The Elderly Chronic Diseases in China

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Abstract: *The world is gradually entering an aging society, and chronic diseases are also one of the public problems plaguing the world. This article mainly discusses the problems of chronic disease management of the elderly in China's current society from the aspects of economy, psychology and wisdom health. How to effectively manage chronic diseases and multimorbidity of the elderly.*

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1. Introduction

NCDs (Non communicable Chronic Diseases), the abbreviation is "chronic diseases", is a social disease, focusing on comprehensive prevention and control, and the key is governance. In 2019, China's elderly people (≥60 years old) with chronic diseases reached 180 million. Chronic diseases account for seven of the top ten reasons of death in the worldwide (Hufeng & Yang, 2023). So the rate of chronic diseases in older people is a major public health issue around the world. In China, with the aging people become more and more, the health condition of the old population has to give more concerned. According to <the data of the Study on the Status and the Mode of Comorbidity of Chronic diseases in the old people in China>, the trend of chronic diseases for the old people in China is very common, 86.23% of the elderly suffer from at least one chronic disease, like hypertension, arthritis or rheumatism, stomach or digestive system diseases are the top three chronic diseases. In addition, with the increase of age, the prevalence of chronic diseases in the elderly is gradually increased, and the rate of being diagnosed chronic diseases in women is higher than men. Comorbidity of chronic diseases is also more common in the elderly group, 65.14% of the elderly people who suffer from two or three and even more chronic diseases at the same time. Among them, the comorbidities of hypertension and arthritis or rheumatism are the most common (Li & Wang, 2021). It shows that co-existence of multiple illnesses has become a growing seriously problem in the elderly population.

2. The practice in Chinese society

Take my grandmother as an example, to find out that coronary heart disease in 2019 needs to take drugs for a long time, and in 2023 she was diagnosed with hypertension, it also has to long-term medication, and can't stop taking medicine, she has to take four kinds of drugs two to three times a day. She was required to go to the outpatient clinic to purchase drugs every month, and it will cost nearly 600 Yuan per month and some of the cost can be reimbursed by medical insurance. In addition, it is very inconvenient for the patient, they must go to hospital monthly, her doctor told her, she has to lost weight and keep a balance diet, she can't eat a lot salt or sugar, and also need to monitor her blood pressure and blood sugar regularly. It's too difficult for an old person to control her weight, she couldn't eat too much each meal. Besides, my grandmother is a very sensitive person, after that, she always feels upset, and think too much things. As for family members, we are distressed that grandma needs to suffer from the pain, but we can't reduce the pain which comes from the diseases, we only can encourage she to be positive and spend more time on accompanying with she, let she know some knowledges about coronary heart disease and hypertension and do not be afraid of its, we will not let she face alone. Later, she gradually accepted it.

To be honest, this is a large amount of expenditure since the comorbidity of chronic diseases, but it is not only my

grandmother, most of elderly people may have the possibility to face a series of chronic diseases, and they need to face the pressure brought by many aspects such as body, mind and economy. In order to solve these problems, the government and relevant departments need to take chronic diseases with high incidence rates as the main entry point, focus on the physical health of the aging people, and adopt response measures centered on primary care to improve effectively manage the health service demands and reduce medical economic burdens brought by comorbidity (Fu & Sha, 2022). Besides, we also have to pay attention to their psychological burden and emotion, encourage them to keep a positive attitude, right mindset and enough patience to face their diseases.

3. Economic Burden of Chronic Patients

Chronic diseases often require long-term or even lifelong treatment and management, including drugs, medical equipment, regular examinations, and possible surgery, resulting in ongoing direct medical costs for the patient's family. For example, according to authoritative estimates from the Global Burden of Diseases, Injuries, and Risk Factors Study, the burden of disease caused by chronic diseases in 2021 will account for 60% of the total global burden of disease, already far exceeding that caused by infectious diseases and other injuries (Zhang & Li, 2021). So the government plans to gradually realize the direct settlement of outpatient fees across provinces, and include more chronic disease drugs can be purchased at one time. In addition, the payment ratio within the scope of the policy will start from 50%, appropriately tilted toward retirees (State Council, 2022). This policy aims to reduce the burden of medication for the elderly and it is convenient to seek medical treatment in other cities.

Though improve the basic medical insurance policy and expand the range of reimbursement for chronic disease drugs for the elderly to ensure that they can obtain necessary medical services. These measures include reimbursement of general outpatient expenses for chronic and frequently-occurring diseases and common diseases, as well as special attention to patients who has chronic diseases such as hypertension and diabetes to ensure that their medical expenses are properly reimbursed.

In addition, the National Medical Insurance Bureau also put forward a response to the suggestion of moderate reduction or free charge of medical expenses for the elderly over the age of 60, pointing out that the state has given proper care to the elderly, and reflected the tilt and care for the elderly in the policy Settings of medical insurance financing and treatment (Li & Wang, 2021). At the same time, the country is promoting a long-term care insurance system(trial) to explore the policy system of long-term care insurance (National Healthcare Security Administration, 2024). It's a very useful policy for the chronic diseases patients' family or disabled people, it can not only reduce their burden of economy, since if we find a caregiver to look after them have to spend a large amount of money which is far more than their pensions, but also can provide more time to their family members to do their own things.

At the local level, such as Anhui province, the medical insurance bureau has also introduced relevant policies to clarify the medical insurance treatment that patients with chronic diseases can be covered, including the reimbursement policy for special diseases in the outpatient department, and the implementation of measures (Anhui Provincial Medical Security Bureau，2021) such as the "large prescription " of chronic disease reimbursement to facilitate patients with chronic diseases to see a doctor and get medicine.

In April 2021, the "Guiding Opinions on Establishing and Improving the Mutual Assistance Mechanism for Employees' Basic Medical Insurance Outpatient Service" proposed the establishment of the mutual assistance mechanism for employees' basic medical insurance outpatient service: The State Council proposed the establishment and improvement of the mutual assistance mechanism for employees' basic medical insurance outpatient service, and included more outpatient expenses into the medical insurance reimbursement, including chronic diseases such as hypertension, heart disease and diabetes (State Council, 2021). Include the outpatient costs of chronic diseases in the overall planning: Steadily include some of the outpatient costs of chronic diseases, frequently-occurring diseases and common diseases, which are hurtful to our health and bear too much costs, into the overall planning fund.

4. Mental Health of Chronic Patients

The mental health of elderly people with chronic diseases also deserves our attention, many elderly people worry that their illness will burden their families and children or the quality of life is not as good as before, and feel depressed. <China's chronic Disease Prevention and Control Work Plan in 2012 to 2015> pointed out that there

are nearly 260 million people diagnosed with different kinds of chronic diseases in China. The death caused by chronic diseases occupied to 85% of the whole reason of death in China and the disease burden accounts for 70% of all the disease burden. Chronic diseases have already become a major public health problem in domestic (CDC, 2012). Because of its long term and high disability rate, chronic diseases will not only lead to physical health damage, daily activity ability decline, but also greatly increase the incidence of mental diseases (Han & Jizhi, 2016). Secondly, in terms of treatment, patients with chronic diseases take a variety of drugs all year round, which may contain β-blockers and sulfonamides, and the adverse reactions of drugs can lead to mental health problems (Xiaodong & Liming, 2008). Moreover, chronic disease comorbid patients due to the long-term treatment of a variety of chronic diseases, high medical costs, care pressure, economic and care pressure seriously affect the mental health. Finally, elderly chronic disease comorbidities generally have a poor cognition level of diseases, and their lack of understanding of the disease increases their panic, which leads to the appearance of anxiety symptoms (Wang, 2023). These kinds of factors increase the psychological burden of the elderly.

Studies have shown that physical illness in the elderly is often accompanied by mental symptoms (State Council, 2021). In fact, psychological status has a significant negative effect on physical health (State Council, 2021). Paying attention to psychological changes can help the detection of physical diseases in early stage (Chong & Qi, 2014), and improving mental health level is very important for the rehabilitation of diseases. Chronic disease and multimorbidity are one of the most important reasons of depression for the old people. Among the elderly in China, the rate of chronic diseases among urban residents was more than rural residents, it's occupied 87.0%. Chronic diseases have a large potential to bring some terrible impact in the life of these patients, the diseases can reduce the quality of life and bring some negative emotions (Yuan & Wang, 2023). In the China Health and Retirement Longitudinal Study, and found that in elderly people there are 12 kinds of chronic diseases including hypertension, diabetes, high blood lipids, cancer, chronic lung disease, liver disease, heart disease, stroke, kidney disease, arthritis or rheumatism, asthma, digestive disease, and multimorbidity were obviously connected with gloom. Additional research indicated that among various chronic conditions, individuals with asthma exhibited the largest prevalence of depression at 57.68%, while those with hypertension showed the lowest rate at 37.21% (CHARLS & Jiang, 2020). In a longitudinal study examining the effects of multiple chronic diseases have lots of changes in depressive symptoms among old people in Hong Kong, researchers utilized multiple regression models. Although existing studies have established a connection between chronic illnesses and depressive symptoms in elderly populations, there remains a lack of comprehensive research exploring the underlying mechanisms driving this relationship (Yuan & Wang, 2023). Therefore, we should pay more attention to the association between depression and chronic diseases and the solutions in the future.

To relieve the psychological stress , it can be improved by promoting physical exercise and social support. For example, the provision of health screening and assessment services, early detection of chronic disease risk factors and early symptoms, and effective interventions. At the same time, reinforce the education and publicity of healthy lifestyle, improve public awareness of healthy lifestyle, and guide people to develop healthy living habits. In addition, the society should create and enhance the mental health service system for the elderly, and provide professional psychological counseling and treatment services for the old generation. The community can enhance their sense of social participation by holding social activities and popularizing mental health knowledge of the elderly.

Strengthening functional maintenance for the elderly, developing mental health counseling services for the old people, improving the ability of medical treatment for the old people to co-treat multiple diseases, strengthening home medical services for the elderly, strengthening medication security for the elderly, and strengthening old-age friendly medical services. And vigorously develop elderly care and rehabilitation services (State Council, 2022). These measures aim to ensure their mental health and maintain the high quality of life for the old people through early screening, intervention, triage guidance and provision of psychological care services.

5. Smarting Aging Management of Chronic Patients

With the development of technology, technology tools have provided the possibility of high-quality care at home for older people with chronic diseases. No more frequently goes to the hospital for tests. The life of the elderly are being revolutionized by technology at an unprecedented rate. "Aging technology" is a term that combines gerontology and technology to describe the interdisciplinary field of "design technology" that builds a healthy, comfortable, and safe living environment for older adults.

"Smart home" refers to a special kind of home or residence. With sensors and actuators, integrated into the

infrastructure of the home, it aims to monitor the resident's environment and improve his or her living quality. Smart homes can enable older people to live independently at home longer and safer, reduce their dependence on caregivers, or enable caregivers to provide better care for older people (Li & Stroulia, 2016). These technologies are used to improve quality of life and help older people life safely at home. smart home robots can be used into the management of chronic diseases of the elderly will become more and more extensive application, they can provide a series of health management services. Including online consultation, intelligent robots can connect doctors and patients through video call functions to achieve remote medical consultation. For example, the AI Medical Assistant (AMA) provided by Tencent Cloud can provide medical process guidance, quick search for doctors, intelligent guidance departments, disease consultation, medication guidance and other services, and answer problems in the whole process of medical treatment for patients 7*24 hours. Smart robots can help elderly people buy the medicines what they need. For example, the world's first human-shaped robot intelligent pharmacy solution jointly created by Meituan Pharmaceutical and GalaxyBot can achieve 24-hour purchasing and pick-up tasks, and is expected to cooperate with chain pharmacies in the future to provide a more convenient drug buying experience. Intelligent robots can be associated with different kinds of health monitoring tools, such as blood pressure monitors, blood glucose meters and so on, to track the health status of the elderly in real time. Some robots are also capable of non-contact vital signs such as Non-intrusive night breathing monitors are already being used to observe the breathing patterns of patients with chronic obstructive pulmonary disease, helping medical teams adjust treatment plans in time to prevent the disease from getting worse. At the same time, the monitoring system integrating a variety of neural network technologies has also been applied to the diagnosis and management of sleep breathing disorders, reducing the work burden of medical personnel and ensuring the safety of patients (Hu & Qi, 2024). In emergency situations, such as a sudden illness or fall of the elderly, intelligent robots can call the emergency number 120 in time and accurately describe the patient's situation so that medical staff can quickly make decesions and take actions. For example, Huawei intelligent AI-assisted health sensors in the whole house can detect falls and bed falls, and notify emergency contacts in time by making phone calls, sending SMS messages, and smart life app.

At the same time, it can also provide emotional companionship and fun of life for the elderly. Intelligent robots can also accompany the elderly to chat, play chess, exercise, play music, video calls and so on, to increase the fun of life. For example, the elderly intelligent companion products launched by Midea/Panasonic and other companies provide more options for the spiritual companionship of the elderly through technical ways, in order to reduce the concern that children cannot always accompany the elderly due to their busy work. In the future, we may also develop chatbots for depression diagnosis and recovery, analyzing patients based on their messages, audio, video and picture (robot-based data) recordings. Each of these techniques are used to collect characteristics of the old people and analyze those characteristics using various classification models, categorizing the individual as either depressed or safe, and notifying the patient's and their family member's phone immediately if the person is determined to be depressed. A professional or clinician can remotely analyze the samples, like voice notes, messages, audio, video, and pictures (robot-based data) to give treatment advice and monitor their condition (Rajawat & Rawat, 2021). In this way, the disease can be effectively controlled in the first time, and the optimal treatment and recovery period can be avoided because of late detection.

In addition, AI can also be used in daily life management, such as eating habits, exercise habits, smoking and other behavior management, poor lifestyle may lead to chronic diseases and related treatment failure. WHO estimates that by 2030, 30% of global deaths will be caused by diseases caused by improper lifestyle, and artificial intelligence can be used to optimize lifestyle and delay the process of chronic diseases. For patients with diabetes, on the basis of recording daily diet and combining the blood sugar weight and exercise at that time, the blood sugar status of the next day is calculated, and their eating habits are formulated and appropriate exercise recommendations are given (Xuefen & Hongyan, 2023). Integrate massive literature, clinical guidelines, professional knowledge, integrate related chronic database, and match targeted health education for patients according to their characteristics and daily needs from the knowledge base, so as to timely solve problems related to diseases encountered in life.

6. Conclusion

In a word, we are expected to give more concerned to the Comorbidity of chronic diseases, through related insurance or regulated to reduce their economic burden. Besides, paying attention to their emotional and let them always feel happiness. Maybe in the future we also can use many kinds of advanced technologies to relieve the pressure of chronic diseases management.

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