine.

Methods

1. Collection of existing knowledge

Since our product is based on the Nutriology of traditional Chinese Medicine, our first step is to extract useful information from the existing rich experience in Chinese Medicine. we will first collect and analyze medical books and folk prescriptions from ancient China. Based on different prescriptions, we will compare them with modern evidence-based research to select those which proven effective as preventative medicines.

2. Modernization

The recipes we collected were from ancient Chinese medical books, and the translated version of folk prescriptions. Thus, it is necessary for us to modernize the language of those recipes. Also, some of the materials in the recipe may no longer be available in current society. We need to replace those ingredients with modern plants. And, if some are not replaceable, they should then be removed.

3. Classification

After the above primary process, we may now begin to classify them. According to our primary research, a person's diet should vary for different seasons, regions, age groups, and diseases.

The recipes we collected are labeled with the twenty-four solar terms. However, those were terms used as a guidance of agricultural activities, not for the use of dietary therapy. Therefore, we would pair those solar terms with correspondent climatic seasons: spring, summer, autumn, and winter. Also, the effect of humidity is taken into consideration. All four seasons were divided into two dampness degrees.

Another way we label those recipes is through their geographical features. Different regions in China may have very different climates and dietary habits. It is necessary for us to take that into consideration. However, since different recipes were already divided into mainly eight different cuisines: Anhui, Cantonese, Fujian, Hunan, Jiangsu, Shandong, Sichuan, and Zhejiang cuisines. Those eight food cuisines, as an important part of Chinese culture, are originated from the diverse regions of China. After thousands of years of development, this classification of cuisines already takes regional effects into account. Therefore, our regional classification will just follow the eight cuisines.

For different age groups, people at different physiological status should have corresponding recipes. Since the mathematical model our group used as the fundamental primary research divides age groups into: teenagers(9-18), pre-adults(19-24), adults(25-44), middle-aged(45-59) and the elderly(60 and above), this will be how we classify recipes for age groups.

People who are suffering from chronic diseases such as diabetes should have corresponding diet adjustments. Also, people's diet should have preventative food for popular influenza. Due to these two aspects, our group will classify recipes into different chronic and epidemic diseases.

4. Custom-oriented Working

The audience of our project, or our potential customers, demand more just healthy recipes. In order to boost consumers' willingness in choosing healthier diets, we need to give our recipes more flavors while make sure the nutrition intake is within the recommendation intake. We intend to achieve this with the use of organic spices, and this is totally optional to consumers. Also, the final recipes

will be sent to our medical advisors in the local Chinese Medicine Hospitals to remove any unwanted contradictions.

5. Small-scale trial production

After the recipes are classified and modulated with favorable tastes, we will now run some small scale trial production and provide free services for volunteers. Such trial production is expected to help us predict the market popularity of our products.

6. Pick ingredient suppliers

Once we finished chosen the recipes useful and desired, we will now see to which local suppliers or other suppliers connected to a mature transportation system can provide the best ingredients with a fair price. A long-term cooperation is necessary to lower the price and maintain a steady food supply.

7. Application Associate

Next stage, we need to let the consumers able to customize their own diets and receive the delivered ingredients. An application is needed here. Consumers will only need to provide certain basic information such as the current season, the region they lived in, their ages, and our system will automatically generate several corresponding recipes for them to choose. Each recipe is beneficial to their health condition while have different choices of tastes. Once chosen the taste, consumers will be given details recipes for their breakfast, lunch, dinner, including the ingredients needed, the ways to cook, etc. They will also be given the option, that whether they want us to deliver the materials needed by the recipes for them. They may left their addresses if they decided to do so.

8. Broadcasting

To introduce our program into the market, we need to broadcast our application. Solutions include: buying internet passenger flow volume, advertising our application in different platforms, and launching promotion plan.

9. Maintenance and Adjustments

Our recipes can be improved according to our consumer responses. Our application would also need regular maintenance and updates as to attract more consumers.

Our Qualification

Our group have been investigating the dietary structure of Wuxi citizens based on pathological statistic analysis. Nutrients intake was assessed by 24-hour recall, combined with weighting method. Body weight, height and blood pressure were collected by physical examination. After comparing the data with the 2000 revision of Chinese citizens' Dietary Reference Intakes (DRIs), we acquired the result that: the average consumption of meat and oil was higher and the proportion of energy provided by fat was 45.3%. The intake of vitamin A, vitamin B2, vitamin C and calcium was deficient, which only counted for 67.5%, 57.1%, 75.8%, and 59.9% of RNI respectively. Rate of obesity and hypertension reached 21.2% and 23.1% respectively. This allows us to suit the recipes to provide solutions to the exact problem exist in our dietary structure.

Conclusion

Clearly, something should be done to reduce the increasing cost of modern medical care and encourage preventative treatment. Since Chinese medicine has a long history in regulating diet as a preventative medicine to promote health condition. We think the personal diet doctor (individualized dietary therapy program) can be a good choice for modern citizens, and should become popular among consumers.

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