



FACTORS RELATED TO SUCCESSFUL AGING AMONG COMMUNITY
DWELLING THE ELDERLY IN WENZHOU, CHINA

CHENYU GU

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR MASTER DEGREE OF NURSING SCIENCE
(INTERNATIONAL PROGRAM)
IN ADULT NURSING PATHWAY
FACULTY OF NURSING
BURAPHA UNIVERSITY

2022

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ลิขสิทธิ์เป็นของมหาวิทยาลัยบูรพา

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KEYWORDS: SUCCESSFUL AGING, THE ELDERLY, CHINA

CHENYU GU : FACTORS RELATED TO SUCCESSFUL AGING AMONG COMMUNITY DWELLING THE ELDERLY IN WENZHOU, CHINA .
ADVISORY COMMITTEE: PORNCHAI JULLAMATE, Ph.D. 2022.

The aging of population is becoming more and more serious in the world, which is the same in China. Successful aging is a popular issue to deal with population aging at present, but there is not much research in China. The objectives of this study was to study the level of successful aging of the elderly in the community in Wenzhou, China, and to study the association between activities of daily living, life satisfaction, social support, income of elderly, self-efficacy, and successful aging of the elderly.

This study was conducted from July 1th to August 20th, 2021 in Wenzhou, China (Lucheng District, Ouhai District, Longwan District, Dongtou District) among community dwelling, used convenient sampling technology to select samples, a total of 83 samples meeting the requirements were investigated. The study used a questionnaire survey. Used the demographic questionnaire, the successful aging scale, the barthel index rating scale of ADL, satisfaction with life scale (SWLS), social support rating scale and the general self-efficacy scale (GSES) investigated the variables. Descriptive statistics and correlation analysis were used to describe the sample and test for relevance.

The results showed that 53.0% of the participants had a high level of successful aging and 43.4% had a moderate level of successful aging with the mean score was 56.76 ($SD = 12.31$). Correlation results between variables showed that income of elderly ($r = .73; p < .001$), self-efficacy ($r = .72; p < .001$) were highly correlated with successful aging, while activities of daily living ($r = .67; p < .001$), life satisfaction ($r = .63; p < .001$), social support ($r = .36; p < .001$) were moderately correlated with successful aging.

It was concluded that there were significant positive correlation between activities of daily living, life satisfaction, social support, income of elderly, self-

efficacy and successful aging among community dwelling the elderly in Wenzhou, China. Therefore, relevant professionals can formulate more effective health education and intervention measures based on the above factors, so as to improve the level of successful aging of the elderly.



ACKNOWLEDGEMENTS

Time flies. In the past two years as a graduate student, my professional knowledge has been further enriched and solid, and my scientific research ability has also been greatly exercised and improved. Here, I would like to express my sincere thanks to all those who have helped me.

First of all, I would like to thank my major advisor, Assistant Professor Dr. Pornchai Jullamate. Dr. Pornchai gave good suggestions on the direction of my project and timely guidance on the problems encountered in the research process, so that I can always have the motivation to move forward towards my goal when I encounter difficulties. I would also like to thank Assistant Professor Dr. Jinjutha Chaisena Dallas and Associate Professor Dr. Chanandchidadussadee Toonsiri for their contributions in this study. I greatly appreciate also goes to the course director (International Program) of Master of Nursing Sciences, Associate Professor Dr. Chintana Wacharasin and Dean, Faculty of Nursing, Burapha University for their constant encouragement and timely administrative support. Also, many thanks to international affairs staff, Ms. Rungnapa Yodchot, she is very responsible and effective communication, which has provided great convenience for my study and scientific research. I would like to express my most sincere thanks to the Faculty of Nursing of Wenzhou Medical University for providing great help and support for my scientific research and study.

Finally, I would like to thank my family for giving me the warmest and most powerful support, so that I can study and research without worry.

Here, I would like to extend my most sincere thanks to everyone who has helped me!

Chenyu Gu

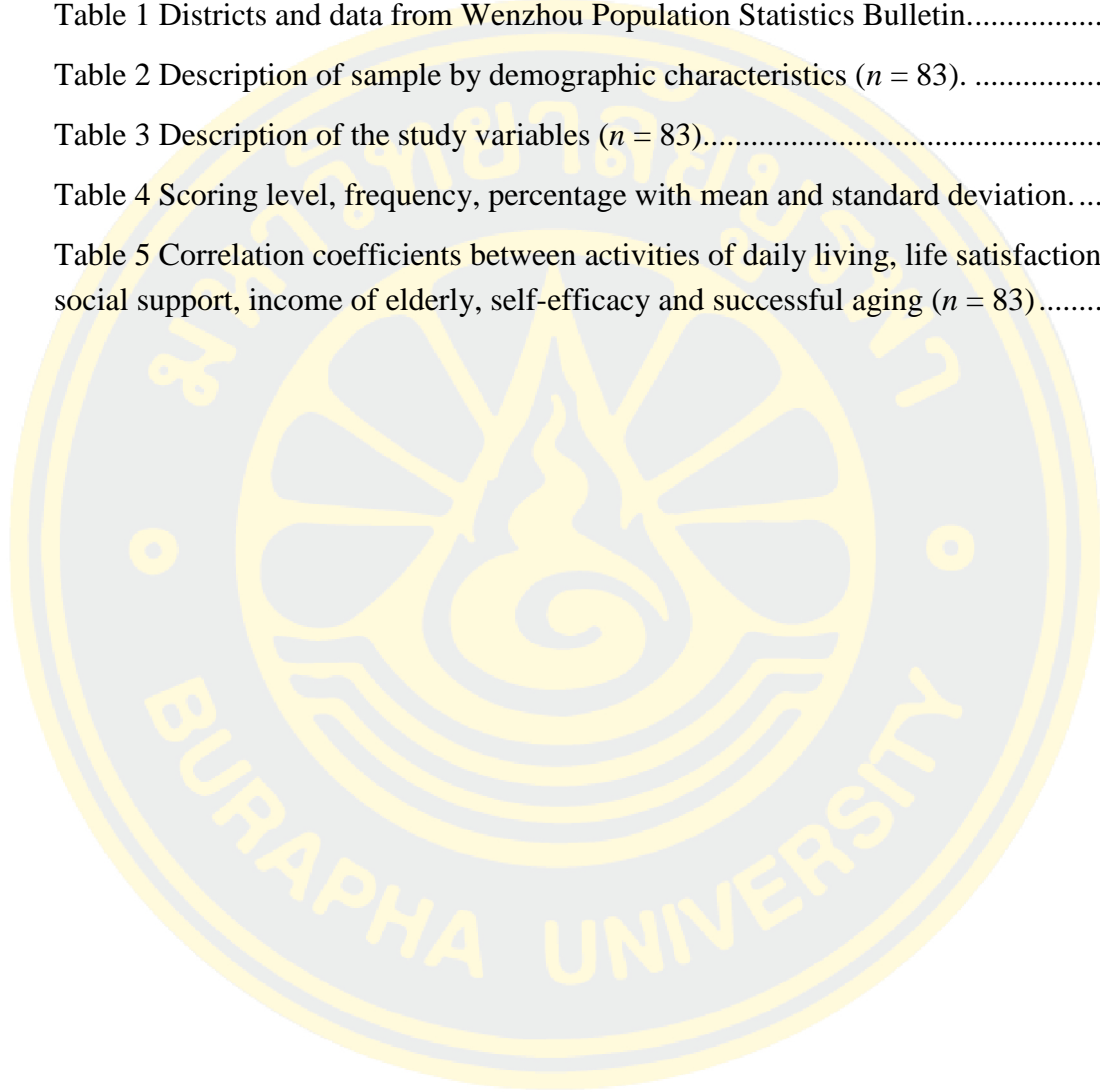
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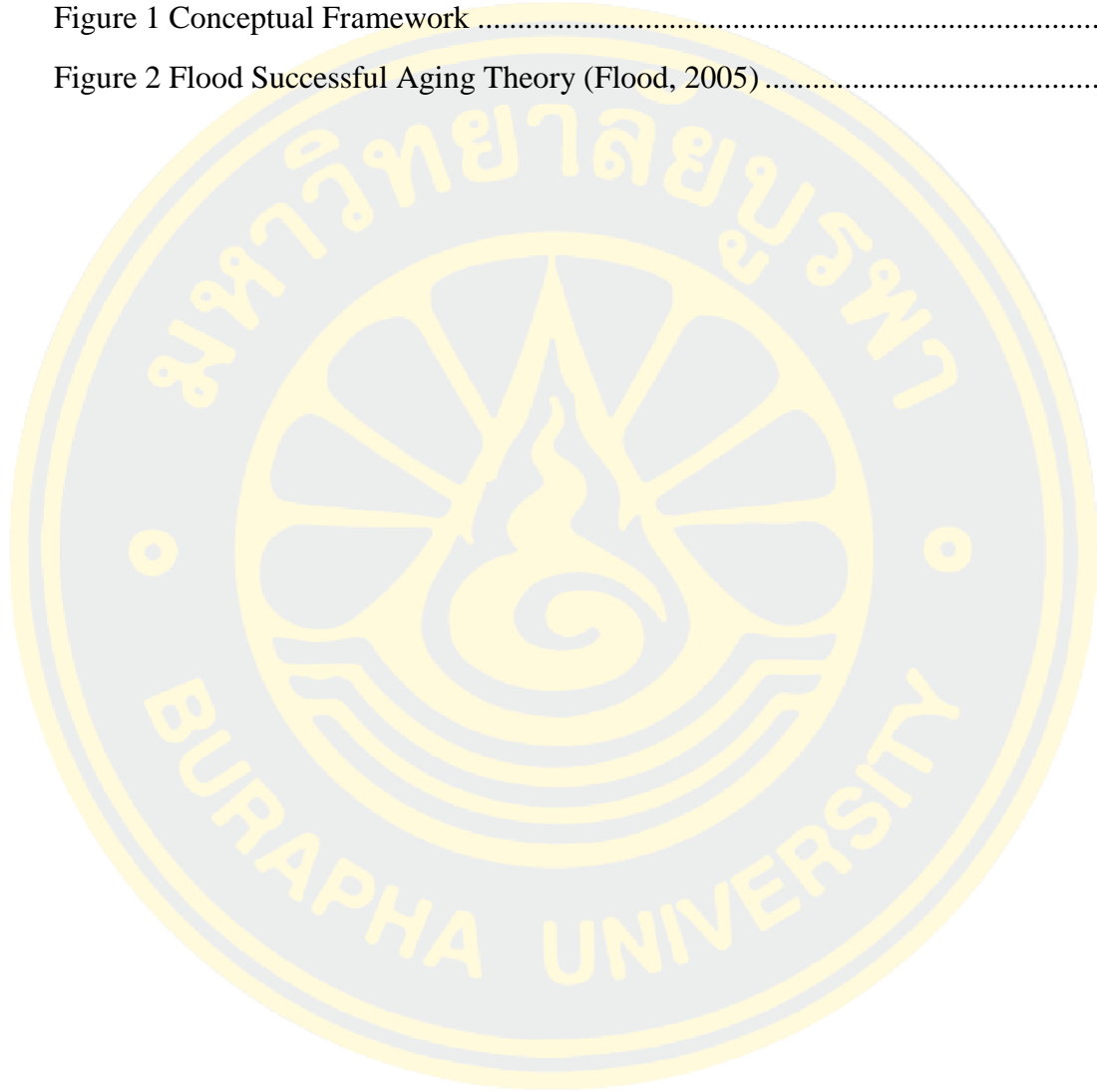
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CHAPTER 1

INTRODUCTION

Statement and significance of the problems

With the extension of life expectancy and the decline of birth population, the number of the elderly population is increasing, and the proportion of the elderly population in the total population is getting higher and higher, so the aging of the social population appears. According to the World Health Organization, the proportion of people aged 60 and over is more than 10% (or the proportion of people aged 65 and over is more than 7%), which means that the population structure is aging (Kinsella, Kevin, & Velkoff, 2001). Since the 1970s, there has been a trend of aging population in most countries all over the world. The proportion of the global elderly population is expected to increase from 10% in 1998 to 15% in 2025. In developing countries, this growth rate is the largest and the fastest. Population aging affects all aspects of society, such as economy, education, employment and health care, and has become a global problem that threatens the development of various countries (Guangzong, 2016).

China's aging population began in the sixties and seventies of the 20th century, and reached the international standard in 2000 and entered an aging society (Council, 2002). According to the latest statistics, the number of people aged 65 and over in China was 176.03 million in 2019, an increase of 9.45 million over 2018, accounting for 12.6% (Zeping, Chai, & Zhe, 2020).

The development of aging in China has 4 main characteristics: 1. The speed of old age is fast. 2. The population base is large. 3. The development is not balanced. 4. Population grow old before getting rich. Judging from the development trend, the speed and scale of China's aging population is unprecedented. China will enter a deep aging society accounting for more than 14% in 2022 and a super aging society accounting for more than 20% around 2033. With declining fertility and longer life expectancy, aging is a common global phenomenon, but China is aging at an unprecedented rate due to the long-term implementation of family planning (Zeping et al., 2020). Compared with developed countries, China's aging population also shows

obvious differences between urban and rural areas. On the one hand, according to the national sample survey of 1% of the population (2015), the proportion of elderly people aged 60 and above in rural areas (18.17%) is higher than that in urban areas (14.20%). And the proportion of elderly people aged 65 and above in rural areas (12.03%) is also higher than that in urban areas (9.16%), thus it can be seen that the level of aging population in rural areas is significantly higher than that in urban areas (Yang Qiao, 2018).

From the international comparison of the degree of aging and the level of economic development, the per capita GDP of the United States, Japan, South Korea and China reached \$10,000 in 1978, 1981, 1994 and 2019, respectively. At that time, the proportion of people aged 65 and above in each country was 11.2%, 9.2%, 5.8% and 12.6%. The proportion of people aged 65 and over in the United States, Japan, South Korea and China reached 12.6% in 1990, 1992, 2015 and 2019, respectively, when the per capita GDP of each country was \$24,000, \$30,000, \$27,000 and \$10,000 respectively. It can be seen that the problem of Chinese people getting old before they get rich is prominent (Zeping et al., 2020).

At present, with the rapid development of China's aging population and the rapid expansion of the elderly population, the old-age security system is facing great challenges, and the economic basis, policies, facilities conditions to deal with population aging are still incomplete. With the intensification of the aging of the population, the shortage of medical and health care resources, old-age security and social support are facing double pressure (Shirong, 2019). According to the actual situation in China, at present, China is based on home-based pension, community pension as the support, institutional pension as the supplement, the combination of medical and nursing care of the old-age service system, in order to reduce the pressure of the aging population on individuals, families and society. However, with the acceleration of the aging process in China, the development of old-age care services can't keep up with the speed of the aging process, and the aging problem has become the focus of social attention.

This study was conducted in Wenzhou, an important commercial city and regional central city along the southeast coast of China, as well as a large city of the elderly population. By the end of 2018, the elderly population in Wenzhou had

reached 1.51 million. The elderly population in Wenzhou has the following characteristics: 1. The number of the elderly population is increasing year by year, and the proportion of the elderly population is increasing too. 2. The old aging of the elderly population is gradually emerging, as shown in the results of the latest (sixth) population census, which showed that the elderly aged 80 and above accounted for 15.16% of the total elderly population in Wenzhou, and the proportion of the elderly population aged 70 to 79 accounted for 33.83% of the total elderly population, also accounting for 51.01% of the population aged 60 and 69, the elderly population gradually tended to be old aging. 3. On the whole, at present, the health status of the elderly population in Wenzhou is good, nearly 80% of the elderly population is basically healthy and the health status of the elderly in urban areas is better than that in rural areas. 4. Among the elderly, more than 1/3 of the elderly live alone because their children go out to work or study. The number of widowed elderly people is close to 1/4 (Kaifu, 2015).

Wenzhou has been improving the medical insurance and medical assistance system in recent years. The elderly basically has reached the basic medical insurance system. They are also granted the elderly allowance for providing them the pension benefits of urban and rural residents over the age of 80 and the elderly registered residence in Wenzhou at the age of 90. The standard payment of the elderly allowance is: 50 yuan / month for 80-89 years old, 100 yuan / month for 90-99 years old, and no less than 500 yuan / month for 100 years old and above. This has alleviated the economic pressure of the elderly to a certain extent. In terms of daily life, the elderly in Wenzhou pay attention to physical exercise and often participate in physical activities. For example, we often see the elderly exercising in the park and square in the morning and evening, especially the "square dance" is very popular with the elderly aged 60-70. In a word, the aging population of Wenzhou shows the characteristics of large base, rapid growth, old aging, empty nest and so on, and the life care, spiritual and cultural needs of the elderly are increasing day by day. The Wenzhou government is also actively responding to the challenge of population aging, hoping to create an age-friendly society in Wenzhou and help the elderly better spend their old age.

Successful aging is an internationally recognized and comprehensive strategy to deal with aging. Successful aging means that the elderly seldom decline in physical function with age, maintain a good physical and mental balance, participate in society under the positive influence of psychological and social factors, and be able to experience psychological and spiritual connectivity and perceive the purpose and significance of the whole process of life at the stage of old age (Flood, 2005). For the life of the elderly in their later years, we should not only pay attention to longevity, but also pay attention to whether it is a healthy longevity, as well as the quality of life in old age, which not only refers to how many years the elderly has lived, what is more important is whether the elderly have achieved "successful aging". Helping the elderly to achieve successful aging can not only reduce social medical costs and social pension burden, but also help the elderly improve their quality of life and well-being (Pei. et al., 2019). Since the successful theory of aging was put forward, there has been a wave of research in the field of gerontology. Compared with foreign countries, the research on successful aging in China starts later and has less content. The purpose of this project is to study the factors related to the successful aging of the elderly in Wenzhou community. According to the actual situation of Wenzhou, consult the literature related to successful aging, combined with the successful aging model, finally determined the activities of daily living (ADL), life satisfaction, social support, income of elderly, self-efficacy as research factors, and clarified the specific relationship between them and successful aging. In order to effectively promoted the successful aging of the elderly in Wenzhou.

Activities of daily living (ADL) is an important index to measure the physical activity ability of the elderly, which mainly reflects the impact of dysfunction on daily activities. The decrease of ADL will reduce the range of activities of the elderly, reduce their contact with the outside world, and then reduce the amount of information and the active activity of the brain (Jinfeng., Mingwang., Chenghan., & Kui, 2020). Thus, affecting the physical and mental health of the elderly. Research showed that the higher the ability of activities of daily life, the greater the possibility of successful aging, whether in physical, psychological or social activities have a positive impact (Yongfeng, 2011). ADL is an index that

objectively reflects the basic self-care ability and health status of the elderly (Choi et al., 2013), it can predict successful aging (Jinfeng. et al., 2020).

Life satisfaction is one of the important psychological parameters of individual quality of life in social life, and it is a social psychological variable widely used in gerontology research in many countries to reflect the quality of life of the elderly. The results of a cross-sectional survey of 1516 elderly people in the community in Shanghai, China showed that the life satisfaction index of the elderly with successful aging was higher than that of the normal elderly and those with mild cognitive impairment (Mingying, Aibao, Jiaqiang, Ying, & Weiqiang, 2012). Other studies have shown that education, lifelong learning activities, life satisfaction and well-being are positively correlated with successful aging. Life satisfaction is an important aspect of the psychological function of the elderly, and is considered to be an important indicator of successful aging (Baltes P, 1990b).

Social support can be regarded as the help and support of individuals by various social relations based on a certain range of social network structure, including support from family, friends, and others. Social support helps to reduce loneliness and isolation among the elderly by promoting effective responses (Moonesar, Sammy, Nunes, & Paul, 2016). Social support from different sources is the basis of the happy life of the elderly, especially the support from the family, which is of great significance to improve the life satisfaction of the elderly. Some studies have shown that in China, the better the social support, the better the successful aging of the elderly in the community (Li, 2019). Similarly, a study in South Korea showed that family support is a significant factor in successful aging (Han S, 2015).

In a study in Hong Kong, China, it was found that the economic situation was a predictor of successful aging (Cheung & Wu, 2012). Similarly, a study in Guangzhou, China, showed that elderly people with a monthly income of more than 3,000 yuan are more likely to achieve successful aging (Pei. et al., 2019). The higher the income of the elderly, the better the conditions to get better living resources, enjoy high-quality medical resources and care resources for the elderly agencies. Similarly, a good economic income can increase the self-esteem of the elderly, thus promoting successful aging (Wu et al., 2017).

Self-efficacy, first put forward by American psychologist Bandura, is the core concept in Bandura's social cognitive theory (Bandura, 1977). Self-efficacy refers to an individual's perception or belief that he or she can take adaptive behavior in the face of challenges in the environment. A person who believes that he can handle all kinds of things will be more active and active in life. Therefore, the elderly with a sense of self-efficacy can confidently deal with all kinds of pressures and challenges in their lives. Studies have shown that self-efficacy has the value of predicting successful aging (Carver & Buchanan, 2016). The higher the sense of self-efficacy of the elderly, the more conducive to promoting their successful aging (Kang. et al., 2018).

With the continuous extension of life expectancy and the gradual improvement of the health status of the elderly, successful aging is a very important topic in the current research. Exploring the influencing factors of successful aging is helpful to slow down the negative impact of population aging and is an effective way to improve the quality of life of the elderly (Chunbo., Xinkai., & Mingyuan, 2000).

A correct understanding of the successful aging population is conducive to a comprehensive understanding of the characteristics of the aging group, and correct intervention to the elderly population, improve the level of body function of the elderly population, and increase the proportion of successful elderly population (Yanfu, 2007), so as to reduce the negative impact of population aging on individuals, families and society.

Research questions

1. What is the level of successful aging among the elderly living in Wenzhou, China?
2. To what extent activities of daily living (ADL), life satisfaction, social support, income of the elderly, and self-efficacy correlate to successful aging among community dwelling the elderly in Wenzhou, China?

Research objectives

1. To study level of successful aging of the elderly in the community in Wenzhou, China.

2. To study the association between activities of daily living, life satisfaction, social support, income of elderly, self-efficacy, and successful aging of the elderly.

Research hypothesis

1. The activities of daily living positively correlate with successful aging of the elderly.
2. Life satisfaction positively correlate with successful aging of the elderly.
3. Social support positively correlate with successful aging of the elderly.
4. Income of elderly positively correlate with successful aging of the elderly.
5. Self-efficacy positively correlate with successful aging of the elderly.

Scope of the research

This research aimed to study the level of successful aging and factors related to the successful aging of 82 elderly in the community of Wenzhou. The independent variables were the ADL, life satisfaction, social support, income of elderly, self-efficacy and the dependent variable was successful aging. Data were collected during July to August 2021.

Conceptual framework

The conceptual framework of this study used the method of literature review, in which ADL, life satisfaction, social support, income of elderly and self-efficacy was strongly related to the successful aging of the elderly. The choice of variables also conformed to the Flood successful aging theory (Flood, 2005).

Selected the activities of daily living (ADL) as the independent variable. The level of ADL in the elderly is a direct reflection of their physical health. With the aging of the body, the elderly makes adaptive responses through conscious perception and choice, which is reflected in the different levels of ADL. Indicators of functional performance mechanisms are output responses of the health promotion activities, physical health, and physical mobility. The ADL is consistent with the functional performance mechanisms in the flood successful aging theory.

Gerotranscendence in the Flood Successful Aging Theory refer to a change of meta-perspective, accompanied by the aging process from the perspective of materialism and rationalism to a more mature perspective of existence. It includes reducing death anxiety, participating in meaningful activities, changing relationships, self-acceptance and wisdom. The factor of life satisfaction also came from the Gerotranscendence dimension. When the elderly is satisfied with their living conditions and there are no problems in their daily life, they will be more willing to actively participate in meaningful activities, reduce their fear and anxiety about death, have a higher degree of self-acceptance, and are more likely to achieve successful aging.

The spirituality in the Flood Successful Aging Theory refers to personal views and behaviors to express the sense of connection with superego things, or some feelings, thoughts, experiences and behaviors generated in the process of seeking superego. Effective social support can help the elderly get more spiritual support and solve the difficulties they encounter in the process of successful aging.

The income of elderly directly affects the realization of their physiological and psychological needs, especially in physiology. For example, economic expenses are needed for daily life and disease prevention and treatment. In functional performance mechanisms, health promotion activities, maintaining physical health and physical activities all need financial support.

The intrapsychic factors refer to the inherent and lasting characteristics of a person's personality, which may enhance or weaken a person's ability to adapt to changes and solve problems. Perceived self-efficacy refers to the elderly's perception or belief that he or she can take adaptive behavior in the face of challenges in the environment. It is closely related to the individual's ability to adapt to change and solve problems.

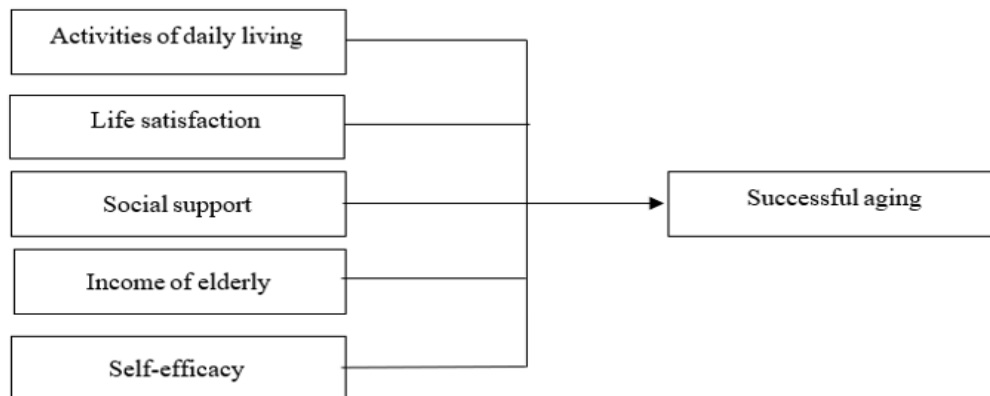


Figure 1 Conceptual Framework

Operational definition

Successful aging means an older adult's perception to maintain basic physical function, physical and mental health, and actively participate in social activities. Successful aging will be measured by the Chinese version of the successful Aging scale revised by Cheng Yanling (Yanling, 2014).

Activities of daily living refers to the necessary activities that the elderly carries out every day in order to meet the needs of daily life, including urine and feces control, eating, dressing, bathing, grooming, toilet, bed and chair transfer, flat walking, going up and down the stairs. ADL will be measured using Chinese version of Barthel Index.

Life satisfaction refers to the overall subjective evaluation of the elderly's life according to their own living conditions. Life satisfaction will be measured by using Chinese version of Satisfaction with Life Scale (SWLS) (Xiong & Xu, 2009).

Social support refers to the financial, emotional and spiritual support provided to the elderly by significant persons including their spouses, children, neighbors, colleagues. Social support will be measured by Chinese version of Social Support Rating Scale (Shuiyuan, 1994).

Income of elderly means the monthly economic income of the elderly receiving from the support of their children or relatives, personal labor income, and government pensions.

Self-efficacy refers to the confidence to deal with the difficulties and setbacks encountered in their daily life. The Chinese version of the General self-

efficacy scale (General Self-Efficacy Scale, GSES) will be used in this research.



CHAPTER 2

LITERATURE REVIEW

In this chapter, relevant information and study findings were reviewed. This section is divided into four main parts as follows:

1. Overview about the elderly in Wenzhou.
2. Concepts of successful aging.
 - 2.1 Definition of successful aging.
 - 2.2 Theory of successful aging.
 - 2.3 Components of successful aging.
 - 2.4 Measurement of successful aging.
3. Factors related to successful aging among community dwelling the elderly living in Wenzhou, China.
 - 3.1 ADL
 - 3.2 Life satisfaction
 - 3.3 Social support
 - 3.4 Income of the elderly
 - 3.5 Self-efficacy
4. Conclusion

Overview about the elderly in Wenzhou

The aging of China's population is accelerating, and it is expected that China will enter a deeply aging society in 2022.

The number of people aged 65 and over in 2019 was 176.03 million, an increase of 9.45 million over 2018, accounting for 12.6%, or 0.7% more than 2018 (Zhe, 2020).

It is expected that by 2030, China will become the oldest country in the world, with the proportion of the elderly surpassing that of Japan. By 2050, there will be as many as 483 million elderly people in China (Sciences, 2010). With the increasing pressure of providing for the elderly, the problem of providing for the elderly has become one of the focuses of today's economic and social attention.

In 1995, Wenzhou officially entered the aging society (4 years earlier than China and 8 years later than Zhejiang Province), and the trend of population aging is becoming more and more obvious (Zhu, Sun, & Feng, 2013).

According to the data released by the Wenzhou Office of Aging, the elderly population in Wenzhou still maintains a trend of rapid growth. At the end of 2008, the city's elderly population was 1.0361 million, accounting for 13.42% of the total population. By the end of 2016, the number reached 1.396 million, accounting for 16.99% of the total population. Over the past eight years, the number of elderly people has increased by 359000, with an average annual growth rate of 4.3%. According to the distribution area, the degree of aging in Lucheng and Ouhai is higher than that in the whole city, both of which are more than 19%. Not only that, the rapid development trend of aging is another feature of the elderly population in Wenzhou.

At the end of 2008, the number of elderly people aged 80 and above in the city was 194300, accounting for 18.75 percent of the total elderly population. At the end of 2016, the number reached 219100, accounting for 15.7 percent of the city's total elderly population. In the past 8 years, the number of the elderly has increased by 24800, and the aging of the population is remarkable. At the same time, the number of centenarians in Wenzhou ranks first in Zhejiang Province, now Wenzhou is known as the hometown of longevity.

Generally speaking, the aging population in Wenzhou is characterized by large base, rapid growth, empty nest and so on, the life care, spiritual and cultural needs of the elderly are increasing day by day.

Concept of successful aging

Definition of successful aging

There is no clear and unified definition of successful aging in the world, and its concept was first put forward by Havighurst in 1961 (Havighurst, 1961), he defined successful aging as longevity, happiness, and life satisfaction. At present, the more influential concept was put forward by Rowe and Kahn in 1987 (Rowe & Kahn, 1987b). They defined successful aging from 3 aspects: 1. Avoid disease and loss of function. 2. Maintain physical and cognitive function. 3. Actively participate in social activities. These three requirements correspond to physical health, cognitive function,

and social participation. At present, most of the studies in the field of successful aging are based on this concept. Crowther (Crowther, Parker, Achenbaum, Larimore, & Koenig, 2002) put forward the fourth important factor: positive spirituality on the basis of Rowe and Kahn. McLaughlin (McLaughlin, Connell, Heeringa, Li, & Roberts, 2010) believed that successful aging means no serious disability, normal ability of daily life and physical function, normal or better cognitive function, and positive attitude towards life. In 1990, German psychologist Baltes first put forward the classical SA theory-SOC model, which defines SA as when the elderly are faced with the decrease of reserve ability and the increase of loss caused by aging, they adopt the three strategies of selection, compensation and optimization to manage the limited resources, so as to maximize the positive results and minimize the negative results (Baltes P, 1990a). Pruchno (Pruchno, Wilson-Genderson, & Cartwright, 2010) put forward the two-factor concept of successful aging, which includes both subjective and objective aspects, in which the subjective is the elderly's own evaluation of their own aging, and the objective is the researchers' use of tools to evaluate the physical and mental status of the elderly.

In a word, at present, there is no unified definition of successful aging, but it is certain that its definition has gradually developed from a single dimension to a multi-dimension. Successful aging includes health, longevity and quality of life, as well as social participation. Successful aging refers to the establishment of a balanced and benign interaction between the elderly individual and the outside world, to achieve the value of individual life, and in line with the development of the times.

Theory of successful aging

Rowe and Kahn's model of successful aging.

Rowe and Kahn's model divided the elderly into three types: one is the impaired, which is mostly suffering from disease, lack of physiological function or poor cognitive function, the second is the normal elderly, which is between the successful and the impaired elderly and the third is the successful elderly. The successful elderly need to meet the following three requirements at the same time, which are also the three components of the interaction and interaction of the model, namely, avoiding disease and loss of function, maintaining physical and cognitive

function, and actively participating in social activities. These three requirements correspond to physical health, cognitive function and social participation respectively, so the model can comprehensively define whether the elderly are aging successfully or not (Rowe & Kahn, 1987a).

Selective Optimization with Compensation model of successful aging.

Another influential model of successful aging is Baltes's Selective Optimization with Compensation model (SOC). In the SOC model, successful aging is to effectively manage all kinds of resources through three strategies: selection, compensation and optimization, so as to maximize gains and minimize losses. Selection refers to the process in which the elderly faces the external environment and combine their own actual situation to choose how to use the limited resources. Compensation refers to the need to use substitute or compensatory means to achieve the goal when limited resources are lost or do not meet the goal. Optimization refers to the optimal allocation of resources in the controllable field to achieve a better state, so as to improve the quality of life and individual adaptability, and the ideal outcome of the interaction of the three processes of selection, compensation and optimization is successful adaptation and successful aging (Baltes P, 1990a).

However, the research of SA based on SOC model theory has also caused a lot of controversy (Bo, 2018). First, the SOC model regards SA as a lifetime development process, which emphasizes the process theory will over-rely on individual goals and the environment, and will make the elderly ignore in real life can take preventive activities to improve expected difficulties, but cannot prevent the reduction of future stress and its adverse effects. Second, due to the loss of resources caused by aging, some compensation and optimization resources are consumed too much, resulting in the lack of some important activities, which will bring obstacles and difficulties to empirical research. Third, the main reason is that the SOC model cannot make clear how people use strategies to deal with the loss of resources and adapt successfully, so researchers cannot judge whether individuals have really applied the SOC model, which leads to the inapplicability of some cross-sectional studies (Carolijn, Denise, & Jozien, 2007).

Mid-range nursing theory of successful aging. (Flood Successful Aging Theory)

Mid-range nursing theory discussed the successful aging from a multi-dimensional point of view. This theory is a specific nursing model based on the theory of human aging, which considers the psychological, physical and spiritual aspects of aging from both subjective and objective aspects. The purpose is to provide practical action guidance for nurses on how to care for the elderly.

As early as 2002, through systematic conceptual analysis, Flood Meredith defined SA as the good results that individuals perceive when they adapt to the accumulated physiological and functional changes with the passage of time while experiencing spiritual connection and the meaning of life (Food, 2002).

Later, in 2005, Flood took Roy adaptation model as the framework, through deductive restatement, integrated the relevant literature of Tornstam's transcendental sociological theory (Sociological theory of gerotranscendence) and SA concepts and modeled to form a successful middle-level nursing theory of aging (Wenxiu, 2020).

Different from other successful aging theories, mid-range nursing theory reflects the physical, psychological and spiritual situation of the elderly from a special perspective and provides a practical model for promoting the realization of successful aging of the elderly. It provides a direction for nursing practice guidance. According to this theory, Flood believed that the enlightenment of nursing care from the physical, psychological and mental health of the elderly is as follows:

1. Physiological intervention: maintain the physical health and daily activities of the elderly through health promotion activities such as exercise programs, healthy diets, and routine medical examination.

2. Psychological intervention: through active counseling or seeking professional help, it aims to increase individuals' sense of control over their own aging or reduce negative emotions and carry out individual treatment for unhealthy behaviors.

3. Spiritual intervention: explore spirit by going to church to express religious beliefs, joining prayer groups, or by reading motivational literature or keeping a diary.

4. In order to promote gerotranscendence, encourage the elderly to accept themselves instead of correcting them all the time, and allow them to talk about death, encourage and help them to accept death quietly and peacefully, and reduce fear and anxiety.

Components of successful aging

The Mid-Range nursing theory contains four dimensions: Functional performance mechanism, Intrapsychic Factors, Spirituality and Gerotranscendence. The theoretical definitions and indicators of each dimension are as follows:

Functional performance mechanism: In the face of physiological and physical functional defects accumulated by aging, individuals make adaptive responses through conscious perception and choice. Its indicators are health promotion activities, physical health and physical mobility.

Intrapsychic Factors: Persistent traits inherent in a person's personality may enhance or weaken a person's ability to adapt to change and solve problems. It includes creativity, low levels of negative affectivity and personal control.

Spirituality: An individual's opinion and behavior about expressing a sense of connection with the superego, or some of the feelings, thoughts, experiences, and behaviors that arise in the search for the superego. It includes religious beliefs and spiritual perspectives.

Gerotranscendence: A change of meta-perspective, accompanied by the aging process from the perspective of materialism and rationalism to a more mature perspective of existence. It includes reducing death anxiety, participating in meaningful activities, changing relationships, self-acceptance and wisdom (Flood, 2005).

If you think of Flood theory as a three-dimensional pyramid, then the first three dimensions are the base of the pyramid, above them is beyond aging, and at its peak is SA. Each structure in the response process is a measurable or observable output response, which becomes feedback to people and the environment, and is exchanged with each other through the arrows in the figure. Solid arrows represent the initial swaps, and dashed arrows represent subsequent swaps, so that each process is associated with all other processes in a circular manner. The choice of variables in this study is based on the four dimensions of Flood theory. Variables include:

activities of daily living (ADL), life satisfaction, social support, income of the elderly and self-efficacy.

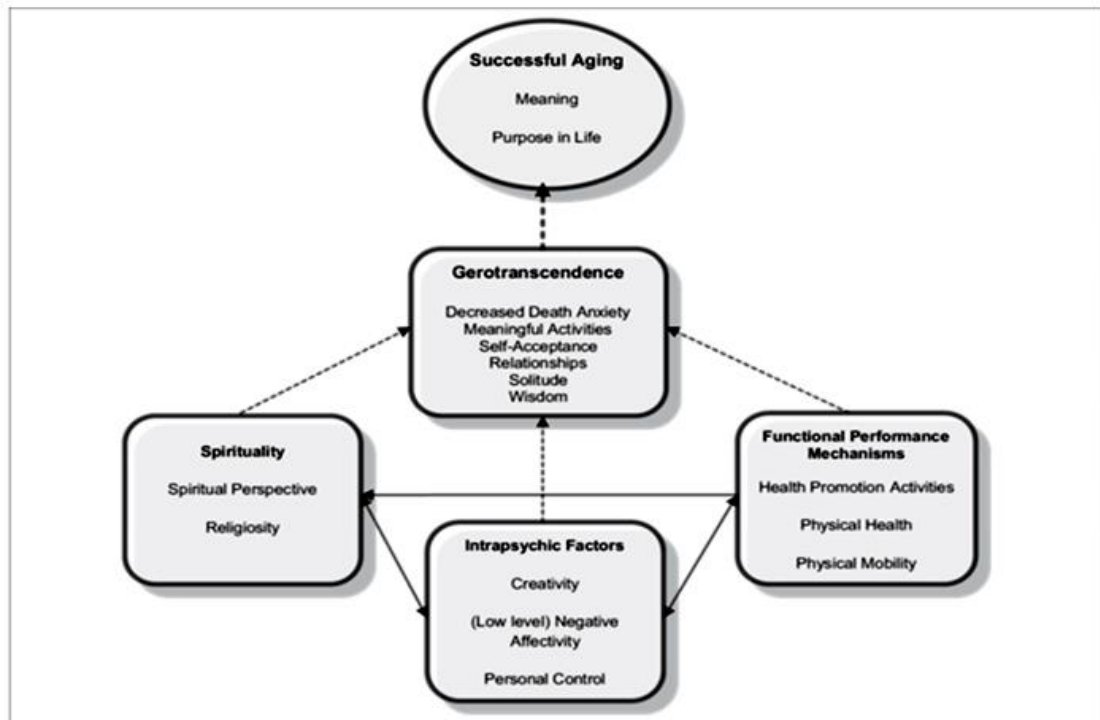


Figure 2 Flood Successful Aging Theory (Flood, 2005)

Measurement of successful aging

The evaluation of successful aging is usually a scale or questionnaire. In China is mostly based on the concepts of Rowe and Kahn. Li Chunbo (Chunbo., 2000) used the self-designed "Shanghai elderly Survey questionnaire" to conduct a longitudinal assessment from four aspects: activities of daily living, cognitive function, psychological status and physical disability, and set the criteria for determining successful aging as follows: The score of (ADL) ≤ 15 . The score of the Chinese version of the mini-mental state examination (MMSE) was higher than the cut-off value of 4 points (illiteracy ≥ 22 ; primary school education ≥ 25 ; middle school and above ≥ 29) Self-evaluation was good or above in mood, there was no physical disability, according to this standard, about half of the elderly in the community belong to successful aging.

Du Peng also evaluated the elderly in the community from multiple dimensions: self-care ability adopted the questionnaire of "Resources and Services for the elderly in the United States"; cognitive function adopts MMSE. The self-assessment of health status is from good to poor with a total of five grades. It is classified as a successful old age if it meets the following criteria: there is no problem with self-care ability; the MMSE score is lower than 4 points (that is, illiteracy > 21, primary school > 24, middle school > 26, college > 27); at most one of the 6 activities that reflect physical status and mobility has a problem; be able to stand up from a chair and stand as soon as possible; be able to earn eyes and stand on front and back feet for 10 seconds. Self-evaluation of health status is good. In this study, only 20.4% of the elderly in the community met the criteria for successful aging. In these two large studies, the score boundaries of cognitive function are divided according to the intelligence level and education level of the subjects, excluding the bias caused by different levels of education.

The successful aging multidimensional assessment scale (SAMAS) compiled by Ren Lishan, Luo Hong and others according to the theoretical framework of successful aging in 2014 consists of five dimensions: current chronic disease control, physical function, cognitive function, social function, and subjective well-being. The inter-rater structure of SAMAS formal test evaluator shows that: In conformance testing the Kappa value was 0.65-0.86, test-retest reliability was 0.66-0.85 and the internal consistency reliability was 0.88 (Ren, Luo, Fan, & Lan, 2014).

Although the above scale evaluates successful aging from various dimensions, it is complex and tedious to use. This research will use the Chinese version of SAI, which was translated and revised by Cheng Yanling in 2014. The scale was developed by Troutman in 2011 based on the Mid-Range nursing theory of Flood. The Cronbach's α is 0.832 and the parity coefficient is 0.871. The scale has good reliability and validity, and is widely used in rural areas, cities, retired cadres and medical staff. The process of Sinicization of the scale was carried out in strict accordance with the translation—back translation method of the Brislin's scale, and the 20 items of the English version of SAI remained unchanged, but the five dimensions of the original scale were re-adjusted to "inner factors and meaning of existence" (corresponding to item 3, 7~9, 17~20), "functional coping mechanism"

(corresponding to item 1, 2, 4~6), and "beyond aging" (corresponding to item 10,12~14), "sense of inheritance" (corresponding to item 16) and "spirituality" (corresponding to item 11,15). The Chinese version of SAI has 5 dimensions and 20 items, each of which has five grades of "never, occasionally, sometimes, often and always", corresponding to a score of "0-4", so each dimension is divided into "0-32", "0-20", "0-20", "0-4" and "0-8". The total score of SAI is "0-80". The higher the score is, the higher the SA level is (Yanling, 2014).

Factors related to successful aging among community dwelling the elderly living in Wenzhou, China

There are many factors affecting successful aging. By reading literatures, and combined with Mid-Range nursing theory, it is determined that this study will focus on the activities of daily living (ADL), life satisfaction, social support, income of the elderly and self-efficacy of the elderly.

Activities of daily living (ADL)

The ability of activities of daily living refers to the most basic and common activities that people need to repeat every day in order to live independently and survive, that is, basic movements and skills such as clothing, food, housing, transportation, personal hygiene and so on. In order to maintain personal hygiene and tidiness and to carry out independent community activities in their daily life. The ability of activities of daily living are the most basic and common activities that must be carried out repeatedly every day in order to maintain survival and adapt to the environment. The condition of ADL in the elderly will affect their quality of life and life expectancy, which is an important index to evaluate their health status (Bingyi, Juanli, Wenhao, Yuanyuan, & Zaixiang, 2019).

A study on the relationship between activities of daily living (ADL) and depressive symptoms in the elderly in China shows that the elderly with impaired ADL have a higher incidence of depression and are less likely to achieve successful aging (Jinfeng. et al., 2020). The decrease of ADL will reduce the range of activities of the elderly, reduce their contact with the outside world, and then reduce the amount of information and the active activity of the brain (Jinfeng. et al., 2020). Thus, affecting the physical and mental health of the elderly. Research shows that the higher

the ability of activities of daily life, the greater the possibility of successful aging, whether in physical, psychological or social activities have a positive impact (Yongfeng, 2011). ADL is an index that objectively reflects the basic self-care ability and health status of the elderly (Choi et al., 2013), it can predict successful aging (Jinfeng. et al., 2020).

Life satisfaction

Life satisfaction refers to an individual's cognitive evaluation of the quality of life experience, an individual's subjective experience of his or her own quality of life, and it is a comprehensive psychological index to measure a person's quality of life (Houyu & Lianying, 2008). Life satisfaction can not only measure the individual's quality of life, but also reflect the individual's mental health status.

In the elderly, their physical function decreases with age, and their living conditions and environment change with age, such as retirement or changes in family structure. This index will also interact with mental health status at the same time (Zhou, 2019). Literature review found that the definition of successful aging deals with cognitive action, perception, control, life satisfaction, and ethics (Fatemeh et al., 2020). Education, lifelong learning activities, life satisfaction, and well-being were positively associated with successful aging (Yamashita, López, Stevens, & Keene, 2017). The results of a cross-sectional survey of 1516 elderly people in the community in Shanghai, China showed that the life satisfaction index of the elderly with successful aging was higher than that of the normal elderly and those with mild cognitive impairment (Mingying et al., 2012). All these show that there is a certain relationship between life satisfaction and successful aging.

A survey of 561 elderly people in Turkey showed that there was a positive correlation between life satisfaction and successful aging of the elderly. The results also suggest that intervention in the daily life of the elderly to improve life satisfaction, which is conducive to achieve the successful aging of the elderly (Kars Fertelli T, 2020) Related studies have shown that the elderly living in medical and nursing homes also exist this phenomenon, the higher the life satisfaction, the more conducive to reduce the loneliness of the elderly, promote the mental health of the elderly, so as to improve the successful aging of the elderly (Zhang, Lin, Lin, & Zheng, 2020).

Social support

Social support can be regarded as the help and support of individuals by various social relations based on a certain range of social network structure (Uchino, Cacioppo, & Kiecolt-Glaser, 1996), including support from family, friends and others. Social support helps to reduce loneliness and isolation among the elderly by promoting effective responses (Moonesar et al., 2016). Social support from different sources is the basis of the happy life of the elderly, especially the support from the family, which is of great significance to improve the life satisfaction of the elderly. Some studies have shown that in China, the better the social support, the better the successful aging of the elderly in the community (Li, 2019). Similarly, a study in South Korea shows that family support is a significant factor in SA (Han, 2015).

In a cross-sectional survey of the elderly in the Spanish community, Dumitrache found that social support helps the elderly adapt to aging and achieve SA, and is closely related to life satisfaction (Dumitrache, Rubio, & Cerdón-Pozo, 2019). Another cross-sectional survey of 406 elderly in Spain showed that psychosocial resources, including extroversion, optimism, social support or social networks, were important for the successful aging of the elderly, and the role of psychosocial variables should be taken into account in interventions to promote successful aging (Dumitrache, Rubio, & Cerdón-Pozo, 2019).

Xiao Shuiyuan and others found that for the elderly, subjective support and the utilization of support may be more meaningful than objective support, especially for the utilization of support, if it is not treated correctly, it will have a negative effect (Shuiyuan. & Desen, 1987).

The specific relationship between social support and successful aging has not been studied in Wenzhou, China. This study will explore the relationship between social support and successful aging among the elderly in Wenzhou.

Income of the elderly

Income refers to the monthly economic income of the elderly, including from the support of their children or relatives, personal labor income, and government pensions. In a study in Hong Kong, China, it was found that the economic situation was a predictor of SA (Cheung & Wu, 2012). Similarly, a study in Guangzhou, China, shows that elderly people with a monthly income of more than 3,000 yuan are more

likely to achieve successful aging (Pei. et al., 2019). The higher the income of the elderly, the better the conditions to get better living resources, enjoy high-quality medical resources and care resources for the elderly agencies. Similarly, a good economic income can increase the self-esteem of the elderly, thus promoting successful aging (Wu et al., 2017). According to a survey of 232 retirees in Anhui Province, China, those with better financial status were not limited by economic pressure, and were more able to arrange their lives according to their own will, seeking the meaning and value of life, and thus were more likely to achieve successful aging (Xu, Du, Yang, Zhao, & Yu, 2020).

Wenzhou is an economically developed city with high consumption level, and the relationship between the economic income of the elderly and successful aging has not been studied. This study will explore the relationship between the two in Wenzhou.

Self-efficacy

Self-efficacy, first put forward by American psychologist Bandura, is the core concept in Bandura's social cognitive theory (Bandura, 1977). In 1977, Albert Bandura first defined it as "a person's belief in the ability to perform a particular behavior or the ability to accomplish the necessary behavior to produce a certain result, which is the expectation of a specific ability." With the deepening of research, Bandura defined self-efficacy in the 1980s as "people's judgment of people's ability to organize and implement the behavioral process of achieving specific achievement goals(Bandura, 1986)." Or "belief in the ability to control things that affect your life (Bandura, 1989) ." Bandura developed this concept in the 1990s, defining it as "a person's belief in the process, motivation and cognitive resource ability to organize and implement the actions needed to achieve specific achievement goals (Bandura, 1997) ." As the theory of self-efficacy has been applied to different fields, its concept has changed due to the particularity of the field. In the elderly population, Self-efficacy refers to the elderly's perception or belief that he or she can take adaptive behavior in the face of challenges in the environment.

A person who believes that he can handle all kinds of things will be more active and active in life. Therefore, the elderly with a sense of self-efficacy can confidently deal with all kinds of pressures and challenges in their lives. Studies have

shown that self-efficacy has the value of predicting successful aging (Carver & Buchanan, 2016). The higher the sense of self-efficacy of the elderly, the more conducive to promoting their successful aging (Kang. et al., 2018). A survey of 305 Korean elderly people over the age of 60 found that the sense of self-efficacy of the elderly can significantly predict successful aging, which is positively correlated with successful aging (Cha, Seo, & Sok, 2012). In a study of 257 elderly people who were members of the New Elder Citizen Movement in Japan and their mean age was 82.3 ± 3.8 years, it was found that the simple assessment of self-efficacy described in this study may be a useful tool for successful aging of elderly people (Doba, Tokuda, & Saiki, 2016).

Conclusion

"Successful aging" is a popular word to describe the life of the elderly. "Successful aging" means that the elderly can well adapt to the changes in physical, psychological and social with age, and can actively perceive the purpose and significance of the whole process of their own life. The related theories of successful aging include the successful aging model proposed by Rowe and Kahn, which divided the elderly into three categories: the first category is the impaired elderly, the second category is the normal elderly, and the third category is the successful elderly. Another two influential models are the Baltes's Selective Optimization with Compensation model (SOC) and Mid-range nursing theory of successful aging proposed by Flood. The factors related to successful aging in this study are found from Mid-range nursing theory, including activities of daily living (ADL), life satisfaction, social support, income of the elderly and self-efficacy.

Referring to the relevant literature, it is found that there are many relevant literatures devoted to the development and promotion of pension services in Wenzhou, but there are not many investigations on the current situation of the elderly's life in Wenzhou around the theme of "successful aging". At the same time, there are few literatures to analyze its influencing factors, so this study mainly focuses on the current situation of successful aging of the elderly in Wenzhou. At the same time, analyze the influencing factors of successful aging, and clarify the relationship between influencing factors and successful aging, so as to provide basic data for the

related research and nursing intervention of successful aging of the elderly. So as to effectively promote the successful aging of the elderly, reduce the care burden of the family and society, and alleviate the pressure brought by aging.



CHAPTER 3

RESEARCH METHODOLOGY

This chapter introduced the research methods, including research design, population, inclusion criteria of the sample, sample size, sampling technique, research instrument, human subject protection, data collection procedure and data analysis.

Research design

This study belonged to the cross-sectional study in the non-experimental study, and it was carried out in the community in Wenzhou area to select the elderly who met the requirements as the object of study and the locations for data collection were selected in four community pension service centers in Wenzhou City (Lucheng, Ouhai, Longwan and Dongtou District).

A descriptive correlational design was applied to examine the relationship of activities of daily living (ADL), life satisfaction, social support, income of the elderly, self-efficacy and successful aging.

Population and Sample

In this study, the elderly living in the communities of Wenzhou (including Lucheng, Ouhai, Longwan and Dongtou District.) were selected as the samples of study.

Sample

Inclusion criteria of the sample:

- (1) Age \geq 60 years old.
- (2) The elderly registered to Wenzhou.
- (3) They did not have cognitive impairment which was measured by the Six Item Cognitive Impairment Test (6CIT) scale.
- (4) The elderly who speak and understand Wenzhou or mandarin language.
- (5) Voluntarily participate in the investigation.

Sample size

Sample size was calculated following the G-power program. I chose the calculation method of correlation study and determined the parameters as follows: Tail=two, effect size=0.3 (Pei. et al., 2019), α err prob=0.05, Power (1- β err prob) 0.8, the results showed that the total sample size was 82. So, I need to look for at least 82 samples.

Sampling technique

This study adopted the method of simple random technique. A questionnaire survey was conducted among the elderly who met the inclusion criteria from communities in four districts of Wenzhou City, Zhejiang Province (including Lucheng District, Ouhai District, Longwan District and Dongtou District). I divided the sample into four districts and calculated proportion of each district, the results were as follows in Table 1.

Table 1 Districts and data from Wenzhou Population Statistics Bulletin.

Districts and data	Lucheng District	Ouhai District	Longwan District	Dongtou District
Population aged 60 and above.	173400	93100	44400	24800
The proportion of the population of each district.	51.7%	27.7%	13.2%	7.4%
At least sample size.	42	23	11	6

The data came from the 2019 Wenzhou Population Statistics Bulletin, released by the Wenzhou Bureau of Statistics.

Research instrument

The research instruments of this study were 6CIT scale, Demographic questionnaire, Successful Aging Scale (SAS), the Barthel index of ADL, Satisfaction With Life Scale (SWLS), Social Support Rating Scale (SSRS) and General Self-Efficacy Scale (GSES).

Screening instrument

The six-item cognitive impairment test [6CIT] is a short and effective standardized assessment tool, which is helpful for primary health care institutions to evaluate the cognitive status of the elderly. The scale has a total of 6 questions, with scores ranging from 0 to 10. The score of 0-7 indicates normal, the score of 8-9 indicates mild cognitive impairment, and the score of 10-28 indicates significant cognitive impairment.

Data collection instruments

Demographic questionnaire: -

Including age, sex, place of residence, religious belief, marital status, numbers of children, level of education, individual income in a month, type of medical insurance, comorbidity.

Successful Aging Scale (SAS):

In this study, the researcher used the Chinese version of SAI translated and revised by Cheng Yanling et al in 2014 (Yanling, 2014). The SAI was developed by Troutman et al in 2011 based on the Flood Successful Aging Theory (Meredith, A, Sara, & Amanda, 2011). There are 20 items in the scale, each item is divided into five grades according to frequency: "never, occasionally, sometimes, often, always". The score is scored according to Likert level 5, and the corresponding score is "0-4". The higher the score, the higher the degree of successful aging. The content validity index of the Chinese version of the successful Aging scale was 0.975 and the Cronbach's α coefficient was 0.832.

The Barthel index of ADL:

In this study, the researcher used ADL Chinese version of Barthel Index rating scale. The scale was designed and developed by American Dorothea Barthel and Florence Mahney in 1965. In China, this scale is widely used in the assessment of activities of daily living. The score of Barthel index is 0-100. The assessment includes urine and feces control, eating, dressing, bathing, grooming, toilet, bed and chair transfer, flat walking, going up and down the stairs. According to the score of Barthel index, the activities of daily living are divided into four levels: no dependence, mild dependence, moderate dependence, and severe dependence. The score = 100 means

no dependence that the elderly does not have to rely on others and can take care of themselves. The score = 61-99 means mild dependence, few unable to take care of themselves and some need care by others, the score = 41-60 means moderate dependence, with moderate dysfunction and need great help to complete daily life activities, the score ≤ 40 means severe dependence, with severe dysfunction, most of daily life activities cannot be completed or need help from others. Barthel Index rating scale is very simple, reliable and sensitive, so it is a widely used and studied ADL evaluation method in China.

Satisfaction With Life Scale (SWLS):

In this study, the researcher used Chinese version of Satisfaction with Life Scale (SWLS) which was originally prepared by Pavot, William and Ed in 1993 (William & Ed, 1993). The scale was selected to measure life satisfaction, which was used to evaluate a person's subjective evaluation of his or her life. The scale contains a total of five items, each of which uses Likert's 7-level rating scale (1 = very disagree; 7 = very agree). These include questions such as "My life is very satisfactory." and "If I live again, I will hardly make any changes to my existing life." and so on. The total score of each item is between 5 and 35. The higher the total score, the better the satisfaction with life. In the related research in China, the application of life satisfaction scale is better (Schimmack et al., 2002). The Cronbach's α coefficient of SWLS scale was 0.78 and the split-half coefficients was 0.70 (Xiong & Xu, 2009).

Social Support Rating Scale (SSRS):

In this study, the researcher used Social Support Rating Scale. The scale was designed and compiled by Xiao and other mental health workers on the basis of foreign scales and according to the actual situation in China (Xiao, 1994), which helps people to have a comprehensive evaluation of their social support. The scale was widely used and recognized in China, with 10 items and 3 dimensions, with a total score of 12-65 points, ≤ 22 as a low level, 23-44 as a moderate level, and > 45 as a higher level. The higher the score, the higher the degree of social support. The coefficient of Cronbach's α in this scale was 0.73.

General Self-Efficacy Scale (GSES):

Schwarzer and his colleagues began to develop the General Self-Efficacy Scale (GSES) in 1981. GSES started with 20 items and later improved to 10 items. At present, GSES has been translated into at least 25 languages, it is widely used to evaluate self-efficacy internationally (Schwarzer, Bäßler, Kwiatek, Schröder, & Zhang, 1997). The Chinese version GSES was revised by Wang Caikang was adopted for this study. The scale with a total of 10 items (Caikang, Zhongfeng, & Yong, 2001). The score is scored according to Likert level 4, the corresponding score is "1-4", and the final score of the scale is the sum of the scores of each item divided by 10. The score < 2 points means the level is low, 2 ~ 3 points means the level is medium, and > 3 points means the level is higher. The coefficient of Cronbach's α in this scale was 0.78.

Validity and reliability of the instruments

Validity: All instruments had found the Chinese version and had been widely used in the study of the elderly in China.

Reliability: The Chinese versions of successful aging scale, the Barthel index of ADL, satisfaction with life scale, social support rating scale and general self-efficacy scale were tested by pilot test for internal consistency by Cronbach's alpha coefficient. The reliability was tested on 30 cases of the elderly in Wenzhou, China with the similar characteristics of the samples. The Cronbach's alpha for successful aging scale, the Barthel index of ADL, satisfaction with life scale, social support rating scale and general self-efficacy scale were computed and accepted at more than 0.70.

Ethical consideration

The research proposal was approved by the IRB of Burapha University. The research procedure was conducted adhering to the proposal. The researcher explained clearly about research purpose and involvement procedure. Involvement in this study did not harm any participants. All participants volunteered to participate in this study, and they can withdraw at any time without prejudice. Since the participants of the

research were all the elderly, in the course of the study, the researcher allowed the participants to take a rest if they want or if the researcher noticed that it is needed during the interview. Each participant was tracked with a number on the questionnaire and data file. Every form and data were kept under confidential and only researcher had access to the data.

Data collection procedure

The data collection was conducted after obtaining the ethical approval of Burapha University and the permission of Wenzhou district administrative office.

In strict accordance with the inclusion criteria, the researcher selected the elderly in community who met the requirements to conduct a face-to-face interview.

The researcher introduced the participant and explained the purpose of the research, ethical issues, protection of human rights issues and withdrawal from the research. Then 6CIT was used to screen the elderly who were willing to take part in the survey for 3-5 minutes. Those who meet the inclusion criteria was required to sign the participation consent form.

The interview time was about 30 minutes. The researcher used Wenzhou or mandarin language to explain and administer the questionnaire.

After the questionnaire was collected, the invalid questionnaires were removed, and the researcher checked and numbered the questionnaire.

Data analysis

The data were analyzed by using SPSS 21 statistical software. In this study, the test level $\alpha = 0.05$ was set, and descriptive statistics and correlation statistics were used to analyze the data.

The general data and other research variables of the elderly were described by frequency, percentage, mean (M), standard deviation (SD).

The data were tested for normality and assumptions of Pearson's Product Moment correlational coefficient including histogram, scatterplots, and linearity in order to meet the assumptions.

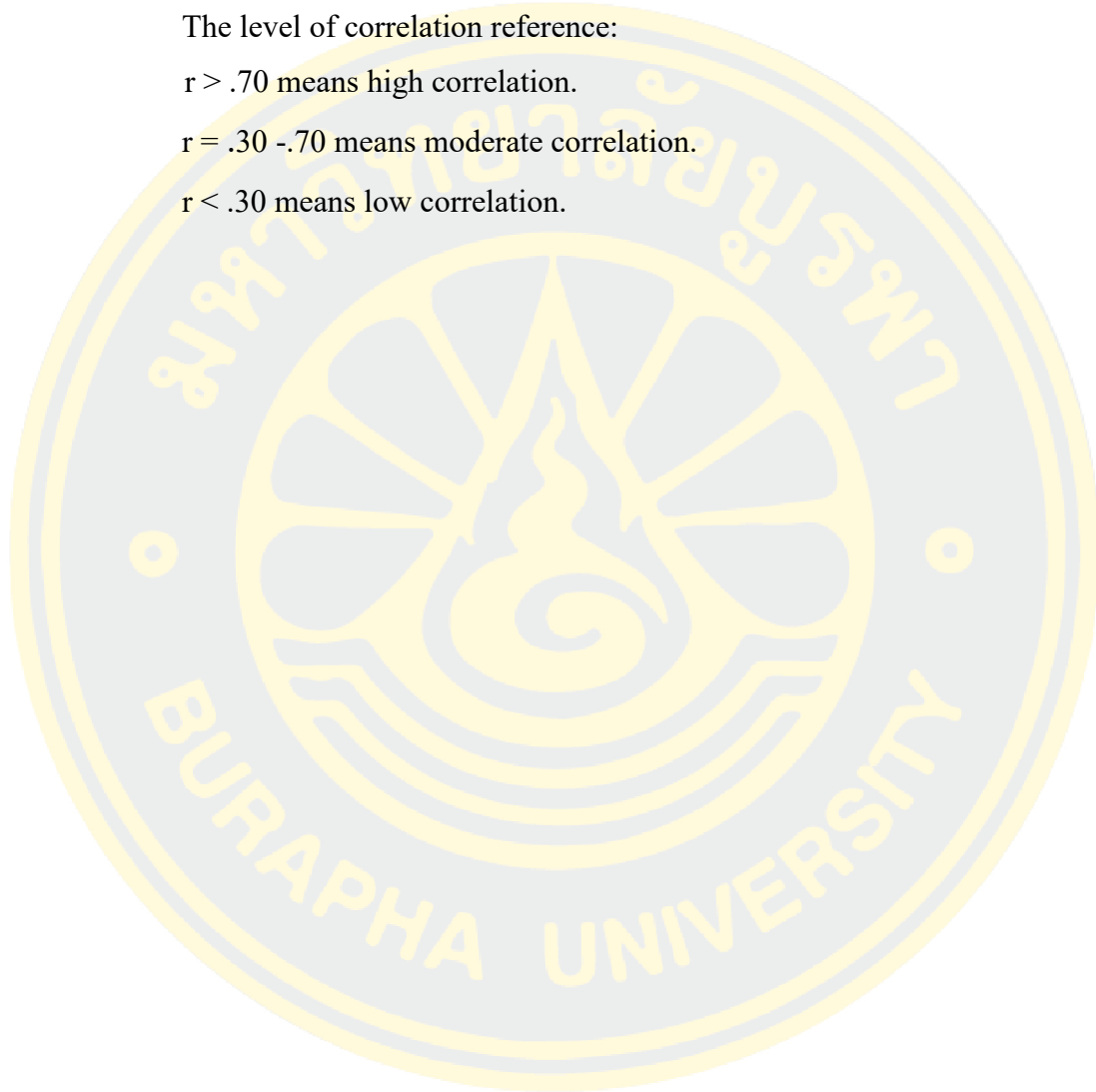
Pearson Correlation Coefficient were used to determine the correlation among the activities of daily living (ADL) with the successful aging, the life satisfaction with the successful aging, the social support with the successful aging, the income with the successful aging, the self-efficacy with the successful aging.

The level of correlation reference:

$r > .70$ means high correlation.

$r = .30 - .70$ means moderate correlation.

$r < .30$ means low correlation.



CHAPTER 4

RESULTS

This study mainly discussed the factors influencing the successful aging of the elderly in Wenzhou community dwelling. This chapter presented the results, including:

Part 1 Description of sample characteristics of the activities of daily living, life satisfaction, social support, income of elderly and self-efficacy.

Part 2 Description of level of successful aging.

Part 3 Correlation factors of successful aging.

Part 1 Description of sample characteristics

This study investigated descriptive statistics to examine the frequency, percentage, mean, standard deviations, and range of demographic characteristics of the elderly's activities of daily living, life satisfaction, social support, income of elderly, self-efficacy and successful aging among community dwelling the elderly in Wenzhou China.

Table 2 Description of sample by demographic characteristics ($n = 83$).

Characteristics	<i>n</i>	%
Gender		
Female	44	53.0
Male	39	47.0
Religion		
Buddhism	34	41.0
Catholicism	2	2.4
Christian	4	4.8
Taoism	1	1.2
No	42	50.6

Table 2 (Continued)

Characteristics	<i>n</i>	%
Age (years)		
60-69	9	10.8
70-79	36	43.4
80-89	33	39.8
≥90	5	6.0
<i>M</i> = 78.42, <i>SD</i> = 7.677, Range 60 to 95 years		
Education level		
No formal education	54	65.1
Primary school	15	18.0
Junior high school	11	13.3
High school	3	3.6
Marital status		
Married	68	81.9
Widowed	15	18.1
Numbers of children		
One	2	2.4
Two	22	26.5
Three or more	59	71.1
Type of medical insurance		
Agricultural insurance	42	50.6
Commercial insurance	5	6.0
Social insurance	36	43.4
Physical condition		
No disease	27	32.5
Comorbidity	56	67.5
Comorbidity (present illness)		

Table 2 (Continued)

Characteristics	<i>n</i>	%
Hypertension	41	73.2
COPD	1	1.8
Hypertension and diabetes	9	16.1
Others	5	8.9
Income (Yuan per month, 1 USD = 6.4Yuan)		
≤ 5000 Yuan	70	84.3
> 5000 Yuan	13	15.7

As can be seen from Table 2, the data showed that most of samples were female (53.0 %), about half have no religion (50.6 %), and nearly half believe in Buddhism (41.0 %). The majority of participants were between the ages of 70-79 (43.4%), followed by 80-89 years (39.8%), with an average age of 78.42 years (SD = 7.68). Most of the participants had no formal education experience, and 18.0% of the elderly had primary education experience, most of them were married (81.9 %). Most of the participants had three or more children (71.1 %). All participants had medical insurance, mainly agricultural insurance (50.6 %) and social insurance (43.4 %). 32.5% of the participants did not have any disease, but 67.5% of the elderly had comorbidities. Among the elderly with comorbidities, hypertension accounted for 73.2%, COPD for 1.8%, hypertension and diabetes for 16.1%, and other diseases for 8.9%. The monthly income of most of the elderly was lower than the average level in Wenzhou (84.3%), and the monthly income of 15.7% of the elderly was higher than the local average level.

Table 3 Description of the study variables ($n = 83$)

Variables	Possible score range	Actual range	<i>M</i>	<i>SD</i>
Activities of daily living (ADL)	0-100	50-100	84.58	13.16
Life satisfaction	5- 35	20-35	29.05	3.48
Social support	12-65	26-55	42.42	5.19
Income of elderly		300-8000	3413.25	1727.66
Self-efficacy	10-40	12-40	28.75	6.70
Successful aging	0-80	22-76	56.76	12.31

According to the table 3, the mean score of activities of daily living (ADL) was 84.58 ($SD = 13.16$). The mean score for life satisfaction was 29.05 ($SD = 3.48$), social support mean score was 42.42 ($SD = 5.19$) and the mean monthly income of elderly was 3413.25 ($SD = 1727.66$), the mean score of self-efficacy was 28.75 ($SD = 6.70$).

Part 2 Description of level of successful aging

Table 4 Scoring level, frequency, percentage with mean and standard deviation.

Scoring of successful aging	<i>n</i>	%	Level
0 - 27	3	3.6	Low
28 - 55	36	43.4	Moderate
56 - 80	44	53.0	High

$M = 56.76, SD = 12.31$

Table 4 showed that 53.0% of the participants had a high level of successful aging and 43.4% had a moderate level of successful aging with the mean score was

56.76 ($SD = 12.31$).

Part 3 Correlation factors of successful aging.

Table 5 Correlation coefficients between activities of daily living, life satisfaction, social support, income of elderly, self-efficacy and successful aging ($n = 83$)

Variables	r value	P - value
Successful aging	-	-
Activities of daily living	.67	< .001
Life satisfaction	.63	< .001
Social support	.36	< .001
Income of elderly	.73	< .001
Self-efficacy	.72	< .001

Table 5 showed that income of elderly ($r = .73$), self-efficacy ($r = .72$) were highly correlated with successful aging ($p < 0.001$), while activities of daily living ($r = .67$), life satisfaction ($r = .63$), social support ($r = .36$) were moderately correlated with successful aging ($p < 0.001$).

CHAPTER 5

CONCLUSION AND DISCUSSION

This chapter mainly summarized and discussed the study results, including summary of the findings, discussion of the results, implications of the study results, recommendation for nursing from the study results, and limitations of the study. The objectives of this study were to study level of successful aging of the elderly in the community in Wenzhou, China and study the association between activities of daily living, life satisfaction, social support, income of elderly, self-efficacy, and successful aging of the elderly.

Summary of the findings

This study was conducted from July 1th to August 20th, 2021 in Wenzhou, China (Lucheng District, Ou Hai District, Longwan District, Dongtou District) among community dwelling, used convenient sampling technology to select samples, a total of 83 samples meeting the requirements were investigated. The study used a questionnaire survey, the 6CIT scale was used to determine the cognitive status of the elderly before the investigation. Used the demographic questionnaire developed by researcher to investigate the general situation of the elderly, used the successful aging scale to investigate the successful aging of the elderly. The Barthel Index rating scale of ADL, Satisfaction with Life scale (SWLS), Social Support Rating scale and the General Self-efficacy scale (GSES) were used to investigate the elderly's activities of daily living, the situation of life satisfaction, social support and self-efficacy. Prior to the formal investigation, 30 the elderly with similar characteristics were tested for the reliability of the instrument. After 83 samples were collected, frequency, percentage, mean, standard deviation, correlation coefficient and other statistical analysis methods were used for analysis.

Most of samples were female (53.0 %), about half have no religion (50.6 %), and nearly half believe in Buddhism (41.0 %). The majority of participants were between the ages of 70-79 (43.4%), with an average age of 78.42 years ($SD = 7.68$). Most of the participants had no formal education experience, and 18.0% of the elderly had primary education experience, most of them were married (81.9 %). Most of the

participants had three or more children (71.1 %). In China, supporting the elderly by their children has become an important source of income for the elderly in their later years. All participants had medical insurance, mainly agricultural insurance (50.6 %) and social insurance (43.4 %), among which social insurance has a higher reimbursement rate for medical expenses than agricultural insurance. 32.5% of the participants did not have any disease, but 67.5% of the elderly had comorbidities. Among the elderly with comorbidities, hypertension accounted for 73.2%, COPD for 1.8%, hypertension and diabetes for 16.1%. Hypertension was the most common comorbid disease. The monthly income of most of the elderly was lower than the average level in Wenzhou (84.3%), and the monthly income of 15.7% of the elderly was higher than the local average level.

The mean score of activities of daily living (ADL) was 84.58 ($SD = 13.16$). The mean score for life satisfaction was 29.05 ($SD = 3.48$), social support mean score was 42.42 ($SD = 5.19$) and the mean monthly income of elderly was 3413.25 ($SD = 1727.66$), the mean score of self-efficacy was 28.75 ($SD = 6.70$).

The results showed that 53.0% of the participants had a high level of successful aging and 43.4% had a moderate level of successful aging with the mean score was 56.76 ($SD = 12.31$).

Successful aging in Wenzhou, China

This was the first time to carry out the research on the successful aging of the elderly in Wenzhou, China. The research on successful aging was not very common in China. The results of this study showed that 53.0% of the elderly were in a high level of successful aging, and 43.4% of the elderly were in a moderate level of successful aging with the mean score was 56.76 ($SD = 12.31$). Other research results showed that the average score for successful aging was 48.76 (Wenxiu, 2020) and 50.53 (Qian, Zihan, Hairu, & Mei, 2021). Compared with other studies in China, the results of successful aging in this study were relatively high.

In this study, most of the samples were aged 70-89 years (83.2%), young old people account for a small proportion, which affected the level of successful aging. The possible reason was that age growth induces a further decline in physical and

sensory functions, social participation activities have also decreased, it is not conducive to the realization of successful aging.

Most of the participants had no formal education experience, and 18.0% of the elderly had primary education experience. In China, influenced by Chinese history, most of these elderly people did not have the opportunity to receive education when they were young. Low educational experience may be affecting the acquisition and storage of health knowledge and health promotion behavior of the elderly to a certain extent. Moreover, low educational experience will affect the problem-solving ability of the elderly to a certain extent, so as to reduce their sense of self-efficacy and affect the realization of successful aging.

In terms of marital status, 81.9% of the elderly were married and currently lived with their spouses. Compared with the widowed elderly, the elderly with spouses were better in life and spirit get more family support, were able to express their thoughts and feelings to spouse, and got more support in all aspects. 71.1% of the elderly had three or more children, which increased the efforts of children to support the elderly, including economic support and help in daily life.

In the sample of this study, 32.5% of the participants did not have any disease, 67.5% of the elderly had comorbidity. Among the comorbidities, hypertension, diabetes, COPD and other chronic diseases account for the majority. Wenzhou has a developed economy and good medical conditions, this provides favorable conditions for the elderly in health promotion and disease treatment, and promotes the development of successful aging to a certain extent. Although the monthly income of most elderly people was lower than the adult average level, almost all elderly people had different types of social medical insurance, which reduced the economic pressure of the elderly in the process of medical treatment to a certain extent. So as to make the elderly more willing to go to the hospital for treatment, promote the recovery of physical diseases, and promote the realization of successful aging.

The results of this study were similar to those of other regions in Asia. There was significant positive correlation between activities of daily living, life satisfaction, social support, income of elderly, self-efficacy and successful aging. This result was also consistent with the hypothesis of this study.

Discussion

The hypothesis of this study was that, the activities of daily living, life satisfaction, social support, income of elderly and self-efficacy had positively correlate with successful aging among community dwelling the elderly in Wenzhou, China.

The activities of daily living of the elderly is the most basic living ability, which is the basis for health promotion activities and physical mobility. It is also an important indicator of physical health (Bingyi et al., 2019). In this study, the mean score of activities of daily living (ADL) was 84.58 (SD =13.16), 67.5% of the elderly had chronic disease comorbidity. The problems caused by comorbidity affect the ability of activities of daily living to some extent. For example, diabetic retinopathy affected the vision of the elderly, and then affect the ability of daily activities. The sequelae of stroke caused by hypertension can restrict the activities of the elderly, and then affected the daily activity. In this study, the majority of participants were between the ages of 70-79 (43.4%), followed by 80-89 years (39.8%), with an average age of 78.42 years (SD = 7.68). With the increase of age, the organ function of the elderly gradually declines and the ability of physical activity is limited, which affects the level of ADL. The statistical results showed that activities of daily living (ADL) had a moderate positive correlation with successful aging ($r = .67$; $p < .001$). In this study, more than half of the elderly live with their spouses, which allowed the elderly to be taken care of by their spouse in life, especially for those with living ability defects. The activities of daily living are not only the basis of individual independence, but also the most basic preparatory activities for one to perform his role and tasks. When the independent ability to perform these activities is lost, it can have a huge impact on the elderly's self-image and also on their level of successful aging.

The higher the ability of the activities of daily living, the higher the level of successful aging of the elderly. The results of this study were also consistent with the research results carried out by Tan Yongfeng in Shanghai, China (Yongfeng, 2011).

A study in Taiwan, China also used the score of ADL as an indicator of successful aging (Lin, Hsieh, Cheng, Tseng, & Su, 2016). Numerous studies have shown that the ADL is the basis and important influencing factor of successful aging.

The statistical results of life satisfaction also showed a moderate positive correlation with successful aging ($r = .63; p < .001$). The finding was similar to a study done in Turkey, there was a significant positive correlation ($r = 0.305; p < .001$) between successful aging and the life satisfaction (Kars Fertelli T, 2020). The life satisfaction of the elderly mainly means the satisfaction generated when the needs of the elderly at different levels are met. It is not only an important dimension to evaluate the quality of life, but also an important indicator of the elderly's subjective well-being. In this study, the mean score for life satisfaction was 29.05 (SD =3.48). Almost all the elderly in Wenzhou enjoyed medical security 32.5% of the elderly were in good health, and 81.9% of the elderly lived with their spouses. Wenzhou is an economically developed city, and the elderly basically didn't have to worry about having enough to eat. All these have improved the life satisfaction of the elderly to a certain extent. The higher the life satisfaction, the stronger the subjective life well-being of the elderly, and the more positive emotional experience of the elderly in daily life, so as to be psychologically healthier. In terms of physical diseases, positive emotional experience can help elderly patients with chronic diseases better deal with the life challenges brought by chronic diseases, so as to achieve the successful aging of the elderly. This conclusion was also supported by the results of a study in Hong Kong, China, which showed that life satisfaction was a key predictor of successful aging of Chinese elderly (Lee, 2009).

When the elderly is satisfied with their living conditions and there are no problems in their daily life, they will be more willing to actively participate in meaningful activities, reduce their fear and anxiety about death, have a higher degree of self-acceptance, and are more likely to achieve successful aging. In the Flood Successful Aging Theory, this judgment is supported by the gerotranscendence dimension, which includes reducing death anxiety, participating in meaningful activities, changing relationships, self-acceptance, solitude and wisdom. The higher the life satisfaction, the more beneficial to the improvement of the gerotranscendence dimension, so as to promote the development of successful aging.

The results of this study showed that there was a moderate positive correlation between social support and successful aging ($r = .36; p < .001$). The higher the score of social support, the better the successful aging. This was consistent with Li

Zhou's research results (Li, 2019). The intimate relationship between people is the essence of social support, and social support is also a potential resource for individuals to deal with events and emotional sustenance. Chinese culture advocates filial piety, and the younger generation needs to respect the elderly. In this study, most of the participants had three or more children (71.1%), the children of the elderly assumed the main responsibility of supporting the elderly. The more children, the more material and spiritual support the elderly receive from their children. In this study, most of the elderly (81.9%) lived with their spouses. Compared with the elderly who live with their spouses and live alone, the former can get more life care and emotional support. A higher level of social support helps to stimulate positive emotions. When the elderly encounter difficulties, they take the initiative to talk to their families, friends and others, and get more material and spiritual support. That is to say, the more social support the elderly has, the more positive experience they can accumulate, and reduce the loneliness and isolation of the elderly. This was also consistent with the research results of Taiwan scholar Chen Guanghui (Chen Guanghui, 2017). Social support can not only increase the sense of belonging and self-confidence of the elderly through social, psychological and biological mechanisms, but also buffer the stress response and promote healthy behavior patterns, so as to increase positive emotions and promote successful aging.

With more social support for the elderly, social networks and social relations will be relatively stable, which can positively promote individuals' long-term access to various resources and some potential. For example, the elderly can get more resources and help when they encounter health problems. When individuals face physical and mental health-related problems or difficulties, social support can help enhance individuals' health beliefs, decision-making and behavior, so as to promote the successful aging of individuals.

Active social support helps to maintain the high well-being of the elderly and improve their physical and mental health and quality of life. Therefore, the elderly with more social support is easier to achieve successful aging.

The results of this study showed that income of elderly was highly positively correlated with successful aging ($r = .73; p < .001$). According to the adult per capita monthly income of 5000 yuan in Wenzhou in 2021, 84.3% of the elderly had a

monthly income of less than 5000 yuan and 15.7% had a monthly income of more than 5000 yuan. Most of the monthly income of the elderly came from child support and old-age insurance. Once the elderly has enough economic resources, they do not need to worry about the pressure of life, which is conducive to the successful aging of the elderly. With China's economic development and the gradual improvement of the medical security and pension system, many elderly people have maintained economic independence in their lives. As the growth of age is accompanied by the inevitable decline of physical function, the proportion of medical expenditure of the elderly increases. If the elderly has sufficient financial resources, there is no need to worry about the pressure brought by life and medical treatment. The higher the personal income, the more it can improve the self-esteem of the elderly, so as to promote successful aging. Similarly, the higher the personal income, the better the conditions to meet their own needs, including physical and psychological needs, which can promote the successful aging of the elderly. This was also consistent with the results of a study in Guangzhou, China (Pei et al., 2019).

In the elderly, self-efficacy refers to the elderly's perception or belief that he or she can take adaptive behavior in the face of challenges in the environment. In this study, the mean score of self-efficacy was 28.75 (SD =6.70). The result of self-efficacy evaluation was not high, which may be related to the age of the sample. In this study, the average age of the elderly was 78.42 years old. With the growth of age, the ability of the elderly to complete things independently is declining, and their creativity is also declining, which affects the self-confidence and self-efficacy of the elderly to a certain extent. In this study, most of the participants had no formal education experience. Low level of educational experience will lead to a low knowledge reserve, which to some extent affects the elderly's ability to deal with problems and may reduce self-efficacy.

The results of this study showed that there was a high positive correlation between self-efficacy and successful aging ($r = .72; p < .001$). This result was also similar to a successful aging study in Korea (Cha et al., 2012). The stronger the self-efficacy of the elderly, the stronger the ability to deal with the challenges of different environments or face new things. This was also consistent with the content of the Flood Successful Aging Theory. In the intrapsychic factors dimension, the ability of

the elderly to adapt to changes and solve problems directly affects the level of successful aging. The elderly with a good sense of self-efficacy has more confidence in maintaining their own health and can better adhere to the healthy behavior. The sense of self-efficacy of the elderly can help them deal with various problems more confidently, effectively deal with various pressures, maintain or even improve their physical, cognitive and psychosocial functions, so as to achieve successful aging. Other studies had also shown that self-efficacy has the value of predicting successful aging (Carver & Buchanan, 2016).

Implications

1. Nurses or healthcare providers should pay more attention on activities of daily living, life satisfaction, social support, income of elderly, and self-efficacy to promote successful aging of elderly.
2. Nursing teachers can apply the relevant factors of successful aging to teaching, and guide nursing students to better understand the relevant knowledge and factors of successful aging.

Recommendation

1. The researchers should conduct the predictive study of these 5 variables with successful aging.
2. Nursing intervention research focusing on activities of daily living, life satisfaction, social support, income of elderly, and self-efficacy to promote successful aging of elderly should be studied.
3. Research should also consider the possible impact of different geographical factors, such as whether there are differences in successful aging between the elderly living in urban areas and those living in rural area. Therefore, the next research is bound to include the rural elderly population and compare the current situation of successful aging in different regions.

Limitation

In this study, the subjects completed the questionnaire face to face with the assistance of the investigators. There was a possibility that some subjects answered the questions in a way they think was acceptable to the society.



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APPENDICES



APPENDIX A

Questionnaires in English and Chinese version

The six-item cognitive impairment test [6CIT]

1. What year is it?

Correct - 0 points

Incorrect - 4 points

2. What month is it?

Correct - 0 points

Incorrect - 3 points

3. Give the patient an address phrase to remember with 5 components,

Zhang Ming, Shanghai, Xuhui District, Damuqiao Road, No.125

4. About what time is it (within 1 hour)

Correct - 0 points

Incorrect - 3 points

5. Count backwards from 20-1

Correct - 0 points

1 error - 2 points

More than one error - 4 points

6. Say the months of the year in reverse

Correct - 0 points

1 error - 2 points

More than one error - 4 points

7. Repeat address phrase

Correct - 0 points

1 error - 2 points

2 errors - 4 points

3 errors - 6 points

4 errors - 8 points

All wrong - 10 points

The Demographic Questionnaire

Direction: Please read the questions carefully and give an honest answer. Please choose the answer as follow by tick or write down your answers in the space provided.

1. Age:

2. Gender:

Male Female

3. Religious belief

No Buddhism Catholicism Christian Taoism

4. Marital status

Single Married Divorced Widowed

5. Level of education

No formal education Primary school Junior high school

High school College

6. Numbers of children

No One Two Three or more

7. Type of medical insurance

No Agricultural insurance Commercial insurance Social insurance

8. Comorbidity (present illness)

No disease Hypertension COPD

Diabetes Arthritis Heart disease Others:

9. Monthly income:

Successful Aging scale (SAS)

Direction: Please read the following items carefully and tick each box according to your actual situation.

Evaluation content	Scoring criteria				
	Never	Occasionally	Sometimes	Often	Always
1. I can handle the things that need me at home and take good care of myself (eating, bathing, dressing, etc.).	0	1	2	3	4
2. -----	0	1	2	3	4
3. -----	0	1	2	3	4
4. -----	0	1	2	3	4
5. -----	0	1	2	3	4
6. -----	0	1	2	3	4
7. -----	0	1	2	3	4
8. -----	0	1	2	3	4
9. -----	0	1	2	3	4
10. -----	0	1	2	3	4
11. -----	0	1	2	3	4
12. -----	0	1	2	3	4
13. -----	0	1	2	3	4
14. -----	0	1	2	3	4
15. -----	0	1	2	3	4
16. -----	0	1	2	3	4
17. -----	0	1	2	3	4
18. -----	0	1	2	3	4
19. -----	0	1	2	3	4
20. At this age, I think I'm as good as or better than I thought I was.	0	1	2	3	4

The Barthel index of ADL

Evaluation content	Scoring criteria			
	0 score	5 score	10 score	15 score
1. Eat	Dependence	Need partial help	Independence	/
2. Take a shower	Dependence	Independence	/	/
3. Dress up	Need help	Independence	/	/
4. Dressing	Dependence	Need partial help	Independence	/
5. Control stools	Out of control	Occasional incontinence or the need for tool assistance.	Control	/
6. Control urine	Out of control	Occasional incontinence or the need for tool assistance.	Control	/
7. Go to the toilet	Dependence	Need partial help and need help getting undressed or using toilet paper.	Use toilet or bedpan independently, undress, flush or clean bedpan.	/
8. Bed chair transfer	Dependence Can't sit	Can sit, but needs a lot of help (2 people) to move.	Need a little help (1 person) or guidance.	Independence
9. Walk on level ground	Dependence	Moves independently in a wheelchair.	Need 1 person to help walk (physical or language instruction).	Can walk on a level road surface.
10. Go up and down the stairs	Dependence	Need help and supervision.	Independence, Assistive devices can be used.	/

Satisfaction with Life Scale (SWLS)

Direction: Please read the following five items carefully and fill in the appropriate value according to the index of 1 to 7 points to express your agreement with each item.

Evaluation content	Scoring criteria						
	Strongly disagree	Disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Agree	Strongly agree
	1 score	2score	3score	4 score	5 score	6 score	7 score
1. In most ways my life is close to my ideal.							
2.							
3.							
4.							
5. If I could live my life over, I would change almost nothing.							

Social Support Rating Scale (SSRS)

Direction: The following questions are used to reflect the support you have received in the society. Please answer them according to the specific requirements of each question and according to your actual situation. Thank you for your cooperation.

1. How many close friends do you have that you can rely on for support and help?

(1) None (2) 1 - 2 (3) 3- 5 (4) 6 or more.

2. In the past year, you: (select only one)

(1) Living alone in a room away from family.

(2) Often change the residence and live with strangers most of the time.

(3) Living with classmates, colleagues or friends.

(4) Living with family.

3. You and your neighbors: (select only one)

(1) Never care about each other, just a nodding acquaintance.

(2) Encounter difficulties the neighbors may be slightly concerned you.

(3) Some of the neighbors care a lot about you.

(4) Most of the neighbors care a lot about you.

4. You and your colleagues: (select only one)

(1) Never care about each other, just a nodding acquaintance.

(2) Encounter difficulties the colleagues may be slightly concerned you.

(3) Some colleagues care much about you.

(4) Most colleagues care about you very much.

5. Support and care received from family members. (Tick the appropriate box)

No support Little support General support Full support

A. Husband and wife (lovers)

B. Parents

C. Sons and daughters

D. Brother, sister

E. Other members (e.g., sister-in-law)

6. In the past, you have received financial support and practical problem-solving help in times of emergency:

(1) No source.

(2) The following sources (multiple options): A. Spouse; B. Other family members; C. Friend D. Relatives; E. Colleagues; F. Work unit; G. Party, caucus, trade union and other official or semi-official organizations; H. Non-official organizations such as religious and social organizations; I. Others (please list)

7. In the past, you have received comfort and care from the following sources:

(1) None.

(2) The following sources (multiple options): A. Spouse; B. Other family members; C. Friend D. Relatives; E. Colleagues F. Work unit; G. Party caucuses, labor unions and other official or semi-official organizations H. Non-official organizations such as religious and social organizations; I. Others (please list)

8. How do you talk about your troubles: (select only one)

(1) Never complain to anyone.

(2) Only explain to one or two people who are very close to you.

(3) If a friend asks you, you will say it.

(4) Take the initiative to tell your troubles to get support and understanding.

9. How to help you in case of trouble: (select only one item)

(1) Only rely on your own, do not accept the help of others.

(2) Seldom ask others for help.

(3) Sometimes ask others for help.

(4) Often seek help from family members, relatives and friends and organizations when in difficulty.

10. For groups (such as caucuses, religious organizations, trade unions, student unions, etc.) to organize activities, you: (select only one)

- (1) Never
- (2) Occasionally
- (3) Often
- (4) Take initiative and be active.



General Self-Efficacy Scale (GSES)

Evaluation content	Scoring criteria			
	Totally incorrect (1 score)	Somewhat correct (2 score)	Mostly correct (3 score)	Absolutely correct (4 score)
1. I can always solve problems if I try my best.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10. No matter what happens to me, I'm fine with it.				

六项认知损害测试(6CIT)

1. 今年是哪一年?

正确-0 错误-4

2. 现在是几月?

正确-0 错误-3

3. 请记住下列信息(包括五项信息的地址)

张明, 上海市, 徐汇区, 大木桥路, 125号

4. 现在什么时间?

正确-0 错误-3

5. 从20倒数到1。

正确-0 错误1个-2 超过一个错误-4

6. 从一年的最后一个月倒数到第一个月。

正确-0 错误1个-2 超过一个错误-4

7. 重复一下刚才记住的地址信息。

正确-0 1处错误-2 2处错误-4

3处错误-6 4处错误-8 全部错误-10

人口统计问卷

导语： 请仔细阅读该问卷的内容并如实做出回答。请在方框内打“√” 或者在空白处填下你的答案。

1. 年龄：

2. 性别：

男 女

3. 宗教信仰

没有信仰 佛教 天主教 基督教 道教

4. 婚姻状况

单身 已婚 离异 丧偶

5. 受过的教育水平

没有受过正规教育 小学 初中 高中 大学

6. 拥有子女数量

没有子女 一个 二个 三个或更多

7. 拥有医疗保险类型

没有 农业保险 商业保险 社会保险

8. 目前身体患病情况

没有疾病 高血压 慢性阻塞性肺病

糖尿病 关节炎 心脏病 其他：

9. 每月收入：

成功老龄化问卷

导语：请仔细阅读以下条目，并根据您的实际情况在各选项上打“√”。

条目内容	评分标准				
	从不	偶尔	有时	经常	总是
1. 家里需要我的事情我都能处理好以及照顾好自己(包括吃饭、洗澡、穿衣等)。	0	1	2	3	4
2.	0	1	2	3	4
3.	0	1	2	3	4
.....	0	1	2	3	4
.....	0	1	2	3	4
.....	0	1	2	3	4
.....	0	1	2	3	4
17.	0	1	2	3	4
18.	0	1	2	3	4
20. 在这个年龄，我认为我过的和我预想的一样好或者比我预想的更好。	0	1	2	3	4

Barthel指数评定量表

评价内容	评价计分标准:			
	0分	5分	10分	15分
1. 进食	依赖	需部分帮助	独立	/
2. 洗澡	依赖	独立	/	/
3. 修饰	需要帮助	独立	/	/
4. 穿衣	依赖	需部分帮助	独立	/
5. 控制大便	失控	偶尔失禁或需要器具帮助	能控制	/
6. 控制小便	失控	偶尔失禁或需要器具帮助	能控制	/
7. 如厕	依赖	需要部分帮助；在穿脱衣裤或使用卫生纸时需要帮助	独立用厕所或便盆，穿脱衣裤，冲洗或清洗便盆	/
8. 床椅转移	完全依赖他人，不能坐	能坐，但需要大量帮助（2人）才能转移	需少量帮助（1人）或指导	独立
9. 平地行走	完全依赖他人	在轮椅上独立行动	需要1人帮助行走（体力或语言指导）	能在水平路面上行走
10. 上下楼梯	依赖	需要帮助和监督	独立，可以使用辅助装置	/

生活满意度量表

导语：请仔细阅读下列五项，并根据在旁1至7分的指标，填上适当的数值，表达你对各项的同意程度。

评估内容	评分标准						
	非常不同意	不同意	少许不同意	中立	少许同意	同意	非常同意
	1分	2分	3分	4分	5分	6分	7分
1. 在大多数方面，我的生活接近我的理想。							
.....							
.....							
.....							
5. 如果我能重新活过，差不多没有东西我想改变。							

社会支持评定量表(SSRS)

导语：下面的问题用于反映您在社会中所获得的支持，请按各个问题的具体要求，根据您的实际情况来回答，谢谢您的合作。

1. 您有多少关系密切，可以得到支持和帮助的朋友？

- A. 一个也没有
- B. 1—2 个
- C. 3—5 个
- D. 6个或6个以上

2. 近一年来您：

- A. 远离家人，且独居一室。
- B. 住处经常变动，多数时间和陌生人住在一起。
- C. 和同事或朋友住在一起。
- D. 和家人住在一起。

3. 您与邻居：

- A. 相互之间从不关心，只是点头之交。
- B. 遇到困难可能稍微关心。
- C. 有些邻居都很关心您。
- D. 大多数邻居都很关心您。

4. 您与同事：

- A. 相互之间从不关心，只是点头之交。
- B. 遇到困难可能稍微关心。
- C. 有些同事很关心您。
- D. 大多数同事都很关心您。

5. 从家庭成员得到的支持和照顾（在合适的框内划“√”）

无 极少 一般 全力支持

- A. 夫妻（恋人）
- B. 父母
- C. 儿女
- D. 兄弟姐妹
- E. 其他成员（如嫂子）

6. 过去，在您遇到急难情况时，曾经得到的经济支持和解决实际问题的帮助的来源有：

- A. 无任何来源。
- B. 下列来源：（可选多项）
 - ① 配偶； ②其他家人； ③朋友； ④亲戚； ⑤同事； ⑥工作单位；
 - ⑦党团工会等官方或半官方组织； ⑧宗教、社会团体等非官方组织； ⑨其它：

7. 过去，在您遇到急难情况时，曾经得到的安慰和关心的来源有：

A. 无任何来源。

B. 下列来源：（可选多项）

① 配偶； ②其他家人； ③朋友； ④亲戚； ⑤同事； ⑥工作单位；

⑦党团工会等官方或半官方组织； ⑧宗教、社会团体等非官方组织； ⑨
其它：

8. 您遇到烦恼时的倾诉方式：

A. 从不向任何人诉述。

B. 只向关系极为密切的 1—2 个人诉述。

C. 如果朋友主动询问您会说出来。

D. 主动诉述自己的烦恼，以获得支持和理解。

9. 您遇到烦恼时的求助方式：

A. 只靠自己，不接受别人帮助。

B. 很少请求别人帮助。

C. 有时请求别人帮助。

D. 有困难时经常向家人、亲友、组织求援。

10. 对于团体（如党团组织、宗教组织、工会等）组织活动，您：

A. 从不参加

B. 偶尔参加

C. 经常参加

D. 主动参加并积极活动

一般自我效能感量表 (GSES)

评估内容	评分标准			
	完全不正确 (1分)	有点正确 (2分)	大部分正确 (3分)	完全正确 (4分)
1. 只要我尽力, 我总能解决问题。				
.....				
.....				
.....				
.....				
.....				
.....				
.....				
.....				
.....				
10. 无论什么事在我身上发生, 我都能 应付自如。				



APPENDIX B

Permission letter of the scale author

Permission letter to use the Chinese version of Successful Aging scale (SAS)

From chengyanling1988@126.com

Tuesday 29/6/2021 15:21 PM

To Chenyu Gu

Subject: The Chinese version of Successful Aging scale (SAS) 可以使用, 使用时请注明出处, 祝成功!

程彦伶

Permission letter to use the Chinese version of Satisfaction with Life Scale (SWLS)

From mtyyuen@hkucc.hku.hk

Tuesday 04/5/2021 17:09 PM

To Chenyu Gu

Subject: The Chinese version of Satisfaction with Life Scale (SWLS) 可以使用。

Dr Mantak Yuen, 香港大学教育系

Permission letter to use the Chinese version of Social Support Rating Scale (SSRS)

From xiaosy@live.com

Wednesday 16/6/2021 10:46 AM

To Chenyu Gu

Subject: The Chinese version of Social Support Rating Scale (SSRS)

同意!

肖水源

Permission letter to use the Chinese version of General Self-Efficacy Scale (GSES)

From wangcaikang@m.scnu.edu.cn

Saturday 04/24/2021 09:47 AM

To Chenyu Gu

Subject: The Chinese version of General Self-Efficacy Scale (GSES)

您好! 同意授权, 可以使用。标注出处即可, 谢谢!

祝顺利!

王才康



APPENDIX C

Responses to Participant information sheet and consent form

เอกสารแจ้งผู้เข้าร่วมโครงการวิจัย

(Participant Information Sheet)

รหัสโครงการวิจัย: G-HS034/2564.

(สำนักงานคณะกรรมการพิจารณาจริยธรรมในมนุษย์ มหาวิทยาลัยบูรพา เป็นผู้ออกรหัสโครงการวิจัย)

โครงการวิจัยเรื่อง: Factors related to successful aging among community dwelling the elderly in Wenzhou, China.

Dear participants

I am Ms. Chenyu Gu, a student in Master of Nursing Science (International Program) Faculty of Nursing, Burapha University Thailand. My study is “Factors related to successful aging among community dwelling the elderly in Wenzhou, China”. The objectives are to study level of successful aging of the elderly in the community in Wenzhou, China, and to study the association between activities of daily living, life satisfaction, social support, income of elderly, self-efficacy, and successful aging of the elderly.

This study will be a survey study. Participating in this study is voluntary. If you agree to participate in this study, you will answer the following questionnaires, which will take approximately 30-40 minutes. During the data collection period, the researcher will record the voice with the help of relevant equipment and the researcher will clarify any questions posed by the participants for clarity regarding the language or content. You will not get any direct benefits by participating in this study. However, the information you provide will contribute to the study of successful aging of the elderly, which will have far-reaching significance in alleviating the pressure of population aging on society. There will be no identified physical and psychological risk to the person participating in the study and no risk to the society.

You have the right to end your participation in this study at any time, and no necessary to inform the researcher, and it will not hamper their professional career. Any information collected from this study, including your identity, will be kept confidential. A coding number will be assigned to you and your name will not be

used. Findings from the study will be presented as a group of participants and no specific information from any individual participant will be disclosed. All data will be accessible only to the researcher which will be destroyed one year after publishing the findings. You will receive a further explanation of the nature of the study upon its completion, if you wish.

The research will be conducted by Ms. Chenyu Gu under the supervision of my major-advisor, Assistant Professor Dr. Pornchai Jullamate. If you have any questions, please contact me at mobile number: + 8615088998360 or by email 285464483@qq.com and/or my advisor's e-mail address pornchai@buu.ac.th. Or you may contact Burapha University Institutional Review Board (BUU-IRB) telephone number +66 038 102 620. Your cooperation is greatly appreciated. You will be given a copy of this consent form to keep.

Chenyu Gu



เอกสารแสดงความยินยอม

ของผู้เข้าร่วมโครงการวิจัย (Consent Form)

รหัสโครงการวิจัย:

(สำนักงานคณะกรรมการพิจารณาจริยธรรมในมนุษย์ มหาวิทยาลัยบูรพา เป็นผู้ออกรหัสโครงการวิจัย)

โครงการวิจัยเรื่อง: Factors related to successful aging among community dwelling the elderly in Wenzhou, China.

Date of data collectionMonth.....Year

Before giving my signature below, I have been informed by researcher, Ms. Chenyu Gu, about the purposes, method, procedures, benefits and possible risks associated with participation in this study thoroughly, and I understood all of the explanations. I consent voluntarily to participate in this study. I understand that I have the right to leave the study any time I want.

The researcher Ms. Chenyu Gu has explained to me that all data and information of the participants will be kept confidential and only be used for this study. I have read and understood the information related to participation in this study clearly and I am signing this consent form.

Signature

.....

Participant

(.....)

参与者信息表

(Participant Information Sheet)

研究项目代码 : G-HS034/2564

课题研究计划: 温州社区老年人成功老龄化的相关因素分析

亲爱的参与者

我是泰国东方大学护理学院护理科学硕士(国际项目)的学生顾晨宇。我的研究是“中国温州社区老年人成功老龄化的相关因素分析”。研究目的是了解温州市社区老年人成功老龄化水平,探讨老年人日常生活活动能力、生活满意度、社会支持、收入情况、自我效能感与老年人成功老龄化的关系。

本研究将是一项自愿参加的调查研究。如果您同意参加本次研究,您将回答以下问卷,问卷大约需要30-40分钟。在数据收集期间,研究者将会借助相关设备对访谈内容进行录音,同时帮助澄清参与者提出的任何关于语言或内容的问题。参与本研究,您提供的信息将有助于老年人成功老龄化的研究,对于缓解人口老龄化给社会带来的压力具有深远的意义。该研究不会对参与研究的人造成身体和心理的伤害,也不会对社会造成风险。

您有权在任何时候终止参与本次研究,不需要通知研究人员。本次研究中收集的任何信息,包括您的身份,都将被保密。您的名字不会被使用,您的信息会用研究编码代替。研究结果将以一组参与者的形式呈现,不会披露任何单个参与者的具体信息。所有的数据只有研究人员才能获得,这些数据将在发表研究结果一年后被销毁。如您愿意,我们会在研究完成后,向您进一步解释研究的性质。

该研究将由顾晨宇女士进行,并在她的专业导师、助理教授Pornchai Jullamate博士的指导下进行。如果您有任何问题,请联系顾晨宇女士的手机:+8615088998360,或者电子邮件:285464483@qq.com,或顾晨宇女士的导师的电子邮件:pornchai@buu.ac.th。您也可以联系泰国东方大学伦理机构审查委员会(BUU-IRB)电话:+66 038 102 620,非常感谢您的合作。本同意书会发给您一份副本供您保存。

顾晨宇



เอกสารแสดงความยินยอม

ของผู้เข้าร่วมโครงการวิจัย (Consent Form)

知情同意书

研究项目代码: G-HS034/2564

课题研究计划: 温州社区老年人成功老龄化的相关因素分析

数据收集的日期: _____ 年 _____ 月 _____

在我签字之前，研究人员顾晨宇女士已经详细告知了我参与本次研究的目的、方法、流程、益处和可能存在的风险，我对这些解释都很了解，本人自愿参与本次研究，我明白我有权随时离开本次研究。

研究人员顾晨宇女士向我解释参与者的所有数据和信息将被保密，仅用于本研究。我已清楚阅读和理解参与本次研究的相关信息，并签署此同意书。

签名:

.....

(参与者)

(.....)



APPENDIX D

Ethical approval letter



เอกสารรับรองผลการพิจารณาจริยธรรมการวิจัยในมนุษย์
มหาวิทยาลัยบูรพา

คณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยบูรพา ได้พิจารณาโครงการวิจัย

รหัสโครงการวิจัย : G-HS034/2564

โครงการวิจัยเรื่อง : Factors related to successful aging among community dwelling the elderly in Wenzhou, China

หัวหน้าโครงการวิจัย : MRS.CHENYU GU

หน่วยงานที่สังกัด : คณะพยาบาลศาสตร์

BUU Ethics Committee for Human Research has considered the following research protocol according to the ethical principles of human research in which the researchers respect human's right and honor, do not violate right and safety, and do no harms to the research participants.

Therefore, the research protocol is approved (See attached)

1. Form of Human Research Protocol Submission Version 1 : 1 June 2021
2. Research Protocol Version 1 : 1 June 2021
3. Participant Information Sheet Version 1 : 1 June 2021
4. Informed Consent Form Version 1 : 1 June 2021
5. Research Instruments Version 1 : 1 June 2021
6. Others (if any) Version - : -

วันที่รับรอง : วันที่ 1 เดือน มิถุนายน พ.ศ. 2564

วันที่หมดอายุ : วันที่ 1 เดือน มิถุนายน พ.ศ. 2565

ลงนาม นางสาวมร แยมประทุม

(นางสาวมร แยมประทุม)

ประธานคณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยบูรพา
ชุดที่ ๓ (กลุ่มคลินิก/ วิทยาศาสตร์สุขภาพ/ วิทยาศาสตร์และเทคโนโลยี)



BIOGRAPHY

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