Factors Affecting the Health of the Elderly Aged 65 and Above in Zhonghe Community of Wanzhou District, China

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Abstract

The elderly population aged 65 and above plays a crucial role in an aging society, as their health directly impacts social stability and sustainable economic development. Therefore, conducting in-depth research on the health determinants of elderly individuals aged 65 and above in the Zhonghe community of Wanzhou district becomes essential. This study focuses on the elderly individuals aged 65 and above in the Zhonghe community, identifying the risk factors that influence their health. Based on these factors, disease control and health intervention measures and methods are formulated for the community, aiming to help the government and society understand the health status of the elderly population and explore the underlying reasons behind elderly health issues. This research provides a scientific basis for the development of targeted health policies and services.

Keywords: Wanzhou District, Elderly Health, Community Public Health

Introduction

With the deepening of the aging trend of the global population, the health problems of the elderly are increasingly concerned. As a socially vulnerable group, the elderly population aged 65 and above occupies an important position in an aging society, and their health status directly affects social stability and sustainable economic development. Therefore, it is very necessary to study the health factors of the elderly aged 65 and above in the Zhonghe community of Wanzhou District. The elderly aged 65 and above face multiple health challenges, and their health status is closely related to social stability and development. This study has taken the elderly population aged 65 and above in Zhonghe Community, Wanzhou District, China as the research object, explored various factors that

affect their health, and formulated targeted policies and intervention measures to provide scientific basis.

As a typical local community, the Zhonghe community in Wanzhou district has been experiencing a gradual increase in the proportion of elderly population, and the health issues of the elderly are becoming increasingly prominent. Understanding the factors influencing elderly health can help the community provide better health services, improve the quality of life for the elderly, and ensure social harmony and stability. Additionally, this research can help the government and various sectors of society understand the health status of the elderly population and explore the underlying reasons behind elderly health issues, providing a scientific basis for formulating targeted health policies and services.

Objective

The purpose of this study was to conduct an in-depth analysis of the factors affecting the health of the 65-year-old elderly in Zhonghe community of Wanzhou District. Having collected data and conducted data analysis, the study aims to identify key factors that most significantly affect the health of older adults in the region. The study has examined the lifestyle of older adults, including eating habits, physical activity, smoking and alcohol consumption, to explore how lifestyle affects the health of older adults.

Through the above research objectives, this study aims to provide detailed health data and scientific basis for the elderly in Wanzhou District and community decision makers and related departments. This helps to formulate targeted health policies and community interventions to provide better health services for the elderly and promote the improvement of the quality of life of the elderly, thereby promoting the sustainable development of the community.

Research Scope

This study focused on elderly individuals aged 65 and above in the Zhonghe community of Wanzhou district and conducted a health status survey on 200 participants. Using a sampling survey method, data were collected from January to May 2023, with a total of 200 elderly individuals aged 65 and above participating in health examinations in the Zhonghe community of Wanzhou district. The survey questionnaire collected the following health information: gender, ethnicity, blood pressure, education level, marital status, occupation, smoking status, exercise frequency, and other indicators.

By analyzing these indicators, the study aims to identify the risk factors influencing the health of elderly individuals aged 65 and above in the Zhonghe community of Wanzhou district. The findings will help the community formulate disease control and health intervention measures and methods, as well as provide foundational data for relevant

departments to develop public health policies.

Literature Reviews

1. Community Public Health Services

Zhenqing, T., et al. (2023) explored the strengths, weaknesses, opportunities, and risks of developing functional community health services in Shanghai using the SWOT method. Based on this analysis, they provided strategies to promote the development of functional community health services. The results indicated that community function is essential for expanding community health work and improving the accessibility and equity of healthcare services for community residents. Dianne, C. & Sherene, C. (2023) discussed the approach of improving community health issues through supportive health and social projects. The research showed that providing appropriate funding for community health initiatives can enhance people's health and well-being by establishing social networks and providing support to individuals

Yule, H., et al. (2022) conducted a study on the usage of community health services and the satisfaction level of patients with primary medical care, primary public health, and family doctor contract services. The research also investigated the main influencing factors in this context. The results revealed that patients generally expressed a high overall satisfaction with community health services. However, the satisfaction ratings for specific aspects of community health services were influenced by various factors. Improvements are needed in terms of drug supply and other conditions, and there is also a need for continued efforts in promoting community health services.

Robyn, H., et al. (2022) pointed out that stigmatization in health services poses a severe threat to people's quality of life, especially for patients with blood-borne viruses and sexually transmitted diseases. The study found that employee training and education are crucial in ensuring a vibrant and inclusive healthcare system. Providing specialized services and hiring colleagues with expertise is an advantage. Specific entry barriers arise from various healthcare projects, which may hinder participants' ability to engage in comprehensive healthcare projects. The decentralization of power in healthcare institutions is a significant factor affecting the acquisition of health information, and greater collaboration among healthcare institutions should be encouraged.

2. Factors Affecting Elderly Health Status

Tingyi, L., et al. (2023) used binary logistic regression and propensity score matching (PSM) to study the impact of environmental perception on the health status of middle-aged and elderly individuals. The research indicated that environmental cognition has a significant influence on the psychological well-being of middle-aged and elderly people, particularly for

individuals with lower education levels and lower-income households, as they are more sensitive to the effects on their mental health. Yanran, C. & Xuezheng, Q. (2022) conducted a study combining large-scale national household surveys and nationwide historical meteorological data. The study provided empirical evidence showing that both hot exposure days and cold exposure days in the past year significantly impact the physical health of the middle-aged and elderly population, while controlling for urban factors, year effects, and individual characteristics. The effects on individual physical health exhibit certain seasonal patterns and heterogeneity across different population groups

Lei, W., et al. (2022) conducted a study to understand the health status and influencing factors among elderly individuals aged 65 and above in Heilongjiang Province. The research aimed to provide reference for targeted health management measures for the elderly. The results indicated that being in the age group of >80-90 years, female, living alone, having daily activities, and smoking were identified as risk factors for the health of elderly individuals. Conversely, engaging in recreational activities, having the ability to recover from significant incidents, possessing medical insurance, consuming alcohol, and maintaining a light diet were identified as protective factors for elderly health.

Methodology

The study employed a questionnaire survey to collect data, and the research tools included general information and the Short Form-8 (SF-8) health survey. The survey focused on the general demographic characteristics of the elderly population in the Zhehe community, Wanzhou District. These characteristics primarily included age, gender, ethnicity, education level, and occupation. The relevant influencing factors encompassed exercise habits, smoking and drinking habits, and marital status.

To assess the physical and mental health status, the Chinese version of the SF-8 questionnaire was utilized. The SF-36 questionnaire is widely recognized and commonly used worldwide as a tool for measuring quality of life. Its applicability has been widely acknowledged across various populations.

The scale consists of 8 items measuring quality of life. The Cronbach's alpha coefficient of the SF-8 scale is 0.749, and the correlation coefficient of each dimension is 0.339-0.539, which has good reliability and validity and is suitable for wide application in the Chinese population.

In this study, the SF-8 questionnaire was used to measure the physical and mental health of community residents aged 65 and above in the comprehensive community of Wanzhou District. The data was entered into Epidata 3.1 software and analyzed using the IBM SPSS statistical package v.20. Percentages were used to represent continuous variables, while proportions were used for categorical variables. Univariate analysis for continuous variables

included t-tests and analysis of variance (ANOVA), while Chi-square tests were used for categorical variables. Multivariable analysis was thereafter conducted using unconditional logistic regression analysis. A p-value less than 0.05 was considered statistically significant for detecting differences.

Results

The results were shown only multivariable analysis (table 1-6) after univariate analysis was conducted

Table 1: Multivariable logistic regression analysis of overweight and obesity among elderly people in the community (n=200)

Variables	Group	β	SE	Wald	P	OR	95%CI	
							Lower Limit	Upper Limit
Ethnicity	Tujia (ref.)							
	Han	0.234	0.081	15.618	0.000	1.383	1.177	1.624
Age	65-70 (ref.)							
	71-80	0.400	0.120	11.100	0.001	1.492	1.178	1.888
	81-90	0.326	0.128	6.434	0.010	1.386	1.076	1.785
Occupation	individual or worker (ref).							
	farmer or unemployed	-0.084	0.101	0.664	0.414	0.920	0.755	1.121
Exercise Habits	exercising (ref).							
	not exercising	0.230	0.092	6.072	0.013	1.257	1.047	1.510

In logistic regression models, the odds ratio (OR) is calculated based on the regression coefficient (β). The logistic function is defined as: $P(Y = 1 \mid X) = 1 / (1 + \exp(-\beta X))$, where $P(Y = 1 \mid X)$ represents the probability of the dependent variable Y being 1 given the independent variable X. The exp() function is the exponential function that raises the base e to the power of the product of the regression coefficient and the independent variable.

Table 1 shows the prevalence of overweight and obesity among older adults. According to the above formula OR = exp(β), it can be calculated, the OR of the Han nationality was 1.383, 95% Cl: 1.177-1.624 and the ORs of 71-80 years old and 81-90 years old were 1.492 and 1.386, respectively, and 95% Cl were 1.178-1.888 and 1.076-1.785, respectively. Calculate other data using the same formula.

Table 2: Multivariable logistic regression analysis of abnormal blood lipids among elderly people in the community(n=200)

Variables	Groups	β	SE	Wald	P	OR	95%CI	
							Lower Limit	Upper Limit
Gender	male	0.252	0.090	69.928	0.002	1.284	1.098	1.501
	female (ref.)							
Ethnicity	Han	0.161	0.096	14.764	0.021	1.175	0.961	1.421
	Tujia (ref.)							
Education Level	primary school	-0.153	0.098	2.441	0.117	0.856	0.706	1.040
	junior high school (ref.)							
	high school and above	0.210	0.111	3.563	0.058	1.234	0.991	1.536
Marital Status	Married (ref.)							
	divorced or widowed	0.160	0.090	3.153	0.075	1.173	0.983	1.400
Occupation	individual or worker (ref.)							
	farmer or unemployed	0.260	0.095	7.250	0.006	1.295	1.072	1.565
Smoking Status	non-smoker	0.201	0.102	3.845	0.050	1.223	1.000	1.497
Alcohol Consumption	occasional	0.250	0.110	5.098	0.023	1.283	1.033	1.594
	Daily (ref.)							

Table 2 shows the presence of dyslipidemia in the elderly. According to the above formula OR = exp(β), it can be calculated that the OR of men was 1.284, 95% Cl: 1.098-1.501 and the OR of the Han nationality was 1.175, 95%Cl: 0.961-1.421. Calculate other data using the same formula.

Table 3: Multivariable logistic regression analysis of metabolic syndrome among elderly individuals in the community (n=200)

Variables	Groups	β	SE	Wald	P	OR	95%CI	
							Lower Limit	Upper Limit
Gender	male	0.250	0.080	9.928	0.001	1.084	1.098	1.501
	female (ref.)							
Ethnicity	Han	0.161	0.096	2.786	0.094	1.175	0.971	1.421
	Tujia (ref.)							
Age	65-70 (ref.)							
	71-80	0.250	0.105	5.604	0.017	1.283	1.043	1.578
	81-90	0.080	0.146	0.298	0.583	1.083	0.812	1.443
Education Level	primary school	-0.050	0.112	0.200	0.653	0.950	0.762	1.184
	junior high school (ref.)							
	high school and above	0.187	0.120	2.396	0.121	1.206	0.950	1.530
Occupation	individual or worker (ref.)							
	farmer or unemployed	-0.130	0.111	1.374	0.240	0.876	0.704	1.091

Table 3 shows the metabolic syndrome in the elderly. According to the above formula OR = exp(β), it can be calculated that; the OR of men was 1.084, 95% Cl: 1.098-1.501 and the OR of the Han nationality was 1.175, 95%Cl:0.971-1.421. Calculate other data using the same formula.

Table 4: Multivariable logistic regression analysis of abdominal obesity among elderly people in the community (n=200)

Variables	Groups	β	SE	Wald	P	OR	95%CI	
							Lower Limit	Upper Limit
Gender	male	0.720	0.083	120.32	0.001	3.766	2.981	3.897
	female (ref.)							
Ethnicity	Han	0.402	0.083	23.242	0.000	1.496	1.270	1.763
	Tujia (ref.)							
Education Level	primary school	0.082	0.104	0.618	0.430	1.085	0.883	1.333
	junior high school (ref.)							
	high school and above	0.284	0.110	6.642	0.010	1.330	1.070	1.651
Occupation	individual or worker (ref.)							
	farmer or unemployed	-0.077	0.100	0.616	0.431	0.924	0.760	1.123
Exercise Habits	exercising (ref.)							
	not exercising	0.210	0.095	04.898	0.026	1.234	1.023	1.490

Table 4 shows the abdominal obesity of the elderly. According to the above formula OR = exp(β), it can be calculated that the OR of men was 3.766, 95% Cl: 2.981-3.897 and the OR of the Han nationality was 1.496, 95%Cl:1.270-1.763. Calculate other data using the same formula.

Table 5: Multivariable logistic regression analysis of impaired fasting blood glucose among elderly people in the community (n=200)

Variables	Groups	β	SE	Wald	P	OR	95%CI	
							Lower Limit	Upper Limit
Age	65-70 (ref.)							
	71-80	0.413	0.091	20.287	0.000	1.511	1.262	1.810
	81-90	0.226	0.125	3.282	0.070	1.254	0.981	1.604
Education Level	primary school	-0.081	0.097	0.694	0.404	0.920	0.760	1.10
	junior high school (ref.)							
	high school and above	0.268	0.103	6.641	0.010	1.308	1.066	1.605
Occupation	individual or worker (ref.)							
	farmer or unemployed	-0.125	0.095	1.732	0.187	0.880	0730	1.063

Table 5 shows impaired fasting glucose in older adults. According to the above formula OR = exp(β), it can be calculated that the ORs of 71-80 years old and 81-90 years old were 1.511 and 1.254 respectively, and 95% Cl were 1.262-1.810 and 0.981-1.604 respectively. Calculate other data using the same formula.

Table 6: Multivariable logistic regression analysis of hypertension among elderly people in the community (n=200)

Variables	Group	β	SE	Wald	P	OR	95%CI	
							Lower Limit	Upper Limit
Ethnicity	Han	0.387	0.120	10.353	0.001	1.474	1.163	1.867
	Tujia (ref.)							
Alcohol Consumption	occasionally	0.005	0.160	0.002	0.967	1.005	0.735	1.376
	daily (ref.)							

Table 6 shows the status of hypertension in the elderly. According to the above formula OR = exp(β), it can be calculated that the OR of the Han nationality was 1.474, 95% CI: 1.163-1.867. Calculate other data using the same formula.

The survey results showed that among the elderly aged 65 and above in Zhonghe community of Wanzhou District, race, drinking frequency were closely related to the incidence of hypertension. Further multivariate analysis confirmed that race, gender, and drinking frequency were risk factors for hypertension.

Conclusion and Discussion

1. Conclusion

Based on the survey results, the factors influencing the health issues of elderly individuals aged 65 in this community mainly include gender, ethnicity, age, education level, occupation, alcohol consumption, smoking, and exercise frequency. Different characteristics of elderly individuals show varying distributions of the risk of metabolic disorders, and their influencing factors differ as well. Therefore, specific and targeted elderly health management strategies should be formulated based on the different characteristics of elderly individuals in the local community and the distribution of risk factors for different metabolic disorders.

2. Discussion

In recent years, there has been increasing evidence that chronic diseases are closely related to various factors such as personal factors, behavioral and lifestyle factors, and

environmental factors. Early detection of these diseases and intervention through changes in dietary habits, lifestyle improvements, or active medical treatments can effectively suppress disease progression, extend the lifespan of elderly individuals, and improve their quality of life. Currently, practices have shown that chronic disease management for the elderly can yield positive results. In conclusion, comprehensive chronic disease health management, including education, lifestyle improvements, and leveraging technology, plays a crucial role in promoting the health and well-being of the elderly population.

The survey results indicate that the factors influencing the health issues of elderly individuals aged 65 in the Zhonghe community mainly include personal factors, behavioral and lifestyle factors, and ethnic factors. Personal factors refer to the characteristics and conditions of elderly individuals themselves, including gender, age, occupation, and others. Among elderly individuals aged 65 and above, gender and age may have an impact on health status. Women generally have longer life expectancy during old age, but they may also face a higher risk of chronic diseases. Age-related physiological decline can lead to weaker immune and resistance capabilities, making the elderly more susceptible to infections and diseases. Additionally, different ethnic groups may have varying dietary habits and healthcare beliefs, leading to differences in health status among elderly individuals of different ethnicities (Pengb, D., Juanjuan, S., Wenjuan, Z., & Xuehui, W., 2016)

These factors are interrelated to form a comprehensive impact on the health status of elderly individuals. Personal factors, behavioral and lifestyle factors, and ethnic factors collectively shape the health condition of the elderly. Therefore, when formulating elderly health policies and intervention measures, it is essential to consider these factors comprehensively and provide personalized and targeted health services to improve the quality of life for the elderly and promote healthy aging in the community. Strengthening health promotion and education in the community to encourage healthy lifestyles among the elderly is also a crucial strategy.

Suggestion

1. Community doctors can carry out systematic intervention on hypertensive patients. They can closely monitor blood pressure levels, remind patients in time to monitor blood pressure and take medication according to the prescribed regimen.

2. It is very important to establish a chronic disease health record immediately. Provide follow-up cards for chronic diseases and contact cards for medical staff to strengthen communication with community residents. Monthly follow-up visits to monitor changes in blood pressure, blood sugar, body weight, etc., to guide rational drug use and health consultation, to evaluate patients' medication compliance, and to observe drug effects and adverse reactions.

3. In terms of health education, Free clinic activities to organize learning for patients should be carried out from disseminating basic health knowledge to understanding the etiology, clinical manifestations, treatment and prognosis of various chronic diseases, improving the quality of life of the elderly and the overall health of the people.

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