STUDY ON THE IMPACT OF DIETARY STRUCTURE CHANGES ON RESIDENTS' HEALTH IN SOUTHWEST CHINA

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Abstract

Assessing the evolution of dietary structures and its impact on public health is crucial for informing health policies and nutritional interventions. This research evaluates the substantial dietary changes in Southwest China and their implications on the residents' health. Historically, the region exhibited distinctive dietary patterns, which have gradually shifted due to socioeconomic development and cultural exchanges. This study utilized extensive data collection methods, where dietary intake and health outcomes were longitudinally analyzed for accuracy and consistency. The findings of diseases. Additionally, the paper explores the interplay of socioeconomic factors and cultural attitudes that have driven these dietary changes. The case studies underscore epidemiological evidence linking alterations in dietary structure to specific health outcomes, emphasizing the urgency of comprehensive dietary education and policies. The synthesis of these outcomes provides a significant nutritional transition marked by increased consumption of energy-dense foods and decreased physical activity levels, correlating with a rise in diet-related non-communicable valuable insights into the challenges facing public health in the context of changing food landscapes. Concluding, this research highlights the need for adaptive strategies that encompass socioeconomic and cultural dimensions to mitigate adverse health impacts and promote sustainable dietary practices.

Key words: Dietary structure, Public health, Nutritional transition, Southwest China, Socioeconomic factors, Cultural dietary patterns

Introduction

The study of dietary changes in Southwest China necessitates a comprehensive understanding of the socio-economic and cultural transformations that have ensued over recent decades. As one of the most ethnically diverse and economically stratified regions in China, Southwest China—comprising provinces such as Sichuan, Yunnan, Guizhou, and Chongqing—is a microcosm of the broader dietary evolution witnessed across the nation. Rapid urbanization and industrialization in the late 20th and early 21st centuries have spurred significant shifts in lifestyles, consumption patterns, and food production systems. Notably, the influx of global food systems and the proliferation of convenience foods in urban markets reflect a departure from traditional agrarian diets predominantly characterized by local, seasonal, and minimally processed foods. The traditional diet of Southwest China, which emphasized a variety of grains, pulses, vegetables, and modest amounts of meat, has witnessed an alarming trend toward increased consumption of high-calorie, high-sugar, and high-fat

foods, typically associated with Western dietary patterns. The impact of such dietary alterations on the residents of this region merits meticulous examination, particularly with regard to public health outcomes (Wang Y., Su X., Chen Y., et al., 2022).

The dietary transition can be attributed to several interlinked factors, including economic development, modernization, and globalization, each of which influences food availability and choices. Economic expansion has led to a higher disposable income among residents, facilitating access to processed and convenience foods that prior generations would not have encountered. Simultaneously, the shift from a primarily agrarian economy to one more integrated with global markets has diminished the prominence of local agricultural practices, further exacerbating dietary homogenization and leading to a decline in the consumption of traditional staples. Moreover, urban migration has altered familial structures and eating habits, with meals increasingly consumed outside the home. This transition has profound implications not only for individual health but also for community wellness. Furthermore, the influence of marketing and advertising from the burgeoning fast-food industry plays a crucial role in shaping dietary preferences. Aggressive marketing strategies, especially among younger populations, have engendered an appetite for processed foods that are often energy-dense and nutritionally poor, compounding the risks of obesity and related non-communicable diseases (NCDs) such as diabetes and hypertension. (MRF Lesa Mu-Tagaloa-Walker, 2017)

In conclusion, the study of dietary structure changes in Southwest China requires a multifaceted analytical framework that incorporates socio-economic, cultural, and health perspectives. Understanding the trajectory of these changes provides crucial insights into the health challenges faced by residents today. As dietary patterns continue to evolve in response to ongoing socio-economic transformations, it becomes imperative to recognize the implications of such shifts, both from a health and a cultural standpoint. Addressing these complex interrelations through targeted public health interventions may very well determine the future health landscape of Southwest China's diverse populations, making it essential for researchers and policymakers to engage comprehensively with this topic. The reexamination of traditional dietary practices, coupled with the adoption of healthier modern choices, presents an avenue through which the negative health consequences of rapid dietary change can be mitigated, ultimately ensuring the preservation of cultural heritage while fostering improved health outcomes for future generations. (Sterling S., 2017)

Objectives

1. To explore the complex relationship between dietary structure changes and residents' health outcomes in Southwest China, especially how dietary habits change affects public health.
2. To analyze the specific changes of dietary structure in Southwest China in the past two decades, and explore the correlation between these changes and health indicators such as obesity, diabetes and cardiovascular disease. (MRF Lesa Mu-Tagaloa-Walker, 2017)
3. To examine how socio-economic status and cultural factors affect the dietary choices of residents in Southwest China, and how these factors lead to health differences.
4. To explore the impact of dietary structure changes on individual mental health and overall well-being, especially the relationship between high processed food and sugar intake and the risk of anxiety and depression.
5. To evaluate the effectiveness of current policy measures and community initiatives for diet related health issues, and provide the basis for formulating targeted nutrition policies and public health interventions.

Methodology

The investigation into the impact of dietary structure changes on residents' health in Southwest China necessitated a meticulously planned data collection and analysis methodology to ensure the accuracy and reliability of the findings. The study employed a mixed-methods approach that incorporated both quantitative and qualitative data, thereby providing a comprehensive understanding of the evolving dietary patterns among the target population. The quantitative component involved the administration of a structured questionnaire designed to capture a wide array of dietary intake data. This questionnaire was meticulously constructed by utilizing established dietary assessment tools, specifically the Food Frequency Questionnaire (FFQ) and 24-hour dietary recall methods, which are recognized for their effectiveness in capturing dietary habits across different cultures. The FFQ included inquiries regarding the frequency and portion size of various food items consumed over the past month, while the 24-hour dietary recall aimed to gather detailed information on individual food intake during the preceding day. This dual approach was crucial for deriving a more accurate representation of the residents' dietary patterns, thereby allowing for a detailed analysis of macronutrient and micronutrient intake levels. (He H., 2024)

To ensure the reliability of the data, the questionnaire was pilot-tested on a smaller sample prior to the main survey. This pilot study facilitated the identification and rectification of ambiguous questions, enhancing the clarity and applicability of the instrument for the larger population. After adjustments were made, the refined questionnaire was administered to a statistically representative sample of 1,000 residents across various socioeconomic strata within selected urban and rural communities in Southwest China. Respondents were stratified by age, gender, and income level to capture the diversity of dietary practices. Data collection was carried out by trained enumerators who underwent rigorous training to minimize interviewer bias and ensure accurate data entry. In addition to dietary data, the questionnaire also included sections on socio-demographic characteristics, lifestyle factors such as physical activity, smoking, and alcohol consumption, and health indicators including self-reported health status, body mass index (BMI), and the prevalence of chronic diseases such as hypertension and diabetes. (Wang Y., Su X., Chen Y., et al., 2022).

In summary, the data collection and analysis methods implemented in this study were pivotal in facilitating a nuanced exploration of the relationships between dietary structure changes and health outcomes among residents of Southwest China. The combination of quantitative and qualitative approaches provided robust data that not only quantified shifts in dietary intake but also elucidated the socio-cultural dynamics at play. The rigorous statistical analyses further assured the reliability of the findings, contributing to the broader discourse on dietary habits and public health in rapidly transforming societies. The outcomes of this research are anticipated to inform local health policies and dietary guidelines, emphasizing the critical nature of understanding dietary transitions in the context of global influences, and their implications for public health initiatives aimed at promoting healthier eating habits in the region. Ultimately, this study endeavors to contribute to the body of knowledge surrounding nutrition and health, particularly in settings undergoing significant economic and cultural changes, thereby addressing critical gaps in the literature.

Research Results

The phenomenon of nutritional transition in Southwest China, characterized by significant shifts in dietary structure toward increased caloric intake from animal-based foods, processed products, and refined carbohydrates, has garnered considerable attention in public health discourse. This transition, influenced by accelerated economic development,

urbanization, and globalizing food markets, has profound implications for the health outcomes of residents in this region. Empirical evidence suggests a strong correlation between dietary patterns and non-communicable diseases (NCDs). (Harmon S., 2017)

In the process of screening and applying health indicators, multiple key indicators are considered when evaluating the health status of residents in Southwest China. Among them, body mass index (BMI), blood pressure, blood glucose, blood lipids, and dietary intake quality indicators are important evaluation contents. BMI, as a standard for detecting obesity and malnutrition, is often maintained within the range of 18.5-24.9. For residents in this area, survey data shows that the average BMI is 24.3, with overweight and obesity rates reaching 30.1% and 16.5%, respectively. The incidence rate of hypertension in the region reached 29.4%, and blood sugar and lipid abnormalities were also common, 12.2% and 45.1% respectively. (Zhu X., Zhang Y., Zhu Y., et al., 2024)

Indicator category	Quantity indicators	average value	standard deviation	minimum value	Maximum value	median	N (sample size)
Intake of spices	Grams per day	244.65	254.84	5.00	890.00	190.00	43
Liver disease incidence rate	percentage	2.33	1.76	0.00	6.00	1.50	43
Prevalence of hyperglycemia	percentage	13.95	8.65	4.00	26.00	12.00	43
Cardiovascular disease rate	percentage	25.58	15.42	10.00	45.00	22.00	43
Tumor incidence rate	percentage	0.00	0.00	0.00	0.00	0.00	43
Proportion of healthy residents	percentage	58.14	21.63	40.00	80.00	60.00	43

In the southwestern region of China, the consumption of major food categories has undergone significant changes in recent years. According to the latest statistical data, grains, beans, and potatoes are still the foundation of the local residents' diet, with an average annual consumption of about 150 kilograms of grains, maintaining a relatively stable level. In addition, the consumption of rice and noodles accounts for the main proportion of staple foods, with a per capita daily consumption of 200 grams of rice, demonstrating its importance in diet. (Zhang X., Wang G., Ma J., et al., 2024)

The consumption of major food categories in Southwest China is showing a trend of diversification and a greater emphasis on health. Residents are gradually forming a more scientific and balanced diet structure aimed at improving their quality of life and health level.

Food category	Average consumption (kg/year)	Average consumption expenditure (yuan/year)	Average consumption percentage (%)	Unit price (yuan/kg)	Consumption growth rate (%)
Grain	156.7	2274.5	15.3	14.5	0.7
Meat	84.2	6842.1	29.0	81.3	2.5
Vegetable	235.9	2543.6	10.8	10.8	1.1
Fruits	45.6	2783.2	11.8	61.0	3.7

Food category	Average consumption (kg/year)	Average consumption expenditure (yuan/year)	Average consumption percentage (%)	Unit price (yuan/kg)	Consumption growth rate (%)
Aquatic product	26.8	3127.4	13.3	116.7	2.9
Eggs	13.9	699.9	3.0	50.4	1.3
Dairy	19.7	2104.1	8.9	106.8	4.2
Grease	6.5	961.6	4.1	148.0	0.5
Sugar	5.8	364.7	1.5	62.9	1.0
Nuts and seeds	2.4	1521.9	6.5	634.1	6.0
Bean Products	8.7	564.9	2.4	64.9	1.2
Alcoholic beverages	7.6	2719.1	11.5	358.0	5.5
Beverages and water	89.3	1786.0	7.6	20.0	2.2
Condiments and seasonings	3.9	489.5	2.1	125.5	0.8
Other foods	1.2	874.3	3.7	728.6	1.5

Conclusions

Particularly noteworthy is the need for collaborations between academic researchers, healthcare providers, and local government agencies to create evidence-based policies that are both effective and sustainable. By establishing partnerships that facilitate the sharing of data and resources, stakeholders can foster a more robust understanding of the dietary landscape and its implications for health. Moreover, engaging local populations in the research process through participatory action research methods could empower communities to take ownership of their health narratives and foster a sense of agency over dietary choices. (Appleton L., 2015)

Lastly, as globalization continues to shape food availability and consumption patterns, future research must address the implications of global food systems on local dietary structures. Understanding how external market forces and migration patterns influence residents' food choices will be critical for developing responsive policies that not only promote healthy dietary habits but also adapt to the changing landscape of food systems. By embracing an interdisciplinary framework that includes insights from nutrition science, public health, anthropology, and economics, research can yield a holistic understanding of the health implications of dietary structure changes in Southwest China. In conclusion, the need for targeted policy measures and robust future research initiatives is underscored by the findings of this study, which serve as a clarion call to address the intertwined challenges of dietary health, economic resilience, and cultural integrity within this rapidly evolving context.

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