

Health Inequality: the Rural-Urban Perspective in China

Xiaohan Cai¹, Xirui Wang² and Jiayi Zhu^{3, *}

¹WLSA Shanghai Academy, Shanghai, China

²The Experimental High School Attached to Beijing Normal University, Beijing, China

³College of Liberal Arts and Sciences, University of Florida, Florida, the United States

*Corresponding author: zhujiayi@ufl.edu

Abstract:

Rural-urban health inequality has long been a worrying issue in Chinese society. Manifested in indicators, including lifespan disparity, high risk of specific diseases, and worse physical fitness condition, health inequality has significantly hindered the achievement of equity and social justice. This research therefore studies the health inequality between rural and urban populations in China by analyzing the macro-level and micro-level factors contributing to this socioeconomic issue. By applying the qualitative research method, the study examines how these factors contribute to health inequality. For the macro-factors, including external determinants like unequal Medicare policies and disparities in infrastructure development, key findings indicate that rural residents suffer from inadequate medical resources, higher healthcare costs, and greater exposure to environmental pollutants. For the micro-factors, the research reveals lower personal income, lack of awareness of the disease syndrome and type, cultural cognition differences, and age differences lead rural area individuals to utilize medical resources ineffectively. In the end, the study provides insightful suggestion, corresponding to each factor analyzed, on future reforms and policies to mitigate health disparity between rural and urban populations.

Keywords: Health Inequality; Rural-Urban Healthcare; China.

1. Introduction

Health inequality has long been a significant socio-economic issue around the world. Specifically in China, health inequality has become an increasingly alarming issue in society, severely affecting people's well-being.

During periods of economic transition in China, a more pronounced wealth gap has led to evident health disparity between the rich and the poor. Past

research by Chinese scholars has revealed health inequality favoring wealthy people in healthcare services (Xie, 2009). The disparity in health outcomes is also closely linked to regional differences: In China, significant health inequalities between rural and urban residents long existed, highlighting broader societal disparities. Although health inequalities within urban and rural areas vary, this inequality is relatively more severe in rural areas, favoring wealthy people

over the poor more (Xie, 2009) Chinese rural residents suffer from worse physical conditions, higher risk of diseases, and even less life expectancy, while people in urban areas generally receive relatively better health outcomes due to socioeconomic advantages [1].

Health inequality not only makes people's health conditions subject to locational differences but also leaves profound implications for socioeconomic disparities, creating a necessity for further research. Thus, it is essential to understand and study the features of health inequality and the determinants contributing to it. These difficulties may further perpetuate the severity of health outcomes disparities, partially affecting specific groups of vulnerable rural populations. Therefore, addressing these difficulties can significantly contribute to resolving health inequality and provide effective alleviation of broader rural-urban disparities. For instance, the inaccessibility of healthcare services, creating a burden for local citizens to receive treatment, may reveal the structural imperfection in China's current healthcare system.

Unequal health outcomes against rural residents may also exacerbate poverty since economic hardships and poor health outcomes can significantly entrench class divisions, limiting the potential for upward mobility. Grave health disparities, along with widening class and regional disparities, will hinder the achievement of social justice, affect societal well-being, and obstruct China's future economic developments, highlighting the urgency and necessity for studies to address Chinese rural-urban health disparities.

Several significant studies have been conducted on this topic. Xie E (2009) demonstrates the relationship between income level and healthcare utilization, proving the existence of pro-rich health and healthcare inequalities in China [2]. Studies from Xiong and Huang (2016) analyze multiple factors contributing to China's rural-urban health inequality, highlighting the crucial impact of socioeconomic status, medical resources accessibility, and medical insurance on institutional discrimination against rural residents [3]. Wong Fuqin (2012) highlights the role of a healthy lifestyle as the intermediary mechanism through which socioeconomic status affects health outcomes [4]. Internationally, Costa-Font, Cowell, & Shi(2023)conducted a comparative analysis between China and the U.S. to highlight the mitigative effect of health insurance on health inequality, while studies by Pulok et al. (2020) provide an overview of the multiple methodologies used to study the horizontal inequality in the healthcare system [5, 6]. Though multiple researchers have analyzed different determinants of health disparities, most researchers focus more on a few factors to provide an in-depth analysis toward one specific perspective. There is still a gap in the academic field for comprehensive studies to integrate vari-

ous factors and qualitatively analyze their diverse impacts on health inequality in one article. Therefore, building on these foundations, this study aims to bridge various factors, multidimensionally examining the causes of China's health disparities between urban and rural residents. By focusing on determinants in micro and macro level, the research aims to provide a multi-perspective analysis, contribute to ongoing discussion in scholar field about health inequality in Chinese society, and offer valuable insights into potential policy interventions to alleviate the health inequality between Chinese rural and urban areas.

2. Problem Description

2.1 The Definition of Health Inequality

The World Health Organization defines "health inequality" as differences in health status or in the distribution of health resources between different population groups [7]. It is the disparities in health outcomes for different groups of people and caused by various reasons. Importantly, health inequality exceeds the definition of healthcare inequality. While health inequality contains broader determinants such as living conditions, culture, education, etc., healthcare inequality specifically relates to unequal access to healthcare services. It focuses on differences in the availability and quality of medical services provided by governmental medical welfare or private insurance, which directly impact people's health outcomes. Although health inequality is a broader term, healthcare inequality is a key factor contributing to the issue of health inequality.

In China, health inequality between rural and urban residents is a significant issue. It is revealed in multiple characteristics.

2.1.1 Lifespan Disparity

Despite the new medicare service provided by the Chinese government improving the overall lifespan of both rural and urban residents obviously, the disparity in their lifespan still remains. The research article from Chen and Canudas indicates: in the urban area, life expectancy has increased by 2.17 years (from 73.66 to 75.83) for males and 2.65 years (from 78.74 to 81.39) for females, meanwhile the lifespan disparity has decreased by 0.61 years (from 11.33 to 10.72) for males and 0.75 years (from 10.12 to 9.37) for females [8]. However, these reductions in urban areas are modest compared to the persistent 10-year lifespan gap between rural and urban residents, revealing health inequalities remain a significant challenge.

2.1.2 High Risk of Specific Diseases

Rural area residents are at a higher risk of being infected with certain diseases, one good example can be chronic

respiratory illnesses like chronic obstructive pulmonary disease (COPD) in western China. The research shows the prevalence of COPD in rural areas is significantly higher than in urban areas, caused by factors such as smoking, biomass fuel exposure, and inadequate healthcare access [9]. The different geographical factors in rural areas cause various diseases to the residents there. The lack of excellent medical resources in rural areas further strengthens the health disparity for the residents, especially when the disease is highly contagious.

2.1.3 Worse Physical Fitness Condition

The physical fitness levels in rural areas are generally worse than in urban regions. Rural children and adolescents often exhibit lower physical fitness scores, particularly in cardiorespiratory and muscular fitness. This fitness gap is influenced by limited access to sports facilities and nutrition resources [10]. Physical fitness has a strong influence on health outcomes, which affects immunity, mental health, stamina, etc. The disparity in physical fitness levels is also a result of health inequality.

In summary, health inequality is the disparity of health outcomes between different groups of people due to various factors. China has an obvious health inequality between rural and urban area residents, manifesting by a 10-year lifespan gap, a higher risk of exposure to certain diseases, and worse physical fitness conditions.

3. Factor Analysis

Based on the research, the factors that cause health inequality can be classified into two categories: macro-level factors and micro-level factors. The macro-level factors refer to external influences beyond the control of residents, such as unequal Medicare policies and disparities in local infrastructure development. On the other hand, micro-level factors focus on individuals themselves, such as differences in income, education levels, and personal circumstances.

3.1 Macro-Factors

3.1.1 The Unequal Medicare Policy

After the Medicare Reform in 2003, China now has three basic health insurance plans: Urban Employee Basic Medical Insurance (UEBMI), Urban Resident Basic Medical Insurance (URBMI), and New Rural Cooperative Medical Scheme (NRCMS). However, these three schemes have different coverage and quality. UEBMI is a mandatory plan for employed workers who are employed in urban regions, funded by payroll taxes from employers (6%) and employees (2%) [11]. URBMI is a voluntary plan for the rest of the urban area residents who do not have

a formal job, such as students and retired people. As for the NRCMS, it is also a voluntary plan for rural area residents, usually covering the medical resources in residents' local areas at a lower price. In 2013, the average per capital financing support of NRCMS was RMB 370 (US\$ 59.68), among which the participant was responsible for RMB 90 (US\$14.52). Despite this, the reimbursement rate was 10% lower and healthcare coverage was much smaller for NRCMS than for UEBMI and URBMI [12]. Rural residents thus face higher out-of-pocket costs for medical treatments.

Additionally, the NRCMS usually focuses on local medical resources, but rural hospitals often lack the capacity to handle more serious medical conditions, such as cancer or other major surgeries. As a result, rural residents must travel to cities like Beijing or Shanghai for specialized treatment. However, NRCMS coverage across provinces is inconsistent, often offering lower reimbursement rates for services obtained outside a resident's home province. Also, rural residents need to be in person at a hospital to apply for the reimbursement, while processing claims across provinces can be slow and have frequent delays in receiving the reimbursement, unlike urban residents who can get direct fee waivers at the payment stage. The extra time of waiting for the reimbursement is a burden for getting back home, since they may miss the high-speed rail (train) and spend more money on hotel.

In conclusion, the unequal Medicare policies place rural residents at a disadvantage, limiting them to opt for plans with lower reimbursement rates and narrower coverage. The administrative complexities across provinces further hinder rural access to convenient and high-quality health services.

3.1.2 The Unequal Economic and Infrastructure Development

China experiences an imbalance in economic development, with wealth and investments primarily concentrated in the eastern coastal regions. These coastal areas offer higher-income job opportunities and a better living environment due to the investment in business and trade. The richer material standards in urban areas make them more attractive to younger generations. In contrast, rural regions in inland China are more dependent on agriculture and industry, having a lower economy compared with coastal areas. The healthcare sector reflects this economic divide: highly skilled doctors are less inclined to work in rural hospitals unless the government or social organizations provide extra incentives to them.

Except for the human resource gap, the poor economy in rural areas also leads to less infrastructure development. Due to lower consumption power, businesses are hesitant

to invest, and governments in these areas collect less tax revenue, limiting their ability to fund healthcare infrastructure projects. As a result, rural areas have significantly fewer hospitals, beds, and healthcare workers compared to urban regions. For example, the number of hospitals per 1,000 square kilometers in eastern China is eight times higher than in western rural regions [13]. Similarly, health workers and hospital beds are concentrated in urban zones, further deepening the inequality in health resources.

The lack of health resources caused by the unequal economic and infrastructure development in rural areas has a strong negative impact on residents' health outcomes. Research shows that increased access to hospitals, doctors, and medical beds highly reduces mortality rates, and this trend is more efficacious in underdeveloped regions. The unequal distribution of these resources leads rural area residents to face more serious health inequality issues.

3.1.3 Environmental Pollution and Awareness

The Chinese rural areas face some environmental pollution that directly influences residents' health. Compared to urban areas that use cleaner energy resources, many rural households still rely on coal and wood, leading to high exposure to toxic matter that links to respiratory diseases. Moreover, the overutilization of fertilizers and pesticides, which exceed 40% of the country's major crops, causes water pollution in rural areas that rely on agriculture for development. It causes the rates of stomach and liver cancer to be 50% higher in rural residents than those who live in urban areas [14]. The unique air and water pollution in rural areas strengthens the health inequality for residents there.

3.2 Micro-Factors

3.2.1 Income Difference

People living in rural areas tend to have much lower incomes than their urban counterparts. In comparison to those with low income in rural areas, individuals with higher economic status in cities tend to choose better, more effective, and higher-level medical service resources. They enjoy more, faster, and more comprehensive medical services than those with low income, regardless of the application of relevant medical policies, the choice of medical resources, or the time required for medical services. These unequal phenomena have specific manifestations. Low-income individuals in rural areas tend to choose not to use any medical resources when they are ill, and they will try to recover with their own bodies when their conditions improve. However, if their conditions worsen, they will selectively accept some medical services, such as basic outpatient visits and purchasing base-priced drugs.

The differences in drug selection, treatment model selection, hospital admission requests, and levels of hospital will further manifest the income disparity between rural places and cities. According to the data, the incidence rate of low-income groups in 2013 (26.7%) was higher than the overall level (24.1%), but the annual hospitalization rate (8.4%) was lower than the overall level (9.0%) [15]. People with higher income levels tend to choose more advanced hospitals, while people with lower income levels tend to choose lower-level hospitals, directly using village hospitals or going to private doctors. When considering top-tier medical services such as surgery and dialysis, which require significant financial support, low-income people in rural areas often forgo these treatments and opt for conservative and cheaper treatments. People with higher incomes are more likely to accept such services.

3.2.2 Disease Type Difference and Awareness

Due to the different types of diseases that patients suffer from, they tend to choose different medical services between rural places and cities [16]. There are many types of disease classification, such as chronic diseases, major diseases, and common diseases; there are also other different classifications, such as infectious diseases, non-infectious diseases, and cancer. There are many subdivisions within these disease types.

According to data research in cities of China, on a comprehensive level, the differences in medical service choices among the public due to their disease types are not significant. Both major and minor diseases may be treated with better medical resources [17]. Compared with the comprehensive aspect, from the perspective of fine disease classification, people usually choose lower-level hospitals, such as village and township hospitals, when suffering from common diseases such as colds and flu. They also tend to choose the most basic medical services. When suffering from chronic diseases such as mild cardiovascular diseases (hypertension, coronary heart disease, cerebral infarction, etc.), diabetes, malignant tumors, chronic obstructive pulmonary diseases (chronic bronchitis, emphysema, etc.), and mental disorders and psychosis, people usually choose middle-to-high-level hospitals for medical treatment. Few people choose lower-level hospitals, and they tend to choose more advanced technologies and methods for medical services. When suffering from major diseases such as malignant tumors, severe cardiovascular diseases, major organ transplants, and deep coma, people usually choose high-level hospitals for medical treatment and opt for high-risk advanced technology medical services.

By comparison, different from people in cities who can fully utilize medical resources and services, people living

in rural places sometimes don't clearly classify the diseases they've got. In rural areas, people don't get medical check-ups and don't have much access to them, so many people treat very serious illnesses as everyday illnesses. When they find the symptoms of many serious diseases, they may also use low-level medical resources or even do not use medical resources due to the lack of awareness and knowledge of such diseases, which ultimately leads to unequal utilization of medical resources.

3.2.3 Cultural Cognition Difference

When people choose medical service resources, their own religious beliefs, values, ethnicity, cognition, personal habits, and personal culture difference all have significant impacts on their healthcare choices between cities and rural areas. Compared to the cultural identity formed in history and nation, people tend to be more influenced by the smaller cultural differences. These differences originate from individuals' spirits, such as personal thoughts, education, social systems, families, and ethnic groups. These differences will lead people to prioritize different medical resources based on their individual spirits and make decisive choices based on their individual spirits.

First, the difference in ethnic groups between rural area and city will have a great impact on people's choices of medical service resources. During interview in Xichang, Sichuan, China, the choices of medical services made by the Yi ethnic group who primarily lived in rural areas were different from those made by the Han ethnic group who lived in cities. Sometimes the Yi group would choose to treat their illnesses with traditional Yi medical methods rather than using hospital medical resources. In contrast, the Han group would tend to go to the hospital for treatment when they fell ill.

Second, in terms of religious beliefs and regional differences, some rural areas with people who have religious beliefs may choose to use certain exorcism treatment methods that they believe in, such as inviting exorcists and Taoists to hold a ceremony for them, while other regions and religions in rural areas may choose to worship gods to treat diseases [18]. Some indigenous people in rural areas will treat illnesses with locally made medicines (similar to decoctions) and special physical therapy methods. People who retain these customs and beliefs in rural areas will also play a role in faith and psychotherapy when choosing these medical services and methods when they are ill.

3.2.4 Age difference

The age gap also has a significant impact on the types and quantity of medical services people choose. In present-day China, the elderly population is mostly distributed in rural areas, while middle-aged people and teenagers tend to be more concentrated in urban areas. The accumulation of

the elderly population in rural areas has led to unequal and imbalanced access to medical resources based on age categories.

Compared to other age groups, the elderly in rural areas face great difficulties in seeking medical care and choosing medical services [19]. Firstly, due to the aging of their physiological functions and mobility, the elderly have a reduced ability to move, which leads to a large number of elderly people in rural areas finding it difficult to go to advanced hospitals for medical treatment. The elderly often choose to go to nearby rural hospitals for medical treatment. In addition, due to the progress of science and technology, many elderly people in rural areas are unable to adapt to the rapid growth of technology and are unable to use electronic products and smartphones. The disadvantages in front-end information have led to a major problem for rural elderly people in seeking medical care and obtaining advanced medical service resources comparable to urban residents during artificially limited situations such as epidemics. The changes in times have led to the rural elderly population receiving less and less medical services. Due to the fact that many hospitals no longer have consultation windows, some elderly people in rural areas are even unable to obtain medical services. The vulnerability of the elderly to diseases also leads to the unequal utilization of medical resources by the elderly population in rural areas. Unlike the middle-aged people and teenagers in urban areas, the elderly have fewer medical options for the same disease, and they have time and effect requirements for the medical services they receive. In the face of many diseases, the elderly population in rural areas can only choose conservative treatment, and they cannot afford the risks brought by more advanced technologies such as surgery. Therefore, the elderly population concentrated in rural areas faces a very serious problem of unequal access to medical service resources.

4. Suggestions for Improvement

4.1 Suggestions for Income Difference and Medicare Policies

Due to the fact that the personal income of rural areas is lower than that of urban areas, many rural groups are unable to afford the medicines required for medical services. The government and rural areas or pharmaceutical companies should provide more welfare policies for these specific rural groups and specific drugs. For example, the Swiss company Novartis developed the drug Glivec for chronic myeloid leukemia, and low-income people in rural China could only afford Indian generic drugs because they could not afford the imported Glivec. Since the poli-

cy did not approve the purchase and sale of generic drugs, it was once defined as a crime. To ensure that low-income people can also reasonably utilize medical services and related drugs, the government later changed the medical law to allow for the small-scale purchase and sale of self-use drugs. The government can further rationally relax more drugs and more extensive medical policies and laws to ensure fair utilization of medical resources for low-income people in rural areas. In addition, the government can encourage pharmaceutical companies to cooperate with social welfare organizations such as the Red Cross to further optimize and increase the medical service resources available to low-income rural people. Specific policies and encouragement measures can be divided into different stages based on income levels, with different levels of preferential policies in each stage. The lower the income, the greater the degree of preferential policies, thereby offsetting the medical service inequality caused by low income in rural areas. In terms of medical insurance policies, compared with regular medical insurance, the new rural cooperative medical insurance for farmers contains a smaller list of covered drugs. Farmers also occupy an important position in the rural population. The government can increase the coverage of drugs for low-income farmers' new rural cooperative medical insurance and reduce their financial burden, so that rural farmers can enjoy better medical services at a discount. Low-income rural groups can also consider purchasing some medical commercial insurance in addition to medical insurance, thus providing an additional layer of protection for medical services.

It is difficult to change the personal economic income of rural areas directly, as it is a problem involving national economic development and social systems. China's national economic system development will drive social and personal income growth in a slow manner, and In addition, low-income people in rural areas can enjoy certain policy help to develop their own industries, and increase their own income while driving national economic development.

4.2 Suggestions for Infrastructure Development

Due to the fact that advanced technology hospitals are mostly located in urban areas, while less advanced ones are mostly located in rural areas, and the medical facilities and conditions in small hospitals are generally worse than those in urban large hospitals, this has led to an unequal distribution of medical resources in China's urban and rural areas. The government should provide corresponding economic support and attract sufficient social assistance to help change this imbalance, which includes both hardware and software differences. Meanwhile, rural hospitals and

urban hospitals can make the following changes to help change the unequal distribution of medical services.

There are several ways to improve and enhance the hardware disparity to change the unequal distribution of medical resources. Firstly, advanced medical equipment and facilities should be introduced and paid attention to frequently. In many delicate operations, such as cesarean section surgery, laser eye surgery, and organ transplant surgery, these precise medical equipment can make the hardware technology in rural hospitals reach the standard of urban hospitals. At the same time, the configuration of wards and beds should be ensured to be reasonable in terms of hygiene environment, bed structure, and position arrangement. Rural hospitals can emulate the layout of urban hospitals and expand them when necessary to improve the preoperative, intraoperative, and routine medical services. Secondly, it is also very important to improve the hardware of surgical supplies. Many rural hospitals use cheaper and lower-quality surgical supplies, and rural hospitals should try to introduce high-quality supplies and use them in routine surgeries, such as cataract surgery, neurosurgery, and orthopedic surgery. This can ensure the equal utilization of hardware facilities in different regions. For the software disparity, there are several ways to improve and enhance it to change the unequal distribution of medical resources. Software resources refer to the experience and advanced level of medical skills of doctors. The development of the Internet can establish connections between rural and urban hospitals. When rural hospitals encounter difficult cases, they can consult with doctors from urban hospitals through network consultations more often. In addition, urban hospitals can encourage doctors with rich experience to engage in multiple occupations and provide corresponding hospital policy support. These multi-point occupation doctors can bring innovation in terms of human resources and technology to rural hospitals, and sometimes provide surgical support. At the same time, rural hospitals should encourage their doctors to actively learn advanced medical techniques and send doctors on rotating study and training programs at urban hospitals to enhance the medical literacy of local doctors.

4.3 Suggestions for Environmental Pollution and Awareness

At present, China's policy tends to move polluting industries from urban areas to rural areas, as well as the use of pesticides required for farming in rural areas, has led to some special kind of diseases that only emerge on the farmers and residents in rural areas. This phenomenon represents the emergence of healthcare inequality on farmers and residents in rural areas. The government should strengthen its supervision and review of these pollutant

leaves in rural areas. At the same time, it should declare pollution and safety protection awareness to local rural residents and encourage them to report illegal discharge problems of polluting enterprises, helping rural areas obtain more equitable medical resources. The government should remind farmers to take protective measures when farming and spraying pesticides, provide them with free or discounted medical services, and make up for their contribution to society in terms of medical care and physical injury compensation.

4.4 Suggestions for Medical Awareness

Compared with urban populations, the rural population with low education levels has a rough grasp of disease symptoms and often treats serious illnesses as minor ones, or even lacks the awareness to seek medical treatment and checkups. Hospitals and the government should provide rural residents with relevant and necessary disease awareness classes and lectures in rural areas. They should provide regular health check services at fixed locations and inform rural residents of the importance of checkups and body skills, as well as the symptoms of major diseases before onset, to ensure that these rural residents who lack subjective awareness of using medical resources can use them. What's more, hospitals can improve the speed and accuracy of checkups, and provide certain financial assistance. The government can make simple questionnaires and answer sheets during necessary festivals and dates to help rural people remember the necessary medical knowledge and set tasks to encourage rural people to have checkups in communities. By popularizing self-awareness, the government can help rural people become conscious of enjoying medical services like urban people.

4.5 Suggestions for Cultural Cognition Difference

Many ethnic minority groups in China live in rural areas, and the culture and current situation of these ethnic minority groups do not support them in accessing more medical service resources, leading to the occurrence of unequal medical services between urban and rural areas. Due to pressure from language and other aspects, urban and rural hospitals should recruit more doctors from nearby ethnic minority groups to provide medical services in the hospital. Alternatively, hospitals can hire bilingual (the corresponding ethnic minority language and Mandarin) ethnic minority volunteers to help ethnic minority groups who are unable to access medical services due to cultural or linguistic barriers to obtain more medical resources. In addition, hospitals should provide training on ethnic minority culture to doctors to ensure that the diagnosis process respects ethnic minority culture. Hospitals can

also integrate ethnic minority cultural features into medical resources to attract ethnic minorities to seek medical treatment.

From another perspective, hospitals can also encourage doctors to provide free medical services or rural diagnosis services by formulating policies. In addition, ethnic minorities in rural areas can be allowed to witness the strength of modern medicine and change their old perceptions. By improving the degree of ethnic minority medical consultations and medical service resource utilization in rural areas, the fairness of medical services between rural and urban areas can be greatly improved and reflected in the data.

4.6 Suggestions for Age Difference

Due to the fact that the elderly population in rural areas is not proficient in using smartphones and modern technology networks, some hospitals do not have consultation windows, which causes great obstruction for the elderly population in rural areas to access medical services. Therefore, hospitals should reserve consultation windows to cater to the elderly population who are not proficient in using smartphones, represented by rural elderly population. The government and hospitals should provide more detailed guidance manuals, both online and offline, to help the elderly population successfully access medical services.

During special periods, such as epidemics, separate online consultation windows should be opened or more on-site services and customer service assistance should be provided to help the elderly population who are unable to move or are not proficient in using service resources.

In addition to reserving consultation windows, hospitals can also consider recruiting volunteers from the community, allowing these young volunteers to personally guide the elderly population in operating smartphones or physically helping the elderly in recognizing the routes between hospital departments. Alternatively, these young volunteers can use the elderly's personal information to book hospital appointments directly, solving the elderly's problems and helping them access medical services, thus demonstrating the fairness of urban and rural areas.

The government and the state can also promote the development of escort industries, allowing more professional medical scholars to participate in the protection actions of the elderly population in rural areas who are most in need of care. The government should improve the escort system, allowing escorts to help the elderly understand their illnesses, interpret the information recorded by doctors, help the elderly pay bills, get medicine, accompany them to and from the hospital, and assist with other procedures. In conflicts between escorts and patients' families, fair rules should be established to promote the maturity and

stability of the escort industry, further meeting the needs for fairness in medical services for the elderly population. This can balance the unequal medical service situation between urban and rural areas due to age.

4.7 Additional Suggestions

There are many new drugs on the market in big cities, but many rural hospitals may not have a way to know such a new drug on the market, and what effect this drug has. At this time, the government should try its best to expand the rural hospitals that sellers can sink to, so that rural hospitals can have access to the latest and most cutting-edge medical technology information. The government and the state should continue to promote online sales of drug sensitivity, improve the online sales system and prescription drug prescribing requirements. In addition, the government should enhance the prescribing power of hospital doctors in rural areas, and encourage rural hospital doctors to actively study the knowledge, literature and products of medicine. In order to let the doctors with the right to prescribe more about these front-end knowledge, the hospital can add some full-time doctors to pay special attention to the news of these new drugs and new technologies. After receiving the new knowledge and the change of the new system, these doctors should make weekly reports and compile the important information for the hands of the doctors who have the authority to prescribe. These doctors can explain the facts to prescribers, or they can invite people from the pharmaceutical company's medical department to come to the hospital or directly conduct online cloud conferences. This allows prescribers to write a prescription for a new drug after they understand how it works. Even if rural hospitals do not have this drug in stock, rural patients can also buy drugs with prescriptions in online stores that can be bought in urban hospitals, and enjoy the same medical services and resources. In terms of focus, ability and channels, these doctors who pay attention to new technologies and medical technologies can relax their vision and jump from the medical field in big cities to the international level, which is generally only paid attention to by big hospitals in cities. Many new drugs are listed by foreign companies in China and other countries at the same time, but the clinical trials of the indications done by the company in each country are not the same, and the results will be different. If a patient in a rural area does not have the symptoms of an indication in a clinical trial in China but is consistent with clinical trials in other countries, then the prescriber can also prescribe the drug to the patient. This will further reduce the inequality gap in the range of health services and resources available in rural and urban areas.

5. Conclusion

This research uses a qualitative approach to analyze various factors contributing to the rural-urban health inequality problem in China and proposes solutions to counter the issue. For factor analysis, this research divides the various determinants into macro-layer and micro-layer to analyze them more thoroughly. Regarding the macro perspective, medicare policies, economic and infrastructure development, and environmental pollution reveal an urban-favoring inequality that hinders rural residents from gaining better health outcomes. From the micro perspective, discrepancies in income level, disease type, individual awareness, cultural cognition, and age distribution all result in the rural residents receiving worsened healthcare services and medical resources, placing them at a severe disadvantage. For corresponding solutions, this research proposes multiple suggestions for future policies, including adopting pro-poor healthcare subsidy policies, promoting medical equipment improvements in rural hospitals, connecting medical resources in rural and urban areas, strengthening rural environmental regulation, increasing public health awareness campaigns, and other reforms. By studying these determinants and suggestions multi-dimensionally, this research can examine the rural-urban health disparities from multiple perspectives.

Drawing on the conclusions of both Chinese and international scholars, this research synthesizes various factors while considering other possible reasons leading to this health inequality. Through comprehensive analysis, this paper can contribute to the ongoing discussion on determinants of Chinese health disparities and propose suggestions for the Chinese government to address this socio-economic issue.

Nevertheless, this study still remains plenty of issues worthy of further exploration. For instance, the determinants this research analyzes may still not fully represent the complete picture of the rural-urban health inequality issue in China, and there may still be other potential factors that have yet to be uncovered. Furthermore, some of the suggestions proposed by this study still require further empirical testing. How to comprehensively study the whole picture of rural-urban health inequality in China and propose more excellent solutions to address the issue? Further explorations are needed for this ongoing discussion.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

References

- [1][2] Xie E. Income-related inequality in healthcare utilization. *Economic Research*, 2009, 44(02): 92-105.

- [3] Xiong Yuegen, Huang Jing. Inequality in healthcare utilization between urban and rural China: an empirical analysis based on CHARLS data. *Journal of Population*, 2016, 38(220): 62-76.
- [4] Wang Fuqin. Socioeconomic status, lifestyle, and health inequality. *Society*, 2012, 32(02): 125-143.
- [5] Costa-Font J., Cowell F., Shi X. Health inequality and health insurance coverage: the United States and China compared. *IZA - Institute of Labor Economics*, <http://www.jstor.org/stable/resrep57160>, 2023.
- [6] Pulok M. H., van Gool K., Hajizadeh M., Allin S., Hall J. Measuring horizontal inequity in healthcare utilization: a review of methodological developments and debates. *The European Journal of Health Economics*, 2020, 21(2): 171-180.
- [7] World Health Organization. Health inequities and their causes. *World Health Organization*, <https://www.who.int/news-room/facts-in-pictures/detail/health-inequities-and-their-causes>.
- [8] Chen M, Canudas-Romo V. Urban-rural lifespan disparities and cause-deleted analysis: evidence from China. *BMJ Open*, 2022, 12: e050707.
- [9] Zhou, Z., Zhao, Y., Shen, C., Lai, S., Nawaz, R., Gao, J., Chen, G. Inequality in the health services utilization in rural and urban China: A horizontal inequality analysis. *International Journal of Environmental Research and Public Health*, 2022, 19(4): 2284.
- [10] Yang, L., Wang, W., Weng, X., Chen, Q., Sun, L., Deng, Y., Zeng, J. Prevalence and risk factors for COPD in an urbanizing rural area in western China: The Yunnan Health and Development Study. *International Journal of Chronic Obstructive Pulmonary Disease*, 2022, 17: 1-10.
- [11] Liu, H., Li, S., Xiao, Q., Feldman, M. W. Social support, health literacy, and health care utilization among older adults in China. *International Journal of Environmental Research and Public Health*, 2021, 18(20): 10813.
- [12] Li, C., Dou, L., Wang, Y., Gao, W., Chen, D., Fu, Q. Health-related quality of life and its influencing factors among patients with chronic schistosomiasis in the Hubei province of China: a cross-sectional study. *Health and Quality of Life Outcomes*, 2018, 16(1): 133.
- [13] Zhou, Z., Gao, J., Fox, A., Rao, K., Xu, K., Xu, L., Zhang, Y. Measuring the equity of inpatient utilization in Chinese rural areas. *International Journal for Equity in Health*, 2017, 16(1): 84.
- [14] He, Y., Zhou, G., Li, Y., Wang, J., Gao, M., Zhao, Y., Chen, S. Health disparities in rural areas of China: the role of the healthcare workforce. *BMC Public Health*, 2020, 20(1): 228.
- [15] Jin Yinzi, Zhu Weiming, Zhang Yaoguang, Xu Ling, Meng Qing-yue. Impact of health resources allocation on healthcare seeking behavior among inpatients in China. *Chinese Journal of Health Policy*, 2017, 10(9): 51-56.
- [16][17] Yu Chang-lin. Study on disease types, medical insurance and choice behavior of farmers' medical institutions. *Agrotechnical Economics*, 2017(2):82-92.
- [18] Zhao Zhiya, Xu Hongbin, Lu Zuxun, Li Wenzhen. A review of the influence of spiritual culture on residents' health care choices. *Chinese Journal of Social Medicine*, 2022, 2.
- [19] Shen Yue, Li Liang. The Influence of medical facility accessibility on residents' health seeking behaviors from the perspective of age stratification: a case study of Shanghai Chongming Island. *Human Geography*, 2021(2): 46-54.