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RESEARCH ARTICLE

# The Status and Influencing Factors of Hypertension among Floating Population in Ningxia of China

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## ABSTRACT

Hypertension is one of the most common risk factors for cardiovascular disease and the leading cause of mortality globally. This study aimed to assess the prevalence and influencing factors of hypertension among the floating population in Ningxia, China, and to provide a scientific basis for hypertension prevention and control. A total of 454 questionnaires were distributed in this survey, and 421 valid questionnaires were obtained, including 147 people with hypertension. The questionnaire mainly included basic demographic information, disease situation, and lifestyle. Physical examination includes height, weight, abdominal circumference, blood sugar, and blood pressure. The results showed that there were 147 cases of hypertension among the floating population in Ningxia, and the prevalence rate was 34.9%. multivariate logistic regression analysis showed that residential pattern (OR=123.60; 95%CI = [7.46-2047.21]), diabetes mellitus (OR=66.06; 95%CI = [7.58-575.64]), alcohol consumption (OR=16.45; 95%CI = [1.57-172.75]), BMI (OR=2.51; 95%CI = [1.09-5.81]) and abdominal circumference (OR=1.38; 95%CI=[1.02-1.86]) was a risk factor ($p < 0.05$). Exercise (OR=0.007; 95%CI = [0.00-0.22]) was a protective factor ($p < 0.05$). In conclusion, there is a high prevalence of hypertension among the floating population in Ningxia, China. Alcohol consumption, diabetes, BMI, and abdominal circumference are the main risk factors. Moderate exercise can delay or reduce the prevalence of hypertension.

**Contribution/Originality:** This study contributes to the existing literature on the prevalence of hypertension and the factors influencing it among the elderly floating population in an economically underdeveloped region of China represented by Ningxia. It provides ideas for a solid foundation for controlling hypertension and increasing awareness in this population.

## 1. Introduction

Hypertension has become a major public health problem faced by the floating population, which mainly affects the brain, heart, kidneys, and other important organs and eventually leads to the death of patients (Han et al., 2017). According to a 2019 study by the Japanese Society of Hypertension (JSH) (Kobayashi et al., 2021), there are about 43 million people with Hypertension in Japan, and 31 million have poor blood pressure control. The number of hypertension-related deaths in Japan is about 100,000 people per year, leading to the number of cardiovascular disease deaths (Fan et al., 2020). The prevalence of hypertension in adults in European countries is 30.0%-35.0%, and that in the United States is 35.0%-40.0%. Hypertension is 25.0%-30.0% in many parts of Asia and 13.0%-20.0% in many parts of Africa (Cífková, 2023). Approximately one-third of adults in China have hypertension (Jing et al., 2021). Age positively correlates with the prevalence of hypertension, with older adults having significantly higher rates compared to the middle-aged and young. Hypertension has become an important risk factor threatening human life and health (Omar et al., 2022).

Health-related behaviors go beyond the healthy lifestyle established in daily life, such as eating a balanced diet, being active, and resting. It is also an individual or group's behavior related to health and diseases, such as available medical treatment and good compliance when suffering from infection (Delavar, Pashaeypoor & Negarandeh, 2020). Studies have shown that unhealthy health-related behaviors such as smoking, excessive drinking, unreasonable diet, lack of exercise, and incorrect lifestyle will increase the risk of hypertension (Zhang et al., 2021). After the reform and opening up, with the sustained economic development, the number of floating populations has grown every year, and the social status, financial income, life, and medical treatment of floating population have changed after leaving their original residence, which indirectly affects their health level (He et al., 2024). According to China's seventh census data, the floating population is 370 million (Sun et al., 2023). They face many problems, such as social adaptation, diet change, living habits, mental stress, family relationships, and medical treatment (Kaur, Floyd & Balta, 2022). Based on this, the research team used convenient sampling to investigate the prevalence and influencing factors of hypertension among older adults drifters in Ningxia by combining a questionnaire survey and physical examination among 454 floating population in Yinchuan, Ningxia, to provide a theoretical basis and corresponding countermeasures for the prevention and treatment of hypertension in this group.

Hypertension is the number one global mortality factor for coronary heart disease and the second leading mortality factor for stroke. Its prevalence and influencing factors are the focus of academic attention. Chinese scholars have conducted studies on the prevalence and influencing factors of different populations in different regions to varying degrees. However, fewer studies have been conducted on the prevalence and influencing factors of the floating population and adolescents, and the attention to this special group of the floating elderly population, in particular, is still insufficient. As an essential part of China's rapid urbanization and economic development, the floating population has become a significant focus and difficulty in hypertension prevention and control because of their unstable lifestyles, insufficient accessibility to health resources, and relatively low health literacy. The Ningxia region is located in northwestern China, with a severe lack of medical resources, backward economic development, harsh natural conditions, poor dietary habits, and a large floating population, this is in stark contrast to patients in developed areas of China. A data review revealed no literature on this type

of region's prevalence and influencing factors. Therefore, it is necessary to understand the prevalence and influencing factors of floating elderly hypertensive patients in Ningxia and to provide appropriate preventive and healthcare measures for patients in this population to improve self-care and self-management of hypertension.

### 1.1. Objectives

To find out the prevalence and main influencing factors of floating elderly hypertensive patients in Ningxia.

## 2. Methodology

### 2.1. Research design

This study takes a cross-sectional survey of the prevalence of hypertension among floating elderly in Ningxia, China. This previously unreported data is crucial in understanding the prevalence trend of floating elderly hypertensive patients in Ningxia. The study, which selected 454 people as a baseline using convenience sampling, provides a comprehensive understanding of the general demographic information and prevalence characteristics of floating elderly hypertensive patients in Ningxia.

### 2.2. Research Location

This study were conducted in Yinchuan, Ningxia, China. Four community health service stations with the most significant number of elderly floating hypertensive patients will be selected in Yinchuan.

### 2.3. Research Population

This study focuses on elderly migrant patients with essential hypertension, age-controlled over 45 years old, living in a place of mobility for more than 3 years, and able to communicate normally and with easy mobility. Exclusion criteria patients include patients with a history of mental illness and cognitive impairment. Patients who refuse to undergo regular follow-up. Patients are participating in other hypertension health management programs. No consent was obtained from the family, and the family did not support participation in the program. The patient currently has comorbid with other chronic conditions, diabetes, kidney disease, COPD, and other chronic conditions. Those who plan to move or need to go out in the next six months, and those with high BP that is more serious and needs to be hospitalized. Those who resisted the study and could not trust the research team after repeated explanations from the research team.

### 2.4. Research Sample

From July 2021 to April 2022, 454 middle-aged and older adults aged 45 and above without severe hearing impairment or mental illness were surveyed by convenience sampling in Ningxia, China.

### 2.5. Research Instrument

The evaluation of this study's results was mainly based on Physical examination measurements, with questionnaires as a secondary outcome. Physical examination has

height, weight, blood pressure, blood sugar, and abdominal circumference. The questionnaire includes primary demographic data, including gender, age, marital status, and residence model; socioeconomic status: including education level, occupation, type of housing, per capita annual income, and household expenditure (including the amount spent on food); history of chronic diseases: including hypertension and diabetes; lifestyle behaviors included smoking, alcohol consumption, physical activity intensity, sitting time and sleep quality.

*2.5.1. Diagnostic criteria for hypertension*

The diagnostic criteria of Chinese Guidelines for Prevention and Treatment of Hypertension (Wang et al., 2023): systolic blood pressure≥140 mm Hg and diastolic blood pressure ≥90 mm Hg in the case of no antihypertensive drugs; or if the patient has a history of hypertension and is currently taking antihypertensive medications, he is diagnosed with hypertension even though his blood pressure is less than 140/90 mm Hg.

*2.5.2. Diagnostic criteria for diabetes*

Following the Clinical Guidelines for the Prevention and Treatment of Type 2 diabetes in the Elderly in China (Moiz, Zolotarova & Eisenberg, 2024), both patients with typical symptoms are fasting blood glucose ≥7.0mmol/L or postprandial blood glucose ≥ 11.1 mmol/L. No specific symptoms, only fasting blood glucose ≥ 7.0 mmol/L or postprandial blood glucose ≥ 11.1mmol/L, glucose tolerance test two hours blood glucose ≥ 11.1 mmol/L can be diagnosed as diabetes; patients with long-term insulin injection. No specific symptoms, only fasting blood glucose ≥ 7.0 mmol/L or postprandial blood glucose ≥ 11.1mmol/L should be repeated. Still above the value can be diagnosed as diabetes.

*2.5.3. Diagnostic criteria for overweight or obesity*

According to the Chinese Adult Overweight and Obesity Prevention and Control Guidelines, Body Mass Index (BMI) < 18.5 kg/m$^2$ is considered underweight; 18.5-23.9 kg/m$^2$ was average; 24.0-27.9 kg/m$^2$ was overweight; ≥28 kg/m$^2$ is considered as obesity.

*2.5.4. Inclusion criteria for Smoking*

Smoking was defined as having smoked at least 20 packs of cigarettes in one's life, at least one cigarette a day for one consecutive year, or at least one catty of tobacco in one's life. Never smoking was defined as not smoking.

*2.5.5. Inclusion criteria for alcohol consumption*

Alcohol consumption was defined as drinking at least once a week in the past year, and never drinking was defined as not drinking at all.

**2.6. Statistical analysis**

Epidata3.1 software was used to input the data of the questionnaire, and SPSS20.0 software was used to analyze the current situation of the research object and the

influencing factors of the disease. the quantitative data were expressed by mean±standard deviation (X±S) and tested for normality. the qualitative data were analyzed by χ2 analysis and binary Logistic regression analysis. $p<0.05$ was considered statistically significant.

### 2.7. Ethical Approval and Consent to Participate

Written informed consent was obtained from all participants after obtaining ethical approval from Ningxia Medical University (license number: 2022-Z055) and Universiti Teknologi MARA(PG/FB/19) Ethical Review Committee (SERC). Written informed consent was obtained from all the participants before intervention.

## 3. Results

### 3.1. Demographic characteristics

A total of 454 questionnaires were distributed in this survey, and 421 valid questionnaires were obtained, with an effective rate of 92.7%. there were 212 males (50.3%) and 209 females (49.6%); Age: 96 (47.8%) were 45-64 years old, 105 (52.2%) were over 65 years old, with an average age of (62.4±8.4) years (refer to Table 1).

Table 1: Demographic characteristics of the respondents

| Characteristic | | N | Composition Ratio (%) |
|---|---|---|---|
| Gender | Male | 212 | 50.3 |
| | Female | 209 | 49.6 |
| Civil state | Unmarried | 0 | 0 |
| | Married | 393 | 93.3 |
| | Divorced | 22 | 5.0 |
| | Death of a spouse | 6 | 1.4 |
| Inhabitancy pattern | Living with children | 163 | 38.7 |
| | Live alone | 258 | 61.2 |
| Level of education | Not been to school | 79 | 18.7 |
| | Primary school | 141 | 33.5 |
| | Junior high school | 76 | 18.1 |
| | High school, technical secondary school | 61 | 14.5 |
| | College, bachelor degree or above | 64 | 15.2 |
| Occupation | Government enterprises and institutions | 68 | 16.1 |
| | General clerk | 63 | 14.5 |
| | Individual business | 71 | 16.7 |
| | Agricultural laborer | 219 | 52.1 |
| Per capita annual income/ten thousand yuan | < 1 | 89 | 21.1 |
| | 1≤x < 3 | 110 | 26.1 |
| | 3≤x < 5 | 152 | 36.1 |
| | ≥5 | 70 | 16.7 |
| Annual household expenditure/ten | < 1 | 120 | 28.5 |
| | 1≤x < 3 | 179 | 42.5 |

| | | | |
|---|---|---|---|
| thousand yuan | 3≤x < 5 | 64 | 15.2 |
| | ≥5 | 58 | 13.8 |
| Type of accommodation | Rent a house | 240 | 57.0 |
| | To buy a house | 182 | 43.0 |

### 3.2. Comparison of the general situation of hypertension patients in floating population

A total of 421 people was investigated in this study, including 147 people with hypertension and 34.9% with an average age of (62.5±7.7) years. gender, age, residence mode, residence duration, education background, housing type, diabetes, smoking, drinking, exercise and sleep quality all had significant effects on blood pressure ($p < 0.05$) (refer to Table 2 and Table 3).

Table 2: Prevalence and univariate analysis of hypertension

| Variate | | N | $\chi^2$ | p value |
|---|---|---|---|---|
| Gender | Male | 87 | 15.585 | 0.001* |
| | Female | 60 | | |
| Marital status | Unmarried | 0 | 0.863 | 0.650 |
| | Married | 141 | | |
| | Divorced | 2 | | |
| | Death of a spouse | 4 | | |
| Residential model | Living with children | 11 | 100.512 | 0.001* |
| | Live alone | 136 | | |
| Length of residence | Less than 1 year | 31 | 12.797 | 0.005* |
| | One to three years | 30 | | |
| | Three to five years | 37 | | |
| | More than 5 years | 49 | | |
| Level of education | Not been to school | 24 | 18.999 | 0.001* |
| | Primary school | 82 | | |
| | Junior high school | 23 | | |
| | High school, technical secondary school | 7 | | |
| | College, bachelor degree or above | 11 | | |
| Type of accommodation | Rent a house | 116 | 48.531 | 0.001* |
| | Since the purchase and building | 31 | | |
| Occupation | Government enterprises and institutions | 8 | 1.305 | 0.860 |
| | General clerk | 6 | | |
| | Individual business | 11 | | |

| | | | | |
|---|---|---|---|---|
| | Agricultural laborer | 66 | | |
| | other | 56 | | |
| Annual average per capita income (CNY) | < 9999 | 24 | 0.451 | 0.930 |
| | 10000≤x<29999 | 42 | | |
| | 30000≤x<40000 | 70 | | |
| | x≥50000 | 11 | | |
| Total household expenditure | < 1 | 51 | 2.790 | 0.425 |
| | 1 ≤x< 3 | 87 | | |
| | 3≤x< 5 | 6 | | |
| | x≥5 | 3 | | |
| Diabetes | Yes | 126 | 59.904 | 0.001* |
| | No | 21 | | |
| Smoking status | Yes | 86 | 6.344 | 0.012* |
| | No | 61 | | |
| Drinking status | Yes | 97 | 4.655 | 0.049* |
| | No | 20 | | |
| Physical activity | Active | 48 | 56.790 | 0.001* |
| | Inactive | 99 | | |
| Sedentary time | x< 4 | 55 | 1.363 | 0.506 |
| | 4≤x< 7 | 78 | | |
| | x≥7 | 14 | | |
| Sleep quality | Good | 99 | 13.787 | 0.003* |
| | Poor | 48 | | |

* Represents $p < 0.05$, and the difference is statistically significant.

### 3.3. Comparison of physical examination of hypertensive patients in floating population of different genders

There were 87 males (20.6%) and 60 females (14.25%). Male BMI (25.9±1.0) kg/m$^2$ > female BMI (25.3±1.1) kg/m$^2$ ($p < 0.05$), the difference was statistically significant. male abdominal circumference (95.5±1.8) cm was higher than female abdominal circumference (94.0±2.7) cm ($p < 0.05$), and the difference was statistically significant (refer to Table 3).

Table 3: Physical examination indicators by sex (n=147)

| | Male (N=87) | Female (N=60) | t | p value |
|---|---|---|---|---|
| BMI (kg/m$^2$) | 25.9±1.0 | 25.3±1.1 | 5.06 | 0.00* |
| Abdominal circumference (cm) | 95.5±1.8 | 94.0±2.7 | 3.99 | 0.02* |
| Systolic blood pressure | 137.7±15.9 | 142.0±18.0 | -0.41 | 0.64 |

| | | | | |
|---|---|---|---|---|
| (mm Hg) | | | | |
| Diastolic pressure (mm Hg) | 85.3±10.6 | 84.5±14.1 | 0.41 | 0.22 |
| Fasting blood glucose (mmol/L) | 6.8±2.3 | 6.9±2.3 | -0.26 | 0.44 |

* Represents P < 0.05, and the difference is statistically significant.

### 3.4. Multi-factor analysis of influencing factors of hypertension in floating population

On the basis of single-factor statistical analysis, statistically significant variables (p < 0.05) were selected: gender, residence pattern, housing type, diabetes, smoking, alcohol consumption, and exercise, and assigned values to these dichotomous variables (see Table 4).

Taking hypertension as the dependent variable (1= Yes, 0= No), gender (1= Male, 2= Female), residential pattern (1= living with children, 2= living alone), housing type (1= renting, 2= buying a house by oneself), diabetes (1= Yes, 0= No), smoking (1= Yes, 0= No), drinking (1= Yes, 0= No), physical exercise (1= Yes, 0= No), and the two continuous variables of measured abdominal circumference and calculated BMI were analyzed by binary Logistic regression as shown in table (refer to Table 4).

Table 4: Binary logistic regression analysis of the influencing factors of hypertension

| Variable | The assignment |
|---|---|
| Gender | 1= Male, 2= Female |
| Living mode | 1= Living with children, 2= Living alone |
| Housing types | 1= Rent a house, 2= Buy a house |
| Diabetes | 0= No, 1= Yes |
| Smoking | 0= No, 1= Yes |
| Whether drinking | 0= No, 1= Yes |
| Whether to do physical exercise | 0= No, 1= Yes |
| BMI (kg/m2) | Numerical variables |
| Abdominal circumference (cm) | Numerical variables |

The results of binary logistic regression analysis showed that residence model, diabetes, alcohol consumption, exercise, BMI and abdominal circumference significantly affected the prevalence of hypertension in Ningxia floating population (p<0.05). Among them, the OR value of residence model, alcohol consumption, and diabetes is greater than 1, which is the risk factor. It indicates that the floating population living alone has a higher risk of hypertension than those living with their children.

The prevalence of hypertension in floating population who drink alcohol is higher than that in non-drinking population. Patients with high blood sugar had higher rates of hypertension than those with low blood sugar. Physical exercise is negatively correlated with the prevalence of hypertension (B=-4.981, OR<1), which is a protective factor of hypertension (refer to Table 5).

Table 5: Multivariate Logistic regression analysis of hypertension in floating population

| Items | B | S.E. | Wald$\chi^2$ | p | OR | 95%CI Lower limit | 95%CI Upper limit |
|---|---|---|---|---|---|---|---|
| Gender | -0.019 | 1.034 | 0.000 | 0.985 | 0.981 | 0.129 | 7.444 |
| Age | 0.011 | 0.060 | 0.031 | 0.860 | 1.011 | 0.898 | 1.137 |
| Living model | 4.817 | 1.432 | 11.309 | 0.001 | 123.602 | 7.460 | 2047.895 |
| Housing types | -1.449 | 1.081 | 1.797 | 0.180 | 0.235 | 0.028 | 1.953 |
| Diabetes | 4.191 | 1.105 | 14.393 | 0.000 | 66.059 | 7.581 | 575.635 |
| Smoking | -2.392 | 1.252 | 3.646 | 0.056 | 0.091 | 0.008 | 1.065 |
| Drinking | 2.800 | 1.200 | 5.447 | 0.020 | 16.449 | 1.566 | 172.752 |
| Exercise | -4.981 | 1.776 | 7.865 | 0.005 | 0.007 | 0.000 | 0.223 |
| BMI | 0.923 | 0.427 | 4.678 | 0.031 | 2.517 | 1.090 | 5.811 |
| Waistline | 0.318 | 0.153 | 4.308 | 0.038 | 1.375 | 1.018 | 1.857 |

## 4. Discussion

Hypertension has a long course, no recovery, complex etiology, and lack of exact pathogenesis (Lim, Solmi & Cortese, 2021). In this survey, the prevalence of hypertension in Ningxia's floating population is 34.9%, among which the prevalence of males is 20.6%, and female is 14.25%, indicating that the prevalence of hypertension in Ningxia's floating population over 45 years old is at a high level. It was significantly higher than the average of 25.2% in China and higher than the prevalence rate of hypertension in Chengdu and Sichuan province (34.62%) (Li et al., 2024). It was found that the prevalence of hypertension among 1493 migrant workers in Jilin province was 28.1%, which was significantly higher than the average hypertension among the non-floating population in Jilin province (13.3%). This may be related to the quality of the migrant population in the region (71.2% had a high school education or less, 52.1% were farmers, and 47.2% had an annual income of less than 30,000 yuan) and the imperfection of the social, and medical security system (Kulkarni et al., 2023). It is suggested that the government introduce policies to integrate the floating population's medical insurance into the management system, improve the reimbursement ratio, regularly arrange complementary psychological counseling services according to the psychological state of the floating population, hold community activities, care for the spiritual life of the floating population, and establish colorful community culture so that they can truly integrate into the residential area (Tian et al., 2020).

Gender, age, residential mode, duration of residence, education level, housing type, diabetes, smoking, alcohol consumption, exercise, and sleep quality can all affect the prevalence of hypertension in the floating population, and the difference is statistically significant. According to data (Wei, Liu & Wu 2023), many unhealthy lifestyles will lead to chronic diseases, such as smoking (Pan et al., 2022), lack of exercise, and unhealthy diet. The prevalence of hypertension in the floating population who drank alcohol (74%) was higher than that in the non-drinking population (28.6%). If the OR value of alcohol consumption is greater than one, it is a risk factor, indicating that the possibility of hypertension is higher in the drinking population than in the non-drinking population in Ningxia. This may be due to the local customs and habits of Ningxia. People prefer to drink alcohol to keep out of the cold during festivals (Wang et al., 2020). Short-term moderate drinking has no adverse effects on the body. The prevalence of hypertension in the floating population of Ningxia is higher. In terms of diet, people in Ningxia like food high in fat, oil, salt, and sugar (Cena & Calder, 2020). Young men prefer drinking tea

and barbecue, while young women prefer desserts, hot pots, and milk tea. When the floating population and their children live together, their eating habits will inevitably be influenced by young people. It is also possible that some floating population, accustomed to the small courtyard houses in the countryside, feel anxious and annoyed after arriving at the buildings in the city. the influence of various negative emotions leads to endocrine disorders and changes in blood sugar (Kehinde, O'Donnell & Grealish, 2023), thus affecting the changes in blood pressure. Therefore, for middle-aged and elderly migrants with low education levels, due to lack of cognition and poor acceptance (Fang et al., 2020), and the formation of bad living habits, it is far from enough to only use billboards, health pamphlets, health apps, and other means. It can be widely spread through typical cases around, enhance empathy, and make people realize that the health hazards of chronic diseases affect not only individuals but also families. It is suggested that the government should have a global awareness and carry out health education based on the group perspective so as to "seek medical treatment as soon as possible when the body is unwell, and prevent and care when the body is unwell." through this means, it is continuously strengthened to form imperceptible influence and improve the health literacy of the middle-aged and elderly floating population, so as to reduce the prevalence of chronic diseases.

The OR value of the residence model is greater than one, indicating that the floating population in Ningxia has a higher risk of hypertension when living alone compared with when living with their children. In the survey, the proportion of hypertension patients living alone in most floating populations is large (91.1%), which may be due to the unaccustomed urban lifestyle of the Ningxia floating population due to local migration (Xiong et al., 2022), the emotional impact of migration, and higher costs than the previous residence. Under certain economic pressure. The floating population itself may pay more attention to taking care of their children, neglecting themselves and not wanting to add burden to their children. On the other hand, the medical system for hukou migration is not complete; Because they live alone, they are not controlled by their families in terms of diet and do not have the supervision of their relatives in terms of exercise. In addition, their children focus on their work and personal family and ignore their parents' health status. a series of factors lead to the increase in blood pressure of the floating population.

Abdominal circumference and BMI ($p<0.05$, $OR>1$) respectively indicated that the prevalence of hypertension in the Ningxia floating population was higher with the increase of individual abdominal circumference and BMI. Due to the differences in regional migration of the floating population, there are even differences in economic conditions, dietary conditions, and habits between the two places (Guo & Luo, 2022). The educational level of the floating population in Ningxia is mostly at the primary school level, and the knowledge about hypertension is also limited. Low compliance to medical treatment (Sha et al., 2025); on the other hand, in recent years, due to the impact of the epidemic, people have been quarantined at home for a long time, and exercise has been reduced (Malkawi et al., 2021). Because children are close to each other, they can get emotional comfort and psychological support for taking care of their grandchildren, and the psychological pressure is slightly reduced, so they eat more and gain more weight (Vaillant-Ciszewicz, Palazzolo & Guerin, 2022).

There was a negative correlation between physical exercise and the prevalence of hypertension ($B=-4.981$, $OR<1$), indicating that the mobile population who took practice had a lower probability of hypertension. Most of the respondents are farmers and have

nothing to do except take care of their children after arriving in the city. Besides, the elderly population in Yinchuan mainly participates in group activities such as drinking tea, dancing, and singing for leisure. Affected by this, Ningxia's floating population engages in recreational activities and takes proper exercise. It reduces the incidence of hypertension in the floating population (Ru et al., 2022).

Hypertension is mainly reflected in the long course of the disease, which is difficult to cure and requires long-term medication and regular medical treatment. For many patients, it is torture, both physically and psychologically. Medicine is not a panacea. "Sometimes it cures, often it helps, always it comforts." Therefore, while paying attention to early prevention and disease treatment, we should pay attention to the physical and mental health of middle-aged and older adults, give them more company and care, improve their family happiness, make them happy and happy life, and contribute to health promotion.

## 5. Conclusion

Prevalence of Hypertension in Elderly floating. The prevalence of hypertension among the elderly floating population in Ningxia, China was 34.9%. Factors significantly associated with hypertension included living alone, diabetes, alcohol consumption, lack of physical exercise, higher BMI, and larger waist circumference. In summary, with increased social mobility, the floating elderly population has become a unique and easily neglected group. They often face higher health risks due to frequent migration, poor access to medical resources, and weak awareness of health management, with hypertension being a particularly prominent problem. Due to their long absence from the original community healthcare network, the awareness, treatment, and control rates of hypertension are significantly lower among the floating elderly than among the non-migrating elderly. Untreated and uncontrolled hypertension further increases the risk of cardiovascular and cerebrovascular diseases and other complications. Inadequate medical resources, difficulties in settling medical insurance payments in different places, and language and cultural barriers in the new place of residence of the floating elderly population often hinder the standardized management of hypertension. Health deterioration and complications caused by hypertension increase the reliance on medical resources and home care, further aggravating the economic burden on society and families. Health education is an essential foundation for hypertension management in the floating elderly population and is an effective tool for increasing disease awareness, improving health behaviors, and promoting early intervention.

## Ethics Approval and Consent to Participate

The researchers used the research ethics provided by the the Ethics Committee of Ningxia Medical University (license number: 2022-Z055) and Universiti Teknologi MARA(PG/FB/19) Ethical Review Committee (SERC). Written informed consent was obtained from all the participants before intervention.

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**Conflict of Interest**

The authors declare there are no conflicts of interest.

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