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The Satisfaction of the Elderly with Moderate and Severe Disability in Geriatric Nursing Institutions: a Case Study of Geriatric Nursing Institutions in Chengdu

LIAO Qiwu

Doctor of Management

Supervisors:
PhD Luis Manuel Dias Martins, Assistant Professor,
ISCTE University Institute of Lisbon

PhD CHEN Xu, Professor,
University of Electronic Science and Technology of China

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iscte INSTITUTO UNIVERSITÁRIO DE LISBOA	**The Satisfaction of the Elderly with Moderate and Severe Disability in Geriatric Nursing Institutions: a Case Study of Geriatric Nursing Institutions in Chengdu**	LIAO Qiwu

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Abstract

Facing severe challenges of aging population, China’s geriatric nursing market has a substantial development potential. However, there are insufficient resources in terms of providing nursing service and medical treatment to the elderly and the market develops at a slow speed. This thesis intends to apply the empirical research approach to investigate the satisfaction of the disabled elders and their families with the geriatric nursing hospitals in Chengdu in terms of the environment, medical treatment, service, administration and trust perception. Through theoretical analysis and construction of DES model (the Disabled Elder's Satisfaction in elder hospital, DES) and field investigation, it is found that there is a positive correlation between the respondents’satisfaction of environment, medical treatment, service, administration and trust perception on one hand and the overall satisfaction of the nursing hospital. The environmental satisfaction is the most influential factors and service perception is second to it. Based on the current development of geriatric nursing hospitals in Chengdu and the conclusion of this thesis, this thesis puts forward countermeasures and suggestions for the development of the geriatric medical and nursing market in Chengdu.

Keywords: Chengdu; Moderate and Severe Disability; Elderly; Satisfaction; DES model
JEL: I11; M31

Resumo

Considerando os diferentes desafios que se colocam ao evelhecimento da população, a enfermagem geriática apresenta um substancial potencial de desenvolvimento. Contudo, há atualmente recursos insuficientes em temos de oferta de serviços médicos e de enfermagem aos idosos e o desenvolvimento deste sector desenvolve-se muito lentamente. Esta tese pretende, através de uma abordagem empírica, identificar a satisfação dos idosos e respetivas famílias com os hospitais de cuidados continuados em Chengdu (em temos de meio envolvente, tratamento médico, serviço prestado, administração e a confiança que detém na instituição). Através de uma análise teórica baseada no modelo DES (the Disabled Elder's Satisfaction in Elder Hospital) e investigação de terreno, foi identificada uma correlação positiva entre a satisfação dos respondentes com a envolvente, o tratamento médico, o serviço administrado e a confiança por um lado e a satisfação global do corpo de enfermagem do hospital por outro. A envolvente é o fator mais significativo que influencia a satisfação, seguido da perceção da qualidade do serviço prestado .Basedo no desenvolvimento atual dos hospitais de cuidados continuados em Chengdu, esta tese baseada nas conclusões alcançadas apresenta propostas e sugestões para o desenvolvimento da medicina e enfermagem geriática em Chengdu.

Palavras-chave: Chengdu; Moderate and Severe Disability; Elderly; Satisfaction; DES model

JEL: I11; M31

摘要

随着社会经济发展及医疗水平的提高，全球均面临人口老龄化的严峻挑战。中国是世界上老龄人口最多的国家，数据显示，2018 年中国有 60 岁以上人口 2.41 亿，占全国总数的 17.3%，而 16 岁以下人口数为 8888 万，占中国总人口数的 6.39%，中国老龄化在社会发展和经济发展不匹配阶段提前到来。四川作为中国人口大省，截止 2018 年，65 岁及以上人口已达到 14.17%，老龄化程度进一步加剧额，而成都市作为四川省会，60 岁以上的老年人已达到 315 万，达到户籍人口的 21.35%，同样面临着严峻的老龄化问题。

在对国内运行的老年护理医院的相关调查中，发现老年护理医院的总体分布不均衡，加之老年人商业保险的缺失，导致一些老人因长期住院而无法报销的情况。通过对成都地区老年护理机构的走访调研，发现老年护理医院的医生、护士及护工队伍普遍存在职称低、学历低、高龄化等现象。

本文拟通过调查问卷形式，运用结构方程模型方法，从环境满意度、医疗满意度、服务满意度、管理满意度、信任感知五个方面，对成都市社区失能老人、失能老人家属对老年医疗机构的满意度进行调研，通过理论分析与构建 DES 模型（the Disabled Elder's Satisfaction in Edlder Hospital，DES），进行实地调查，结果发现：环境满意度、医疗满意度、服务满意度、管理满意度和信任感知均对中重度失能老人的满意度评价具有正相关性。通过路径系数分析，可以看出：信任感知的路径系数为 0.794，环境满意度的路径系数为 0.892，医疗满意度的路径系数为 0.751，服务满意度的回归系数为 0.748，管理满意度的回归系数为 0.611，可以看出中重度失能老人对于老年医护机构的环境满意度重视程度最高，其次是信任感知。

据此，本文结合成都市老年医疗机构发展现状，结合本文结论，为成都市老年医护市场发展提出对策建议，通过政府导向，构建老年医疗机构发展良好环境，解决失能老人因长期照护而产生的费用，建立护工培训制度和机制；加大金融支持，建立健全老年医疗保险保障制度，通过保险资金的保障，加快老年医护行业的发展，设立专项资金，对老年医护领域内的服务供给主体进行适当的补贴，吸引更多社会资本进行老年医护服务投资；引导企业探索，合力促进老年医护市场健康发展，不同人群需求导向及对服务

内涵需求不一样，对企业而言，更精准的明确服务人群，确定服务导向，是明确规划企业发展和提供服务内容的前提。

关键字：成都市,中重度失能,老人,满意度，DES 模型

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感恩一切！使我完成学业！谢谢各位！

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Chapter 1: Introduction

1.1 Research background

With the development of social economy and the medical science, the average life span of human beings has increased, and the whole world is facing the severe challenge of population aging. According to the 2015 global aging cause observation index of HelpAge international, the number of global population aged 60 and over is about 901 million, accounting for 12.3% of the world's population. By 2030, the proportion will reach 16.5%. Globally, the number of people over 60 now exceeds that of children under 5. By 2050, the number of people over 60 will exceed that of population under 15. The growth of the number of elderly is particularly rapid. It is estimated that from 2008 to 2040, the global population will increase by 33%, the elderly over 65 will increase by 160%, and the elderly over 80 will increase by 233% (Kinsella & He, 2009).

China is the country with the largest elderly population in the world. According to statistics(Research Report on the Development Trend and Investment Strategy of China's Geriatric Nursing Industry in 2017-2022), in 2018, China has a population of 241 million who are over 60 years old, accounting for 17.3% of the national total, while the population under 16 is 88.88 million, accounting for 6.39% of China's total population. The mismatch between social development and economic development appeared earlier than expected. As a province of large population in China, until 2018, the population aged 65 and over has comprised 14.17% of the provincial population. Chengdu, as the capital of Sichuan province, is also facing a serious aging problem. The number of its population over 60 has reached 3.15 million, making up 21.35% of provincial registered population.

Murryay et al. (2012) found that with the gradual increase of age, the prevalence, disability rate and mortality rate of the elderly gradually increased. Often one person is sick, but the disease performance is not typical, and the disease progresses rapidly in the event of an accident. Multiple senile syndromes or senile problems occur simultaneously. These

characteristics often lead to an increase in the number of disabled elderly populations, and the incidence of disability in the elderly population increases with age. According to the 2011 National Survey Report on the Elderly with Disability in Urban and Rural Area, as of 2010, the number of disabled urban and rural elderly in China was 33 million. It is estimated that by 2015, the number of disabled elderly will exceed 40 million. Zhang (2014), by using the highly operational KATZ scale, found that the disability rate of urban and rural elderly in China was between 10.48% and 13.31%, of which 84.3% were mildly disabled and 5.1% were moderately disabled and 10.6% is severely disabled. Elderly people with disability needs care in daily life. If you suffer from diseases and comprehensive medical care services provided by professional medical staff.

In China, the overall distribution of Geriatric Nursing Hospital is imbalanced, for example, in economic prosperous regions like Shanghai, Zhe Jiang and Suzhou, the quantity and quality of Geriatric Nursing Hospital are better than other areas of China. Instead, in the economically backward provinces in western China, the Geriatric Nursing Hospital is not well developed. There are no unified judgment standards for admission and discharge in Geriatric Nursing Hospital in China, no unified quality control standard, no unified supervision organization for Geriatric Nursing Hospital. The current medical insurance system is not suitable for the Geriatric Nursing Hospital and also because of the lack of commercial insurance, the expenses for long-term hospitalization cannot be reimbursed.

At present, in China, most of the doctors and nurses from Geriatric Nursing Hospital are at a relatively high age with low educational degree and professional title，which results in the fact that geriatric nursing hospitals are operating in low profits or even at a loss.

Based on the situation mentioned above, this thesis intends to investigate the satisfaction of the disabled elders and their families with the geriatric nursing hospitals in Chengdu through questionnaires. Through theoretical analysis and construction of the DES model as well as the field investigation, this thesis aims to assist the government in policy making and guiding the development of relevant local enterprises.

1.2 Research issues

According to the basic nursing standards (2011 edition) issued by the Ministry of Health of China, the definition of elderly nursing hospitals is: the institutions for disease prevention, treatment and hospice care for the elderly, mainly for those elderly who are not taken care of. Different from the general nursing homes and general hospitals, the elderly nursing hospitals take into account the two functions of hospitals and nursing homes, and can meet the needs of the elderly for basic medical care and nursing.

From the perspective of public product theory, it is part of the national basic health services and basic medical services to provide comprehensive medical and nursing services for the elderly who are at a high age, suffering multiple diseases, and with dementia or disability and these services are public products to some extent. The comprehensive care service for the elderly includes basic health service and basic medical service, most of which are overloaded, charged, competitive in consumption and exclusive in benefit, so it belongs to the category of public goods to some extent. The elderly nursing hospital can provide home care, community care, rehabilitation care and inpatient care and comprehensive treatment services for special groups of elderly according to different demands.

Disability mainly refers to the physical or mental inability to live independently due to accidents, diseases and other reasons, and the complete or partial loss of self-care ability. The disabled old people mainly refer to the old people who "lose the ability of self-care". According to the internationally accepted standards, the ability of self-care is mainly judged by six indicators: eating, dressing, getting on and off the bed, walking indoors, going to the toilet and bathing.

However, due to different national conditions, population structures and levels of economic development, countries have different definitions of elderly with disability. Kinney (1996) believed that the lack of physical function caused by age, diseases, accidental injury and other reasons affected their ability of self-care, resulting in the occurrence of disability. Dang (2009) believed that if people must rely on or partially rely on the care of other to live a life, it is disability. In addition, with the emergence of various scales of the elderly's

behavioral ability, the evaluation criteria for the elderly's disability are gradually clear, especially the introduction of ADL and IADL scales in which the health condition of the disabled elderly is divided into four levels: mild disability, moderate disability, severe disability and extremely severe disability. At the same time, due to the brain degeneration and psychological pressure of the elderly, the disability caused by mental and psychological reasons have been gradually studied and quantified by more and more scholars.

Therefore, based on the research results of the World Health Organization and scholars from all over the world, when measuring the basic status of the disabled elderly, the disability caused by mental causes is also included in the scope of the survey object. Therefore, the definition of the disabled elderly in this thesis is: people over 60 years old who lose self-care ability in life and are partially or completely dependent on the assistance and attention of others in daily life due to accidental injury, disease or mental disorders.

Combined with the definition of the disabled elderly in the previous thesis, the survey object of this thesis is: the disabled elderly who stay in the geriatric nursing institutions for a long time. The long-term stay in geriatric nursing institutions mainly refers to the one-time stay of disabled elderly in geriatric nursing institutions for more than three months. Considering that the disabled elderly due to mental illness can not complete the questionnaire survey independently, therefore, in the survey, most of them are evaluated from the perspective of family members.

For the assessment of disability state, this thesis uses the world-wide functional independence assessment (FIM) (Tölle, Yasner, & Pieper, 1993). According to the scoring rules of the scale, disability is divided into seven levels, namely, basic independence, very light dependence, conditional independence, light dependence, medium dependence, heavy dependence, very heavy dependence and complete dependence.

According to the previous definition of the disabled elderly, the determination of the disability level of the elderly, combining with the scope of the elderly admitted to the geriatric nursing hospital, we define the elderly aged 60 years old and above, who are moderately dependent, severely dependent, extremely dependent and completely dependent, who are rated 71 or less in FIM score, as the elderly with moderate or severe disability, which

is the object of this study.

Through questionnaire survey of the elders with disability and their family members regarding their physical assessment and investigation of the present situation of the Geriatric Nursing Hospital, the thesis aims to answer the following questions:

First, what is the demand of the elderly with moderate and severe disability in Chengdu for the geriatric nursing institutions and what are the factors that influence their choices when choosing these organizations?

Second, what is the satisfaction level of these diabled families with the current nursing service that they are receiving?

Third, what advice can be provided in terms of the service standards, service content and future development of these nursing institutions?

1.3 Research objectives and significance

The objective of this thesis is to study the shortcomings and the major concerns of the elderly customers of the Chengdu geriatric nursing market by analyzing the satisfaction of the moderately and severely disabled elderly in Chengdu's geriatric medical and nursing institutions. The thesis also serves as a reference for other entities who have the intention of entering the market and finally provides theoretical support for the government to formulate policies and guide the development of related enterprise, which has theoretical and practical significance.

In terms of theoretical significance, first, to study the demand of the elderly for nursing and medical service and their satisfaction is helpful to provide a more complete theory of health services planning, and to promote the rational use of health resources. Furthermore, it provides the theoretical basis for improving the quality of medical and nursing service for the senior citizens; second, to study the supply and demand of Geriatric Nursing Hospital’s service will help further integrate the gerontology and administration science, and promote the development of the medical and health administration.

In combination of the theoretical significance, the thesis also possesses great practical

sinificance for the society, the government and the market practitioner. First, the research and analysis of the disabled elderly's satisfaction with the nursing hospitals is helpful to reveal that the medical care services for the disabled elderly is a complex social engineering, is a scientific system of supply and demand, both sides (supply and demand) should take positive and effective measures to promote the effective interaction between the supply and demand.

Second, to study the relevant factors that influence the elderly's satisfaction with the nursing hospitals is conducive to the government, the community, the relevant practitioners, the elders to take effective measures and ensure that the elders will be taken care of and the rational utilization of medical resources. It has important practical significance to build the medical care services system.

Third, to study the relevant factors of the supply and demand of Geriatric Nursing Hospital can help the supplier to establish the "need-oriented" operation guidance, to provide more professional service and improve the flexibility of supply as well as guide the development of enterprise and determine the investment scale.

1.4 Research method

Selection of research methods depends on the nature and characteristics of research object and needs of research purpose. The operation of Geriatric Nursing Hospital administration should be based on market supply and demand balance, the main studies of this thesis relates to Maslow's Hierarchy of Needs, Total Quality Control, Social Administration Innovation and some other comprehensive theoretical knowledge. Adopting the Literature Research, Field Research, and Theoretical Modeling, the key is to integrate theory with practice.

(1) Literature research. To review and analyze the research and development status for Geriatric Nursing Hospital at home and abroad, and lay the foundation of elders' demand for Geriatric Nursing Hospital by using Maslow's Hierarchy of Needs; and adopt the Total Quality Control theory to find the existing problems in the supply and demand of Geriatric Nursing Hospital; to bring up necessity of establishing the long-term care insurance

according to the Public Services theory and Public Goods theory; to explore the standardization construction of the Geriatric Nursing Hospital services by using the theory of Social Administration Innovation, in order to provide better medical treatment and nursing care services for elderly people.

(2) Field Research includes the questionnaire of the satisfaction of disabled elders and their family members with geriatric nursing hospital, survey of the physical condition of the disabled elderly, and the survey of supply and operation condition of geriatric nursing hospital.

Theoretical modeling analyses the influencing factors affecting the elderly with moderate and severe disability in the nursing hospital according to the classic consumer satisfaction evaluation model and uses SPSS19.0 to determine the main influencing factors. The DES theoretical model is established, and the hypothesis of the model is thoroughly tested and confirmed, so as to provide advice and guidance for the development of the geriatric nursing industry in Chengdu.

1.5 Research content

The thesis aims to provide a thorough understanding of the satisfaction of the disabled elderly with the geriatric nursing hospitals in China and analyze the trend of this industry by studying the current situation, so as to help deliver effective care to the elderly with disability and enable the elderly to live with dignity and the professional medical institutions to grow up healthily.

This thesis consists of the following parts:

Chapter 1 as the introduction mainly discusses the research background, content, significance of this thesis, the structure of the thesis, research methods.

Chapter 2 as the literature review of domestic and foreign related researches explains the theoretical basis of models and concepts in this thesis.

Chapter 3 analyzes the market situation of Geriatric Nursing Hospital in Chengdu and discusses the existing problems.

Chapter 4 forms the research model based on the literature, completes the research scale of consumer satisfaction with the disabled elderly nursing market, and proposes the theoretical hypothesis based on the research scale. This chapter also clarifies the validity and scientificity of the research.

Chapter 5 elaborates the research design, proves the scientificity and validity of the questionnaire, and completes the descriptive analysis of the collected questionnaire. It analyzes the data by SPSS19.0, AMO16.0 and tests the hypothesis mentioned above and comes up with research conclusion and application advice.

Chapter 7, based on the satisfaction survey and the analysis of the existing elderly nursing market explores the standardization construction of the service for the Geriatric Nursing Hospital in China. It also concludes the innovation point of the thesis, disadvantages and future research.

Accelerating the construction of the geriatric medical and nursing institution system is an important part of building a harmonious society and improving people's life happiness. It is also an important support for China's social and economic transformation. In the context of building a well-off society in an all-round way, the geriatric medical and nursing market will usher in a golden development period.This chapter combines the research issues, determines the research methods, and builds the research framework of this thesis, through the analysis of social hot spots and combining with the actual situation of the medical care market for the elderly with moderate and severe disability in Chengdu, the thesis obtains certain practical significance and academic value.

Chapter 2: Literature Review

In this aging society, disabled seniors, as a special group in the elderly population, need more medical care resources, and the status quo of elderly people with disability is also complicated and urgent. The content of this chapter is aimed at concluding the domestic and foreign research results to fully demonstrate the practical significance and theoretical value of this thesis.

2.1 Consumer satisfaction model

Since 1965, customer satisfaction has attracted great attention since it was introduced into marketing study. The degree of customer satisfaction determines whether it will repeat purchase or have word-of-mouth promotion. It is also an important indicator for enterprises to improve their market competitiveness. Consumer satisfaction research can promote the transformation of enterprise service. By the research, the products and services are more targeted, and effective marketing effects are achieved in market segments. Similarly, in the field of geriatric care, the study of satisfaction of the elderly is also an important part of it. Many scholars at home and abroad have already made some achievements in consumer satisfaction research, and have already established mature theoretical models. This thesis is based on classic consumption. On the basis of the behavioral satisfaction research model, an attempt is made to analyze the satisfaction of the elderly with moderate to severe disability in the geriatric medical and nursing care market in Chengdu.

The model of Figure 2-1 is an earlier mature model introduced into consumer behavior research, but in its later development, researchers through studies discovered that this model has strong limitations, one being that consumers can not be completely rational, and the other being that it can not accurately reflect consumers' satisfaction evaluation of products in the decision-making process. Therefore, the researchers made some adjustments and supplements.

Important quadrant model is the most commonly used qualitative research model in the

study of customer satisfaction. The X-axis represents the score of customer satisfaction of the enterprise, which is an objective index. The Y-axis represents the score of the importance of customer satisfaction, which is the subjective judgment of the enterprise. Finally, the area is divided into four small areas (see Figure 2-2), which are respectively advantage area - areas with high scores of satisfaction and importance; improvement area - areas with low scores of satisfaction but high scores of importance; opportunity area - areas with low scores of satisfaction and importance; maintenance area - areas with high scores of satisfaction but low scores of importance. Through this model, enterprises can intuitively determine the contradiction between products and customer satisfaction, and upgrade products or improve marketing accordingly.

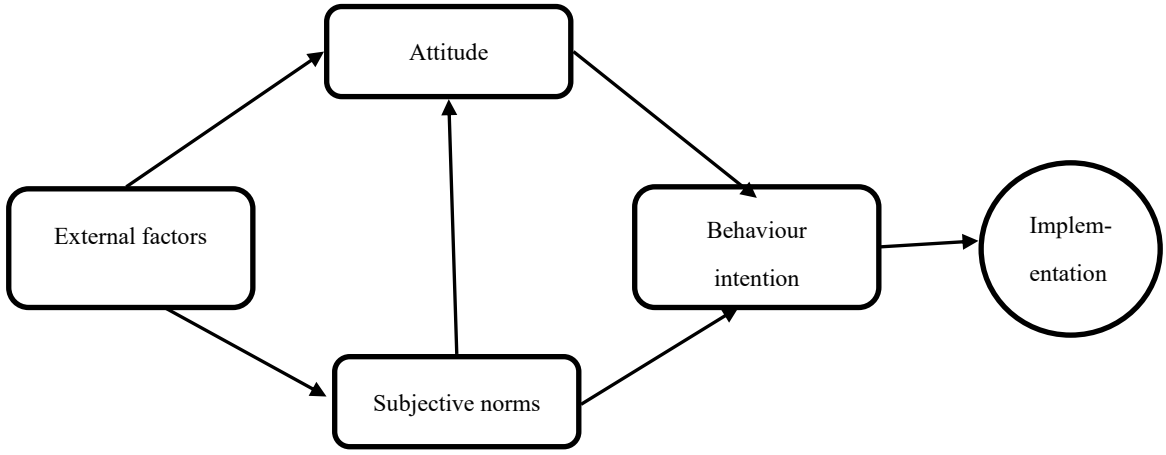

Figure 2-1 TAR Model

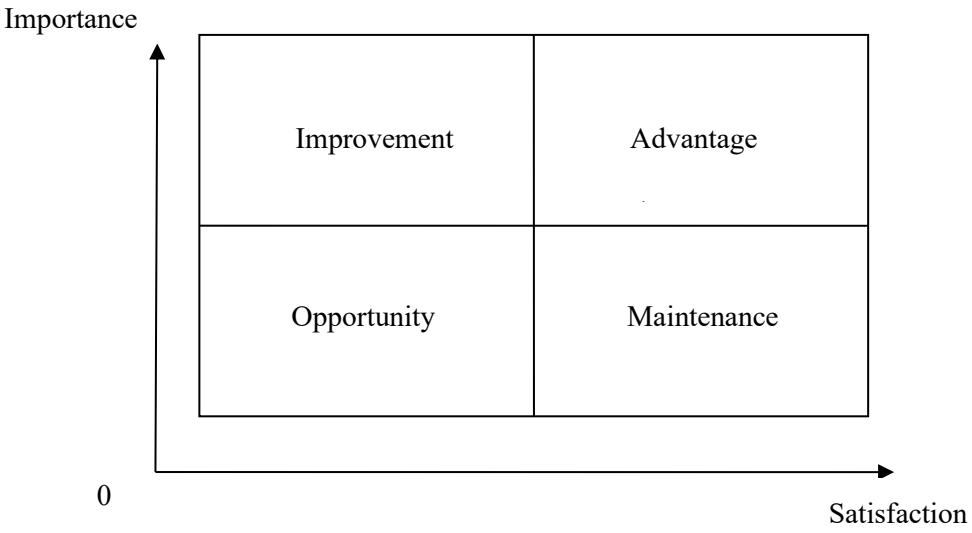

Figure 2-2 Important Quadrant Model

Kano model is a survey model of consumer satisfaction proposed by Yoshio Ono, a professor of Tokyo University of technology. The model classifies and sorts the user needs, and analyzes the non-linear relationship between product performance and consumer satisfaction. The model divides product quality characteristics into five categories (see Figure 2-3):

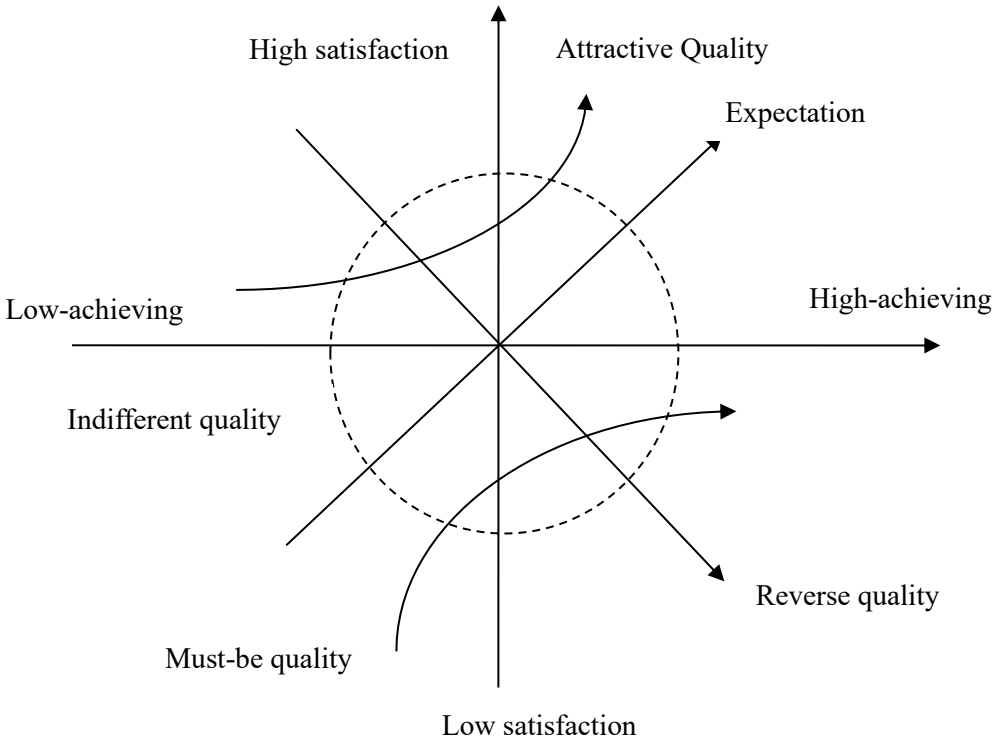

Figure 2-3 KANO Model

Must-be Quality:

Simply stated, these are the requirements that the customers expect and are taken for granted. When done well, customers are just neutral, but when done poorly, customers are very dissatisfied. Kano originally called these “Must-be’s” because they are the requirements that must be included and are the price of entry into a market.

One-dimensional Quality:

These attributes result in satisfaction when fulfilled and dissatisfaction when not fulfilled. These are attributes that are spoken and the ones in which companies compete.

Attractive Quality:

These attributes provide satisfaction when achieved fully, but do not cause dissatisfaction when not fulfilled. These are attributes that are not normally expected. Since these types of attributes of quality unexpectedly delight customers, they are often unspoken.

Indifferent Quality:

These attributes refer to aspects that are neither good nor bad, and they do not result in either customer satisfaction or customer dissatisfaction. It is interesting to identify these attributes in the product in order to suppress them and therefore diminish production costs.

Reverse Quality:

These attributes refer to a high degree of achievement resulting in dissatisfaction and to the fact that not all customers are alike.

This model links the customer satisfaction with the product quality characteristics, and makes a specific distinction, so that the enterprise can know how to improve the product or service, and promote the competitive capability of the enterprise while trying to improve the customer satisfaction. However, the main starting point of this model is from the angle of product characteristics, which can not directly measure the level of customer satisfaction, and this model is more conducive to improving the product performance of the enterprise.

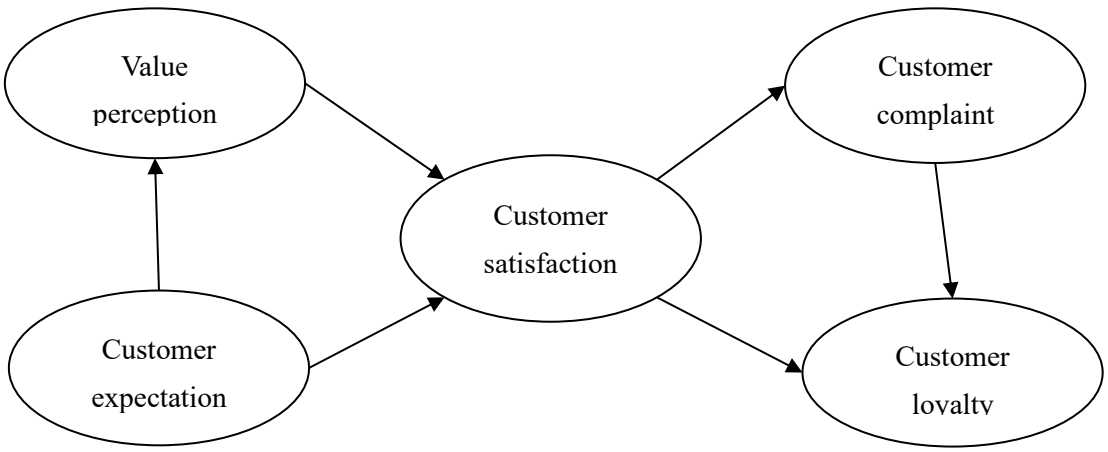

Figure 2-4 SCSB Model

The Swedish customer satisfaction index model (SCSB), proposed in 1989, is the first national customer satisfaction index model (see Figure 2-4). It mainly includes five index variables: value perception, expectation, satisfaction, and customer complaint and customer

loyalty. However, the model has limitations in practical application, as it is impossible to determine whether the main factor of marketing customer satisfaction is value perception or expectation.

American customer satisfaction index (ACSI), which is a comprehensive evaluation index of customer satisfaction level based on the process of product and service consumption, is a national customer satisfaction theoretical model with the most complete system and the best application effect at present (see Figure 2-5). The model is mainly based on the survey of consumer satisfaction in the process of consumption, which truly reflects the evaluation of consumer satisfaction in the process of product purchase. The model has two main systems, six structural variables: customer satisfaction influencing variables - expected quality, perceived quality and perceived value; customer satisfaction outcome variables - customer complaint, customer loyalty. This model can make the products of different enterprises in the same industry compare horizontally and determine the market competitiveness of their own enterprises. However, because the index model is mainly used for industry research, providing necessary guidance for the country and society, at the micro level of enterprise operation, it is unable to accurately measure the specific influencing factors of a certain enterprise's consumer satisfaction.

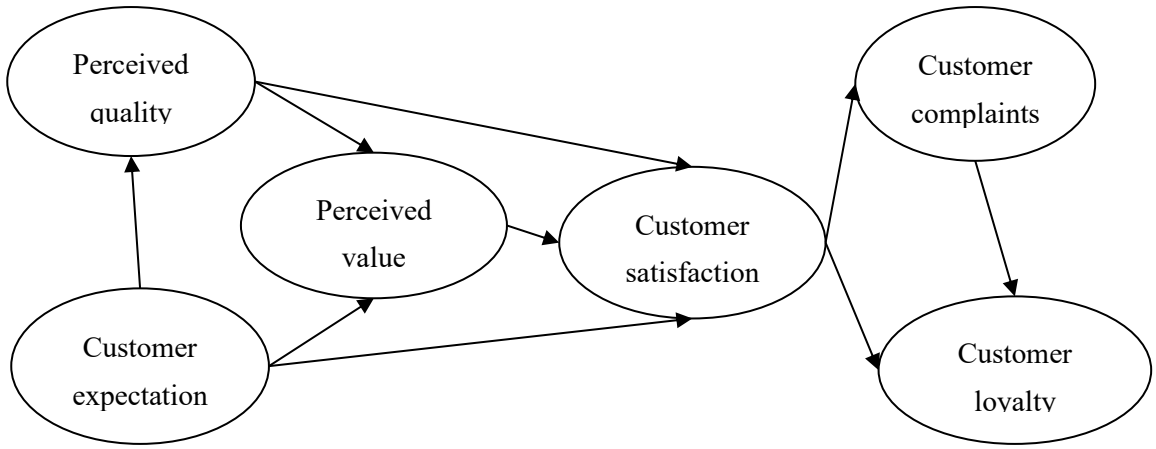

Figure 2-5 ACSI Model

Andersen's behavioral model for Health Service Utilization (Andersen's Behavioral Model) was first proposed by Dr. Andersen, a professor at the University of Chicago in 1968, and has been revised three times successively (see Figure 2-6). It is one of the classic models in the field of health service. After many revisions and supplements, the model holds that the

main influencing factors for individuals to decide whether to use medical and health care services are: environmental factors--external environment, health service development level; population characteristics--demographic characteristics, age structure, personal cognition; health behaviors--personal health behaviors and utilization of health services.; health outcomes--objective health status, cognitive health status and service satisfaction.The model can effectively analyze the motives and needs of people in the region in choosing medical and health institutions, and the model results are also conducive to the government and the market to improve and enhance in the key areas, thus allowing more people to choose to use medical and health care and improving the overall health level.

According to the model map, although the model involves the evaluation of consumer service satisfaction, it is only a subsidiary result of the model result and does not distinguish the factors influencing satisfaction evaluation. It is the evaluation of the overall satisfaction of health and medical institutions, with the aim of improving the public utilization rate of health and medical institutions and the social fairness of health care.

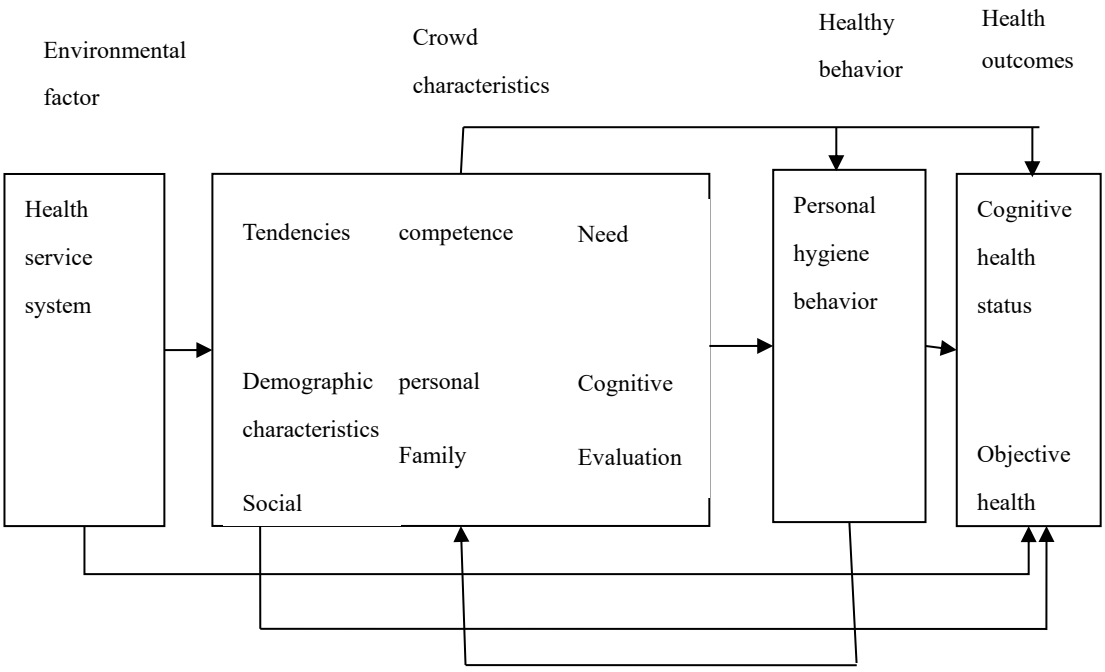

Figure 2-6 Andersen's Behavior Model of Health Service Utilization

2.2 Development status of geriatric nursing and health care industry at home and abroad

Geriatric nursing institutions originate from the particularity of nursing for the elderly, while nursing for the elderly mostly originates from nursing homes. The development history of geriatric nursing institutions is the product of the historical changes and development of institutions for the elderly and the aging population.In the process of population growth, the market information from the demand side functions as the baton of any country's health service system. With the aging of the world population, especially due to the population characteristics of high prevalence rate, high disability rate and high dementia rate of the elderly, the number of people who need nursing services increases. However, due to longer life expectancy, disabled elderly people have a higher demand for nursing and medical services (Padma, Rajendran, & Lokachari, 2010).

2.2.1 Development status of foreign geriatric nursing industry

In western developed countries, such as Britain, Germany, Japan and the United States, long-term care systems have been established based on different social welfare systems (Campbell, 1984; Krane & Kane, 1987; Geraedts, Heller, & Harrington, 2000), various forms of geriatric nursing institutions are established such as home and community care center and nursing hospitals to accommodate the elderly with different degrees of disability. The services provided include: daily life assistance, diagnosis and treatment, medical care, pain relief and analgesia, medication administration and rehabilitation measures, as well as higher quality convalescence and life care, providing more comprehensive medical care services for the disabled elderly (Fujisawa & Colombo, 2009). However, with the aging of the population, the working pressure and job burnout of the elderly nursing staff lead to a large gap in the number of institutions and quality service personnel in the geriatric medical and nursing institutions (Hsu, 2018).

The pension industry in Europe, the U.S. and other countries is closely related to changes in their population structure, which can be summarized into three periods: the first

period, from the late 18th century to the 1930s and 1940s, the traditional family-based pension method is relatively common, and the government's pension measures have not been implemented on a large scale; In the second period, from the 1930s and 1940s to the 1960s, due to World War II, all countries tended to age (Louis, 1992; Sen, Germain, & Chen, 1994). European and American countries have also gradually paid more attention to the elderly and formulated various special pension plans. Developed countries in Europe mainly adopted centralized resettlement and care for the elderly, or set up professional pension institutions to provide professional pension care. For the childless elderly, government mainly took care of them in welfare institutions and provided heath and medical care for a long period of time. In the third period, from the 1970s to the present, with the aging of the population and the change of population structure, the disease spectrum of the elderly population has expanded and the disabled population has increased (Murryay et al., 2012; Haider, Adler, & Schneider, 2018), the geriatric nursing industry has gradually become market-oriented, more and more social capital has entered and a new ecology of service industry with geriatric care as its core has been formed.

The emergence of many forms of geriatric nursing in most western countries is related to the introduction of relevant social insurance systems. Krane and Kane (1987) proposed LTC (long term care) for the first time. The idea is to provide medical care and personalized health and nursing care for the disabled elderly. Through improving the care services for the disabled elderly in terms of their health status and mobility, the goal of centralized care for the elderly is achieved, and the social service function of the geriatric medical and nursing institutions is completed.

In 1994, Germany implemented the Long-Term Care Insurance (LTCI), which is a compulsory form of insurance and implements the principle of "nursing insurance is subordinated to health insurance", which means that the insured must purchase long-term care insurance (Schulz, 2010). Long-term care services are divided into three levels according to frequency and duration, namely home care, hospitalization care and other care. Hospitalization care is mainly the functional work of the geriatric nursing hospital. Every three years, the government will adjust the financial subsidy to geriatric nursing institutions

according to the current market situation. Germany has provided diversified choices of nursing institutions for the elderly, mainly including nursing homes, apartments for the elderly and hospice care hospitals. Apartments for the elderly are the main form. 54% such apartments are hosted by charitable funds and churches, 36% by enterprises or individuals account for, and only 10% by the government (Schwark & Theis, 2008).

In 2000, Japan began to implement a long-term care insurance system for people over 65 years old. Japan's long-term nursing care organizations are also divided into facilities supported by government and private facilities. The facilities set up by the government include special care homes for the elderly, elderly health care facilities, rehabilitation and medical facilities, care apartments for the elderly, and low-cost nursing homes for the elderly. Private facilities include apartments for the elderly, collective houses for senile dementia, and life assistance houses. According to their functions, they are divided into two types: nursing care at home and in specific facilities. According to a survey conducted by Japan's Ministry of Health, Welfare and Labor in 2014, there are 33,060 preventive care centers and 39,383 general preventive care centers, 33,911 provide nursing care at home and 41,660 provide general care in the facility. Judging from the insurance facilities, there are 7,249 welfare facilities for the elderly, 4,096 health facilities for the elderly and 1,520 convalescent facilities (official statistics of the Ministry of Health, Labor and Welfare in 2014). Among them, 60% are for-profit enterprises account for 60% of home-vising care provider and 70% of enterprises that have special facilities and fee-based nursing homes (special facilities). Social welfare legal persons account for 20% in the former category and 24% in the latter category, and a certain proportion in the other categories are medical legal persons and financial groups (Endo, Satake, & Miura, 2011). The cost of all facilities shall be implemented according to Japan's agency insurance system: nursing care fees shall be covered by the nursing care insurance type, and the cost of medical treatment and outpatient hospitalization by the medical insurance.

The population structure of the United States began to change in the 1930s. The ratio of the elderly population to the unemployed population increased rapidly. The US Social Insurance Law was approved to be implemented in 1935, marking the beginning of the US

government's formal intervention in the administration of geriatric nursing institutions (Castle & Ferguson, 2010; Guo & McGee, 2012). At this stage, private long-term care facilities for the elderly began to be established.Since 1965, the National Medical Insurance has been implemented to ensure that Americans aged 65 and above receive medical insurance. This insurance has prompted many new nursing homes to develop rapidly in a short period of time. With the support of national and local governments, after decades of efforts, nursing homes have provided help and care for the elderly, especially the disabled and low-income elderly. There are five types of nursing home facilities in the United States: independent old-age community, auxiliary facilities, nursing home facilities, continuous care after retirement community, and nursing host families. Among them, auxiliary facilities and nursing home facilities can provide nursing services with medical treatment and rehabilitation. In the United States, 61.5% of nursing homes are privately owned. 30.8% are non-profit facilities and the remaining 7.7% belong to the government and other entities. 87.6% of nursing homes are in the scope of medical insurance and Medicaid insurance. 45.8% of nursing homes are operated independently and 54.2% of nursing homes are part of a franchised operation group (Jones et al., 2009), shown in Table 2-1.

Table 2-1 Long-term Care Quality Assurance Mechanisms in Britain, Japan and the United States

	Britain	Japan	U.S.A
Overall approach	Supervision	Supervision and staff training	Moderator and consumer feedbacks
Responsibility for quality assurance	Country	The state shall formulate corresponding policies.	The state formulates standards and the state carries out inspections.
Is Quality Assurance Separated from Payers	Yes	No	Not mentioned
Is private evaluation used	No	Sometimes	Sometimes
Involvement of Targeted Government Agencies	Yes	No	No
Inspection frequency	Not fixed, but at least once every three years	Once a year, on-site inspection every other year	Once a year
Level of how the details the standars are	Medium	High	High

Source: Wang, liu, and Zhang (2016)

Through literature review, it is found that developed countries in Europe and the United States mainly implement a hierarchical administration mechanism for the administration of

the elderly. According to the differences in physical health data, self-care ability and social ability of the elderly, the elderly move to different geriatric medical and nursing institutions, and thus social resources for geriatric medical and nursing care can be reasonably used and more elderly people can obtain medical care at a relativelly low expenses.

2.2.2 Development status of domestic geriatric nursing industry

The development of China's geriatric nursing institutions and geriatric nursing is also closely related to demographic changes. It has been 60 years since the "Five Guarantees" started in 1956 and the building of nursing home started in 1958 (Zhou & Chen, 2007). According to the data in the Research Report on the Development of China's Geriatric nursing Institutions, by the end of 2017, the number of beds for various types of geriatric nursing services in the country was 7.788 million. According to the calculation of the number of elderly population in the current year, the average bed resource was 30.9 beds/1,000 elderly, which is close to the level of developed countries, but only 47% of the geriatric nursing institutions have both medical and rehabilitation functions. At present, China's geriatric medical and nursing institutions are mainly divided into three types: public geriatric medical and nursing institutions-social welfare homes, nursing homes and day care institutions. For-profit private institutions--institutions set up by enterprises or individuals with an aim to gain profit; Private non-profit institutions-public welfare non-profit geriatric nursing institutions set up by certain groups (Jiang, Ding, & Qin, 2011).

According to the analysis of the research results of China Aging Science Research Center on the status of disabled elderly people in urban and rural areas across the country, the proportion of the elderly population in our country suffering from various chronic diseases such as cardiovascular and cerebrovascular diseases and inflammation is over 60%, and more than 37 million elderly people are in a disabled or semi-disabled state. Considering the risks, traditional geriatric nursing institutions basically do not accept disabled elderly people, or need disabled elderly people and their families to pay at a higher price, so the majority of disabled elderly people in our country choose to stay home. In 2013, the State Council promulgated "Several Opinions on Accelerating the Development of Nursing Services for the

Elderly", which clearly pointed out that the integration of medical care and nursing services should be actively promoted.

In China, Shi (2008) conducted a related survey of 53 hospitals in Shanghai that undertake the functions of geriatric nursing hospitals. It was found that the domestic care insurance system is still in the exploratory stage, the function of day care centers is single, the number of geriatric nursing hospitals is small, and there are also some problems in terms of the operation of these hospitals. At present, our country's special care services for the elderly mainly include home visiting service, community service, family sickbeds, nursing institution services and long-term hospitalization in general hospitals. Among them, the fees in geriatric nursing institutions and long-term hospitalization in general hospitals can be reimbursed by medical insurance, but the elderly, except for those in the pilot areas, are receiving home and community services all at their own expense, and the elderly and their families bear their own responsibilities (Li, 2014).

In Chengdu, Lin et al. (2015) investigated 6 public nursing institutions in Chengdu, 5 of which provided nursing care and medical treatment, 3 of which were able to carry out rehabilitation services, none of which were able to carry out hospitalization services. Gan and Li (2018) conducted a survey on the geriatric nursing situation in Chengdu. It was found that the community geriatric nursing institutions are small in scale, lack professional nursing skills, and cannot provide comprehensive geriatric nursing services due to lack of funds. According to the data in the report on the development of elderly population information and elderly health in Chengdu in 2018 (2019), by the end of 2018, Chengdu had 3.506 million people aged over 60, accounting for 21.34% of the registered population in the city. There are 520 institutions for the aged in the city, with a total of 123,100 beds. The number of beds accounts for 3.9% of the aged population. 24,500 disabled people are registered. The medical and nursing resources for the aged are seriously lower than the national average and the contradiction between supply and demand is prominent.

2.2.3 Review on current development of geriatric nursing industry

In terms of various long-term care facilities at home and abroad, the theory of "market

supply comes from demands" has been fully proved. Geriatric nursing hospital is an institution that provides medical care for the elderly, and it is within the scope of social public service provided by the government.With the aging of the population, the government's need to provide geriatric nursing for citizens is a part of social public services, which by its nature belongs to the category of Semi-public products. Semi-public goods have some attributes of public goods, mainly referring to the products and services provided by the government and used for social public needs. The core problem of the products is how to provide and how much to provide. Under the condition of market economy, the government provides public goods or semi-public goods according to the public choice theory. In the geriatric nursing service, the government's choice essentially reduces it to a issue of conflict of social interests. This can be reflected in the changes in the proportion of government funding and citizens' own contributions at home and abroad. However, for social harmony and the sustainable development of the system, citizens should also bear their own corresponding responsibilities.

It is analyzed that the development of domestic and foreign institutions for the aged is due to the increase of population and the gradual improvement of social welfare. The elderly population is suffering from multiple diseases and disability, and medical care, nursing and rehabilitation services are gradually added to the service portfolio for the aged. The emergence of various forms of geriatric nursing hospitals will help solve this difficult problem. With the development of society, the gradually defined concept of long-term nursing will give a better interpretation of the services that geriatric nursing hospitals need to provide. At the same time, through comparison, it is found that the contradiction between supply and demand of medical and nursing resources for the disabled elderly is prominent in our country. Specifically, in Chengdu area, the medical resources for the disabled elderly are relatively in short. As the area where main population settle in Sichuan, the medical market for the disabled elderly in Chengdu is bound to face more severe challenges with the passage of time.

2.3 Studies on connotation of geriatric nursing service for the disabled elderly

As a group of elderly people who need nursing, especially long-term care, they belong to a special group in the social population. The demographic characteristics of high prevalence rate, declining physical quality, gradual loss of self-care ability and high demand for medical resources are obvious. However, under the current nursing system for the elderly is not complete. Scholars have studied and analyzed the connotation of nursing care needed by the disabled elderly from various angles.

2.3.1 Theoretical research on nursing care for disabled elderly

(1) ADL theory

ADL (activities of daily living) refers to the level of daily living ability, which is used to define the standard of needed nursing care level. Currently, ADL is mainly used in rehabilitation or geriatric medical and nursing science. For normal people, their ADL is at a relatively high level, but for the old, sick, injured and disabled, their ADL may become quite difficult and complicated. If the elderly are unable to complete daily living activities, it may lead to loss of self-esteem and self-confidence, which will further aggravate the loss of living ability.

In the daily life of the disabled elderly, ADL level is usually considered as an important reference index for receiving medical care, which constitutes an important field of rehabilitation work for the disabled elderly. Ankuda et al. (2019) conducted a study on the disabled elderly in the United States due to disability. The results show that for the elderly with low ADL scores, they need more kinds of nursing assistance, while the elderly with relatively high ADL scores need less nursing assistance.

(2) Theory of Sustained Activities for the Elderly

The theory of sustained activity of the elderly, also known as continuous theory, belongs to the theory of adaptive aging in psychological research. The theory focuses on the

individual differences of the elderly, and provides targeted services and guidance on the basis of personalized research, which is more conducive to the elderly to adapt to a new social role and feel happiness.

The theory was first put forward by Whitbourne (2001) and Nakayama et al. (2003). According to the theory, regardless of the level of participation of the elderly in social activities, most of them experience as much positive energy and emotion as young individuals. For example, people with strong social skills can still carry out social activities as far as possible in geriatric medical and nursing institutions, and perception of happiness is relatively strong. Elderly people who like quiet and independent activities have a relatively strong sense of happiness when they are alone, walking or enjoying music.

This theory is widely used in the field of geriatric medical and nursing care, mainly through medical observation, so that the disabled elderly can maintain the status before disability to the greatest extent, and it helps the disabled elderly recover or adapt to the current state quickly.

(3) Environmental Theory

The theory was founded by Nightingale. She believes that creating a good environment is conducive to the recovery process for patients. The environment in the theory includes not only physical environment, but also social environment and psychological environment.

The core of the theory is the word "environment". Specifically for the elderly nursing care industry, basic environmental construction, social environmental conditions and psychological environment construction are also essential. Elderly nursing institutions provide a good and comfortable basic environment for the disabled elderly, which is conducive to the improvement or maintenance of the disabled elderly's physical condition, while good psychological environment construction can enable the disabled elderly to accept the existing physical condition as soon as possible and can cooperate with treatment more actively.

(4) Interpersonal relationship model theory

In the 1950s, Peplau put forward a new medical and nursing theory-interpersonal

relationship model theory. The theory focuses on the nurse-patient relationship as a special form of interpersonal relationship. It believes that patients can achieve a harmonious interpersonal relationship through communication and mutual understanding between the nurse and patient during hospitalization, thus facilitating the recovery of patients.

According to Peplau's interpersonal relationship model theory, good nurse-patient interpersonal relationship can be divided into four stages:

Familiarity stage: the stage of initial acquaintance between nurses and patients. During this period, the treatment plan for the patient's condition has not been clearly defined, the patient's mentality is relatively tense, and professional help is needed. Through communication with doctors and family members, the nursing staff can fully understand the patient and initially establish a nurse-patient relationship.

Determination period: the stage of determining the care and treatment plan. During this period, patients make basic responses to the medical care provided by nurses according to their own state, and nurses determine the caring plan according to the patient's state. During this period, patients' reactions to medical care can be divided into three categories: independent action, semi-dependent on nurses, and total dependent on nurses.

Development stage: the development stage of nurse-patient relationship. During this period, patients gradually recover their health through the medical care provided by nurses. At this time, nurses should focus on assisting patients to recover their self-care ability.

End stage: stage of recovery of patients. During this period, the patients gradually recover physically, relax physically and mentally, gradually restored their self-care ability in life, and the nursing services provided by nurses gradually decreased until the patients were discharged from hospital.

In the field of medical care for the elderly, the application of this theory can, on the one hand, effectively improve the perception of the disabled elderly on the level of medical care services in institutions. On the other hand, it can provide guidance for the development of geriatric medical and nursing institutions.

(5) Transcending the Individual Theory

This theory was put forward by Jean Watson in1985. Watson believes that human care is the core and essence of nursing, and personalized care is an essential element of human care. The theory of transcending the individual is also called the theory of caring for human nature, and its core view is to establish a "help-trust" relationship between medical staff and patients through care.

Under the guidance of this theory, nursing staff is required to communicate with patients in depth and establish trust. Specifically in the field of medical care for the elderly, it mainly requires nursing staff to establish a good humanistic care relationship with the disabled elderly, and nursing disabled elderly with good skills can also contribute to the psychological construction of the disabled elderly.

2.3.2 Research on the construction of geriatric nursing care system for the elderly with disability

VolkerKruger put forward Total Quality Control Theory (TQC) in his book Total Quality Administration in 1981. TQC refers to the supervision and control of all employees, the whole production process and the administration of an enterprise in order to achieve all the internal and external quality standards. At the beginning of this theory, it was mainly applied to manufacturing industry to improve product quality. With the development of economy, it gradually expands to sales and service industries, and intangible products also need quality control. The purpose of TQC is to improve the overall quality. Quality is the whole organizational process determined by the demands of the customer. TQC can achievement product improvement and promotion with relatively low cost. At the same time, quality control is also a concept. Only by continuously satisfying the customer's needs can the product maintain its vitality and enable the enterprise to develop continuously. Specifically in the field of geriatric care, care for the disabled elderly is mainly divided into home care and care in geriatric institutions. Due to the increasing number of sick and disabled elderly, organizations have to integrate care and nursing functions. Based on the results of a pilot study on home care and geriatric care, Kardol and Masselink (2000) proposed a geriatric care mechanism, in which the first team provides home care, the second team provides day care,

and the third team mainly provides treatment and comprehensive care for the elderly.

Fleishman et al. (1994) pointed out that in order to improve the quality of facility care, DC-Brookdale Institute of Geriatrics, in cooperation with Israel's Ministry of Labor and Social Affairs and the Ministry of Health, has developed a procedure to improve government supervision of long-term care institutions for the elderly, which is also welcomed by the institutions. Crivelli, Filippini, and Lunati (2002) found that as early as 1998, Switzerland used cross-sectional data to investigate and analyze the cost-effectiveness of 886 public, profit-making and non-profit nursing homes. Liu (2003) thinks that quality administration control is mainly realized through four stages of enterprise activities: planning, implementation, supervision and inspection. Each of these four stages completes one cycle at a time, and the product quality after each cycle will be improved compared with the result of the previous cycle. Geraedts et al. (2015) pointed out that in Germany, when choosing nursing homes, the customers are recommended to take the profit mechanism of this nursing home into consideration, because different profit points lead to different service orientation and service quality, which can provide reference for elderly people to make their own choices. Moreover, German legislation requires nursing homes to disclose the aspects and fields where the profit derives from in their public quality reports. In 2018, Torres conducted a survey of 383 elderly people admitted to geriatric nursing institutions in Brazil, analyzed the relationship between pain administration and geriatric medical and nursing institutions, and found that more than 30% of the admitted elderly people had chronic pain. Therefore, he put forward nursing suggestions for Brazilian geriatric medical and nursing institutions: improving health care measures and reducing the risk of chronic pain for the elderly.

In the nursing service for the elderly, it has been part of the efforts of government departments and institutions engaged in nursing work for a long time at home and abroad continuously to improve the service system according to the problems arising from the work, and continuously promote the service quality and the construction of the nursing care system for the elderly (Castle & Ferguson, 2010; Guo & McGee, 2012). Bellelli et al. (2001) conducted a survey and analysis of 352 elderly people who had clinical visits at night or on holidays to 10 non-profit nursing facilities in Italy in order to study whether different doctors

would lead to different hospitalization rates and inappropriate administration of adverse clinical events. The results showed that the hospitalization rate of doctors under the National Health System (NHS) was twice as high as that of doctors in nursing institutions, and at least one third of the treatment was inappropriate. Elderly people in geriatric nursing homes often experience adverse clinical events. The ability of doctors can affect the hospitalization rate and the quality of medical intervention. Strengthening doctors' ability to identify and deal with the illness of the elderly is conducive to improving the quality of medical care for the elderly. The choice of elderly health care services requires an assessment of the health status and financial capability of the elderly, and ensuring the poor elderly to obtain basic elderly health care is an important part of the elderly health care system construction (Flores-Flores et al., 2018).

In developed countries, because of the implementation and requirements of the insurance system, the accommodation facilities and staffing of nursing homes are all managed by unified standards. More quality is reflected in the details of services for the disabled elderly, and some quality is even relevant to the psychological and spiritual level. However, it is very important for all the elderly applying for long-term care insurance to conduct comprehensive health assessment according to the requirements of various countries before moving in the institution (Park-Lee, Caffrey, & Sengupta, 2011). Moore and Hall (2012) measured the relationship between the health status of the elderly and long-term health care insurance through DX-PM model. It was found that when the elderly need to bear much medical expense, they will have evasive mood and cannot obtain effective medical services when obtaining medical care services.

In response to the increasing incidence of senile cognitive diseases with the extension of average life span, individual countries have innovatively developed various methods such as group living and group unit administration of cognitive diseases to provide more services, and countries with long-term care insurance have also included them in the coverage list. Using the existing resources and innovating administration methods to realize the integrated administration of cognitive diseases in the disease administration of the elderly population, which is increasing year by year, belongs to a way of social administration innovation and

can reduce the operation and administration costs of the country.

2.3.3 Research on nursing care quality of disabled elderly

It depends on the service quality of nursing institutions for the disabled elderly to solve problems such as elderly falls, pressure sores, malnutrition, pneumonia and multiple drugs, which are common among the elderly themselves, and to get timely treatment for them with the aggravation of the disease.

Jones et al. (2009) found that elderly people in nursing homes in the United States also have serious problems with overdose drug use, with about 47.9% of the elderly taking 9 or more drugs every day. Forsetlund et al. (2011) conducted a randomized controlled intervention on multiple drugs used by the elderly hospitalized in Norwegian Geriatric Nursing Hospital. Improper drug use was reduced through a combination of education promotion, on-site separate education or as a drug intervention program and pharmacist review. Hansdóttir and Guđmannsson (2013) conducted another survey of Norwegian nursing homes. In order to identify and summarize the potential improper use of prescription drugs in nursing homes, 60% of the elderly in all nursing homes in Iceland were surveyed, involving 1409 elderly in 10 nursing homes. The results showed that the average age of the hospitalized elderly was 83 years old and 43% died during the investigation. At the beginning of the study, the average number of drugs taken per person per day was 8.9 (±4.0) and increased to 9.9 (±4.3) at the end of the study. 56.2% of women and 47% of men took more than 10 drugs. 82% of the elderly often use psychiatric drugs, 65% use sedatives and sleeping pills, 50% use antidepressants, 20% use anti-psychotic drugs, research shows that multiple drug problems are very prominent in nursing homes. Gjerberg et al. (2013) found in the survey results of Norwegian nursing homes that staff actually spent a lot of time avoiding constraints. The most common methods are to divert attention, strengthen persuasion, use restrictive language for conscious elderly people, and other various methods and one-on-one care. The investigation and interview show that the time and frequency of restriction on the use of the elderly are affected by the comprehensive resources of nursing homes, the care of nursing organizations and the ability of employees.

In 2006, in order to keep the average incidence rate of pressure ulcers under 10% in nursing homes in each national nursing home (Centers for Medicare and Medicaid Services, 2006), the United States launched regional alliance activities in all nursing homes to promote the nursing quality in nursing homes in the United States, hoping to better manage the high-risk factors for pressure ulcers among nursing home residents.

In addition to basic quality research, strengthening the interaction between medical institutions for the disabled elderly, adding facilities, reducing staff pressure and improving their own qualifications of research administration quality control are also measures to improve the quality of care.

Boockvar, Brodie, and Lacks (2000) study found that adding new instruments to geriatric medical and nursing institutions is helpful for early detection of abnormal changes and thus to take timely measures. Kimiko et al. (2007) found that the effective use of aid products and medical facilities can help relieve the pressure on employees. Udo, Kobayashi, and Udo (2006) found in order to reduce the incidence of back pain and forearm pain of long-term care-givers, an ergonomic model was developed to improve the working environment. After 3 years of research and improvement, the incidence of back pain was reduced. Bonner et al. (2009) observed the number of registered nurses and assistant nurses in nursing homes and the condition of the elderly residents, and found that increasing the number of registered nurses and a reasonable proportion of registered nurses to assistant nurses are conducive to improving service quality. Tena-Nelson et al. (2012) conducted research on strengthening communication and interaction among 30 geriatric medical and nursing institutions in Britain, and found that this behavior can effectively reduce the transfer rate of the elderly.

Due to the emphasis on quality administration and social needs and other factors, the services provided by the geriatric nursing hospitals of government departments have relieved the pressure of the state. Manton, Gu, and Lamb (2006) conducted a long-term care system follow-up survey on people aged 65 and above, which showed that the disability rate caused by chronic diseases decreased significantly during the 22 years from 1982 to 2004, reaching the goal of medical insurance and Medicaid policy intervention and improving the

administration efficiency. Jung et al. (2018) believes that a good health plan can effectively improve the quality of medical care for the elderly.

Public geriatric nursing hospitals and medical institutions providing better quality medical care, rehabilitation and comprehensive care are often in short supply. To this end, all geriatric nursing institutions have some criteria or indicators for emergency admission of the elderly. Kishida and Tanizaki (2008) in the United States pointed out in the study on the decision of emergency admission for the elderly that when choosing emergency admission, it is necessary to comprehensively consider the severity of disability of the elderly, the number of care-givers, the attitude of family members, the situation of medical institutions where can provide limited use of short-term medical facilities and whether the elderly has fixed housing or not. According to the survey by Nakanishi et al. (2012) on 208 geriatric nursing institutions in Japan, the cognitive impairment in combination of behavioral and psychological symptoms of dementia (BPSD) is considered as a major factor when deciding whether to accept the elderly.

Due to the late start of geriatric nursing in our country, there are few hospitals specially serving the elderly with needs of nursing and treatment of chronic disease. A survey of 53 geriatric nursing hospitals in Shanghai conducted by Shi (2008) showed that the bed utilization rate reached 292.55% in 2004-2006, with an average of 97.52% per year, and an average turnover rate of 3.39%. Many elderly people are waiting for admission, more than those to be admitted into general hospitals. This shows that the allocation of medical resources is unreasonable and the supply and demand are unbalanced. Wu et al. (2015) found that, on the one hand, the number of beds in the national elderly nursing institutions basically meets the standards of developed countries, and the vacancy rate of these institutions is as high as 48%. Among the institutions visited, the proportion of those with profit surplus was 19.4%, 32.5% suffered losses and 48.1% were basically at the break-even point. On the other hand, a large number of disabled and mentally retarded elderly people who need long-term nursing do not receive relevant care.

2.4 Evaluation of satisfaction of the disabled elderly with the geriatric medical and nursing institutions

The aging of the population has led to the prolongation of the average life span of the elderly, and the elderly themselves have more demand for geriatric nursing. Geriatric nursing is a comprehensive system, including housing, activities, food services, practical assistance, care, physical rehabilitation and consultation, which mainly include two aspects: one is life care, and the other is health administration (Kristiansen, 1992). The influencing factors of disabled elderly people's satisfaction with geriatric medical and nursing institutions are not only an effective response to the current situation of geriatric medical and nursing institutions, but also a plan for the future development of geriatric medical and nursing institutions.

2.4.1 Evaluation of satisfaction of disabled elderly with medical quality of elderly nursing institutions

Bellelli et al. (2001) found that doctors in permanent institutions have much higher rationality in handling sudden medical care incidents for the elderly than doctors in hospitals where patients are transferred. White et al. (2011) found that 32% of the elderly people in institutions that did not have emergency referral plan died in the transferred emergency facilities within 7 days on average after the referral. Ji and Lu (2012) found that the prevalence rate of chronic diseases in institutions for the aged was 96.5%, the annual hospitalization rate of the elderly was 29.9%, and the two-week prevalence rate of the elderly was higher, reaching 72.7%, but the treatment rate was lower, only 42.9%. Patients often did not get timely treatment, especially for the disabled or disabled elderly. Disabled elderly people need timely treatment, rehabilitation training, dietary administration and psychological counseling in elderly nursing institutions.

In Japan, Kenji et al. (1992) compared 61 long-term hospitalized elderly people with 179 community elderly people, and refined the long-term hospitalization factors of the elderly: female, low ADL, widowed, no offspring, or long-term bedridden, catheter placement, unable to carry out rehabilitation treatment. Ali (2005) pointed out in the research that the disabled

elderly due to heart disease, diabetes, senile dementia, stroke and other reasons need long-term medical care. In addition, the average life expectancy of women is higher than that of men, so among the disabled elderly, women have a relatively high demand for medical care. Morgan et al. (2016) believes that gender and family factors have an impact on the choice of long-term care for the elderly through the study of the elderly's hospice care. Adams, Ahmed, and Evans (2018) used binary regression model to analyze the geriatric medical and nursing institutions in Bangladesh, showing that the elderly's choice of geriatric medical and nursing institutions is closely related to gender, occupation, educational background and family income.

According to the research results of many scholars, the classification of SSRS degree, the length of disability time, the current income of the disabled elderly, the financial support provided by their families, the type of medical insurance, the total monthly expenditure, the current nursing status and satisfaction with nursing, the fear of reduced communication with their children, the unaccustomed living with the elderly, and the cost of nursing hospitals are all the influencing factors for the disabled elderly to choose whether to stay in the geriatric nursing institutions.However, gender differences, educational level, disability degree (FIM), number of diseases, number of items requiring assistance in nursing every day, monthly medical expenses, demand for medical care within one month and attitude of children are important influencing factors for disabled elderly people to choose to stay in geriatric medical and nursing institutions.

Walsh and Regan (2001) conducted an interview survey on general practitioners in home care, showing that geriatric medical and nursing general practitioners need further training in pain control, symptom relief and professional nursing techniques. Chang and Roberts (2008) found that the feeding difficulties of dementia elderly have always been a difficult problem in the long-term care of dementia. Among 58 dementia elderly in 31 nursing homes in Taiwan, the biggest difficulty is that 37.5% of the elderly refuse to eat. The strategies that nursing staff can use are limited. They need more training to solve the feeding difficulties of dementia elderly. Shinduk et al. (2018) believes that drug administration can effectively alleviate the pain perception of the elderly, and the affordability of medical

expenses affects consumers' choice.

It is often necessary to transfer the disabled elderly to higher-level hospitals, especially for those suffering from diseases and with some special care needs. However, the problems in transportation also put the elderly at risk. Finn et al. (2006) conducted a statistical analysis on the transfer of elderly people from residential facilities to emergency departments in western Australia from January to June 2002. It was found that 541 elderly people over 65 years old were transferred within 6 months, 326 were hospitalized, 276 were discharged. The most common diseases were bone and joint diseases accounting for 25%, 22% were related to falls, and 11% were pneumonia. Terrell and Miller (2006) analyzed the factors affecting the transportation of the elderly to the emergency department due to their illness, and found that the biggest problem was that the emergency department could not provide high-quality care, and the biggest obstacle was the lack of geriatric nursing. Arendts et al. (2010) analysis of the factors affecting the transfer found that the comprehensive skills, disposal capacity, disposal plan, deathbed requirements and official requirements of nursing institutions were the main factors affecting the transfer of the sick elderly. He believed that the transfer could be reduced through communication. Li, Wang, and Wang (2016) think that there are many problems in the current medical care of the disabled elderly in China. Medical transfer is one of the common problems in the geriatric medical and nursing institutions in China. Improving the medical quality of the geriatric medical and nursing institutions is conducive to reducing the burden of the disabled elderly in the transfer process.

Mion (2003) study found that the probability of disability due to illness after 50 years old doubles every 5-7 years. 26% of the 65-74-year-olds suffer from chronic diseases that affect their quality of life. Nearly half of the elderly over 75 years old have more than one functional disability due to chronic diseases. 33% of the elderly had more than one kind of daily living ability decline when discharged from hospital. 15% patients had side effects of drugs. 50% of the hospitalized elderly have urinary incontinence; The probability of the elderly over 75 years old being diagnosed with senile dementia is greatly increased. Arai et al. (2015) study found that with the aging of the population and the decline of the birth rate, the deterioration of multiple organ functions leads to lifestyle-related diseases and dysfunction of

daily activities, and comprehensive medical care is urgently needed.This fully demonstrates that the disabled elderly have a certain degree of demand for the medical technical level in medical institutions. The medical quality in medical institutions for the elderly is the prerequisite for the physical health protection of the disabled elderly, and is also the most direct factor for the satisfaction evaluation of the disabled elderly in medical institutions for the elderly.

On the other hand, a study by Shi (2008) shows that the average bed utilization rate of 53 geriatric nursing hospitals in Shanghai from 2004 to 2006 was 97.52%, and many elderly people were waiting for admission. Wu et al. (2015) reported that beds in China's pension institutions are up to 48%, but a large number of disabled and mentally retarded elderly people are not cared for. It is suggested that the institutions providing medical resources are recognized by the elderly and their families, which is consistent with the survey results that the demand for medical care is an independent influencing factor for the elderly with moderate to severe disability to choose a nursing hospital.

In terms of economy, Tang (2005) Shanghai sample survey found that family economic status is one of the main influencing factors for disabled elderly people to evaluate their satisfaction with admission to geriatric medical and nursing institutions. When disabled elderly people do need to choose admission to geriatric medical and nursing institutions due to their illness, family members will take medical expenses as a reference factor, but it is not the main factor. He believes that the disabled elderly have the highest satisfaction rating for admission to geriatric medical and nursing institutions, provided the medical expenses are reasonably affordable and certain medical effects are achieved. Peng (2017) believes that medical expenses affect disabled elderly people's willingness to choose medical expenses. Disabled elderly people with insurance to share medical expenses can often choose higher quality medical services.

To sum up, it can be found that the demand for medical quality is a major demand of the disabled elderly. On the premise that the demand is met, the satisfaction of the disabled elderly will be correspondingly improved.

2.4.2 Evaluation and research on satisfaction of the disabled elderly with nursing work in geriatric medical and nursing institutions

Service is the core competitiveness of the current market competition of geriatric medical and nursing institutions. The satisfaction evaluation of nursing service for the disabled elderly living in geriatric medical and nursing institutions directly affects their overall evaluation.

With the increase of age, the elderly need care for their advanced age, debilitation, multiple diseases, senile syndrome, dementia, and dyskinesia. In addition to the diseases and functional needs of the elderly themselves, the family structure changes, and the phenomenon of childlessness is very prominent at home and abroad, while traditional reliance on family care is becoming more and more difficult. Maslow (1943) "Human Motivation Theory" divides human needs into five categories: physiological needs, safety needs, social needs, respect needs and self-realization needs, from lower level to higher level in turn.For the elderly with multiple diseases and disabilities, especially the elderly with severe disability, physiological needs and safety needs, especially timely treatment of diseases, are the most basic needs, that is, to have a sense of security for the elderly and a sense of medical care for the elderly.However, psychological comfort, communication, protection of physical privacy and respect for personality of disabled elderly people are high-level satisfaction of the needs of the elderly. They are very important for improving the sense of life dignity of the elderly and must be paid attention to in long-term care.

Iijima (2006) pointed out that disabled elderly people need long-term care. Faced with childlessness, appropriate choice of long-term care in geriatric medical and nursing institutions can reduce the pressure on young people. Teka and Adamek (2014) survey on the psychological needs of the elderly in Ethiopia's geriatric nursing institutions shows that despite the lack of facilities, residents are more eager for meaningful social interaction and lack of serious psychosocial support. The service content of geriatric medical and nursing institutions should incorporate more concepts of mental health administration, especially in developing countries. Enoki, Sugiyama, and Izawa (2014) conducted a survey on the disabled elderly who receive long-term care at home, and found that malnutrition of the disabled

elderly in the community is closely related to the low ADL score, dysphagia, cognitive impairment and hospitalization in the past three months. Therefore, it is suggested that home care must have professional nursing knowledge and skills or receive long-term guidance, and receive regular health administration to ensure the health examination and quality of life of the disabled elderly. Arai et al. (2015) found that with the aging of the population, diseases and functional degradation of multiple organs lead to dysfunction of daily activities of the elderly, the disabled population increases, and the demand for comprehensive medical care support increases. Celik et al. (2017) believes that marriage, academic qualifications and stable income are important factors that affect the elderly's satisfaction evaluation of geriatric medical and nursing institutions, and points out that increasing the activity of the elderly can effectively improve their satisfaction evaluation.

In western developed countries, due to the perfection of the old-age care insurance system, the elderly people think more about whether they need care or not. Zedlewski and McBride (1992) found that with the increase of the elderly population, the elderly demand for nursing care will triple by 2030. Nakayama et al. (2003) conducted a questionnaire survey on 8,940 elderly people over 65 years old and 7,984 elderly people under 64 years old. The results showed that 42.8% of the elderly people over 65 years old and 34.3% of the elderly people under 64 years old knew about long-term care insurance, 28.3% and 22.5% knew about services provided by geriatric medical and nursing institutions respectively. The proportion of elderly people over 65 years old willing to stay in long-term care institutions was significantly higher than that of the group under 64 years old. Cathy (2017) believes that medical insurance plays an important role in patients' choice of medical services. Excluding dental and beauty needs, medical insurance can enable patients, especially elderly patients, to choose better medical care services.

In terms of domestic research, Shi et al. (2005) conducted a survey on the two-week morbidity of 1827 elderly people in Shanghai. The results showed that the two-week morbidity rate of elderly people in the community was 72.5%, and the two-week morbidity rate was 39.3%. The patients who did not seek medical treatment in time were mainly disabled elderly people, who were often not assisted in time and had difficulty in

transportation, or were not cared for after hospitalization. Wu, Mao, and Zhong (2009) found that with the increase of the elderly population and the decrease of the rural population, it is very necessary to establish a long-term care system in China, especially in rural areas. Fan (2011) analyzed the influencing factors of the increase in demand for long-term care services, including: the increase in age, the increase in disability rate of the elderly, and the increase in education level of the elderly. Ji and Lu (2012) conducted a questionnaire survey on the elderly in three old-age care institutions in Beijing. The results show that the prevalence rate of chronic diseases in old-age care institutions is 96.5%, the incidence rate of depression among the elderly is as high as 44.9%, the two-week prevalence rate of the elderly is 72.7%, but the treatment rate is only 42.9%, diseases often cannot be treated in time, and the elderly with disability or mobility are especially prominent. The elderly have the highest demand for medical services, which is the treatment of sudden diseases, followed by the medical care needs for long-term chronic diseases. Regular physical examination, health care services, psychological consultation and other services are also gradually becoming the increasingly needed medical care services for the disabled elderly. Wang and Zeng (2015) believe that long-term care insurance is an important way to solve the worries of the disabled elderly. The long-term care insurance mode, insurance type allocation and operation system for the elderly are one of the signs of maturity in the elderly market.

In terms of informal caregivers, relevant research results at home and abroad show that long-term caregivers, especially informal caregivers, should consider their care ability, mental health, reduce their pressure, avoid increasing potential unsafe factors, and the emergence of medium-term and long-term care businesses or related institutions in the market can replace home care to a certain extent and reduce the pressure of informal caregivers. Tang (2005) Shanghai sampling survey found that family structure and family concept are one of the main influencing factors of long-term nursing needs. Navaie-Waliser et al. (2002) conducted a questionnaire survey on 1002 informal carers. The study found that 36% of informal carers are vulnerable to injuries or complaints, and they themselves feel exhausted, mainly due to the quality of care and high-intensity care work. Especially, those who are over 65 years old, married and have less than 12 years of education experience will

have higher work pressure. Shao et al. (2013) conducted a survey of 744 disabled elderly people aged 60 and above and 744 caregivers in Dongcheng District of Beijing, and found that the long-term home care for disabled elderly people led to a significant reduction in the quality of life of caregivers.

In addition, the elderly discharged from general hospitals also face the problem of long-term care. Richbourg, Thorpe, and Rapp (2007) paid a return visit to 34 elderly patients who underwent fistulization. It was found that the top 5 complications after discharge were skin allergy (76%), bag leakage (62%), odor (59%), reduction of favorite activities (54%) and depression/anxiety (53%). Another 20% had difficulties after fistulization and did not seek help. The solution of these problems requires long-term guidance of professional technology. Hoogerduijn, Grobbee, and Schuurmans (2014) found that in order to reduce the risk of decline in the body function of elderly hospitalized patients, nurses should assess the risk of elderly patients needing intervention, and thus initiate and coordinate various professional intervention measures, which play a key role in the strategy of preventing decline in function.

In terms of national policies, long-term care can not only reduce social pressure, but also rationally utilize limited social resources and reduce financial pressure. Doerpinghaus and Gustavson (2002) found through empirical research that the lower the expenditure of nursing homes covered by the national Medicaid system, the higher the penetration rate of long-term care insurance. In addition, people's awareness of long-term care insurance financing risks is significantly related to the penetration rate of commercial long-term care insurance market. Shaughnessy and Kramer (1990) analyzed the situation of the elderly admitted to senior medical care institutions, traditional nursing homes and family health institutions in order to assess the changes in the future cost of medical insurance and Medicaid system. The results showed that in traditional nursing homes, the body function of many elderly people was declining, while in senior medical care institutions, the percentage of tube feeding, oxygen use and urinary tract infection were increasing, while the family health institutions had no obvious changes. Liu (2016) through the analysis of Germany's long-term care welfare system, believes that the five social roles of the state, society, family, market and NGO jointly accomplish the goal of the long-term care welfare system, and the diversification of

long-term care welfare participants can effectively justify social resources.

To sum up, long-term care has become an essential social measure in an aging society. As an geriatric medical and nursing institution providing long-term care, it can effectively improve the quality of long-term care and service level, and is conducive to improving the satisfaction evaluation of disabled elderly people to stay in medical institutions.

2.4.3 Evaluation and research on satisfaction of disabled elderly with supervision of geriatric medical and nursing institutions

With the marketization of geriatric medical and nursing institutions, more capital and market players will inevitably participate in the geriatric market industry. Before the industry standard and supervision are perfect, there will inevitably be certain negative situations, such as abuse of the elderly, nonstandard medication and untimely maintenance of facilities. To some extent, this reduces the willingness of the disabled elderly to stay in the geriatric medical and nursing institutions, and also causes great contusion to the satisfaction evaluation of the disabled elderly. Therefore, the supervision of the geriatric medical and nursing institutions is also an important direction for the satisfaction evaluation of the disabled elderly.

The demand supervision of geriatric nursing institutions depends on the market and government departments. Grando et al. (2005) conducted research and analysis on the phenomenon of elderly people who need less care staying in nursing homes. It was found that 50% of them would still be in a state of less care needs in the next year. It was suggested that such elderly people should choose suitable home care to reduce the care burden and economic pressure. Iijima (2006) research found that for long-term care, care to maintain human dignity should be the most important issue in the long-term care insurance system. Naruse et al. (2011) conducted a questionnaire survey on 92 social welfare workers and 280 care managers in Japan. The results show that long-term care providers need more care at night than during the day. It is suggested that public health nurses use and manage health care resources more rationally according to the actual needs of the community. Chui (2011) research on Hong Kong's long-term care policies found that the implementation of long-term care policies has led to excessive reliance on subsidies, resulting in slow development of

home and community services, insufficient funds and worrying quality of private residential health facilities. Therefore, the use of long-term care insurance policies should be rationally planned. Chang et al. (2018) uses information technology to supervise the geriatric medical and nursing service, which can fully manage the elderly information in the geriatric medical and nursing institutions, effectively utilize the medical and health resources of the tertiary general hospitals, and improve the timeliness and effectiveness of medical services.

As the development of the geriatric medical and nursing care market is at the level of development worldwide, the supervision of the geriatric medical and nursing care market is more to deal with disputes from the perspective of human rights, and the corresponding direct research is less. However, it is undeniable that the supervision measures have a strong impact on the satisfaction evaluation of the disabled elderly.

2.5 Summary of this chapter

Through literature review and analysis of the supply and needs of geriatric nursing hospitals at home and abroad, especially the nursing insurance systems formulated and implemented in western developed countries, it is found that private capital should be strongly encouraged to intervene in the long-term care industry and long-term care institutions in various forms suitable for the needs of different strata of the population should be established. In terms of quality administration, strict standards should be formulated to regulate the industry. According to the characteristics of the disease of the elderly population, analysis, research and improvement of long-term care services should be carried out to deal with various elderly syndromes, complications and difficult phenomena faced by long-term care, and administration should be innovated. In the process of construction, the geriatric nursing hospital is set up on the basis of multi-disciplinary teams to cope with the complexity and diversity of long-term nursing care service demands. The ultimate goal is to provide safe and high-quality medical and nursing services, and the enterprise can develop continuously and stably.

As China's long-term care insurance system is still in the exploratory stage and residents' income needs to be improved, it is necessary and feasible to establish a nursing hospital for

the elderly with rigid needs to provide quality and characteristic long-term care and medical treatment.

Chapter 3: Analysis of the Geriatric Nursing Market in Chengdu

As of December 31, 2018, Chengdu has a population of 3.15 million people aged 60 and above, accounting for 21.34% of the total population (Report on the development of elderly population information and elderly health in Chengdu in 2018). With the increse of aging population in Chengdu year by year, the elderly, who are prone to chronic diseases, inconvenient activities and difficult to take care of themselves, have greatly increased their demand for social health services, life care and medical care.

In order to more accurately reflect the market situation and the existing problems of nursing and medical care for the disabled elderly in Chengdu and to understand the satisfaction of the moderately and severely disabled elderly and their families with medical care, nursing and hospice care services, the thesis, based on the research results of the expert group of Sichuan and Chengdu Gerontology Quality Control Center and relevant units, carried out the market analysis of the existing medical care industry for the elderly in Chengdu, which provides the decision-making basis for the government to make investments in the medical care industry for the elderly, and provides the factual basis for the decision-making of relevant enterprises in the nursing hospital for the elderly and for the selection of medical care institutions by families of the disabled elderly.

3.1 Status quo of Chengdu geriatric nursing institutions

3.1.1 Basic statistics

Based on the investigation of the existing seven fixed-fee geriatric nursing hospitals in Chengdu, it is known that the first hospital was established in 1957 and the latest is 5 years old, covering an area of 5420-97999 m2. According to the division of ownership, there is one public geriatric nursing institution and six private geriatric nursing institutions. See Table 3-1:

Table 3-1 Basic Situation of 7 Geriatric Nursing Hospitals in Chengdu

Name of hospital	Ownership	Construction time	Construction area (m2)
A	Public	2003	14000
B	Private	1979	97999
C	Private	1994	9600
D	Private	1957	7500
E	Private	2013	6158
F	Private	2012	6000
G	Private	2012	5420

Table 3-2 Statistics on Elderly in 7 Geriatric Nursing Hospitals in Chengdu

Nursing hospital	Number of Elderly Residents	Male	Female	Completely bedridden	Tube	Ureter	Other pipelines
A	600	282	18	270	65	45	8
B	393	195	198	166	38	19	5
C	534	240	294	341	78	41	4
D	187	86	101	76	16	13	0
E	170	71	99	75	16	9	4
F	212	95	117	90	15	8	1
G	162	80	82	71	10	5	2
Total	2258	1049	1209	1089	238	140	24

According to statistics, the survey data of 7 geriatric nursing hospitals in August 2016 show that a total of 2258 elderly people were admitted, including 1049 males and 1209

females, with a male/female ratio of 46: 53 respectively, 1089 completely bedridden elderly people, accounting for 48.23%, and 238 with gastric tubes, 140 with urinary tubes and 24 with other tubes, as is shown in Table 3-2.

In addition, among Chengdu's geriatric medical and nursing institutions, 5 institutions receive the elderly with dementia, but only 3 institutions receive the elderly with mental and behavioral disorders. Each nursing hospital has established a reasonable referral mechanism. Apart from the initial medical expenses, the cost of nursing care for the elderly is generally between 1900 and 5900 yuan/month, and the cost chosen by the vast majority of families is between 2500 and 4000 yuan/month. All institutions for the elderly are charged according to different service levels and room occupancy. According to the recent internal satisfaction survey in March, 90% correspondents are satisfied. In terms of complaints, the most important reasons to receive complaints are service attitude and quality as well as diet.

3.1.2 Current situation of medical services in geriatric medical and nursing institutions

As a city with fast economic development, Chengdu has initially formed its basic medical and health service system, which can meet the medical and health needs of residents in various communities. However, the development of the geriatric medical and nursing care market is relatively weak. At present, the geriatric medical and nursing service market provided by seven geriatric medical and nursing institutions in Chengdu is relatively underdeveloped, and there is much stress in terms of both facilities and medical practitioners.

From Table 3-3, it can be seen that there is no institution capable of forming a comprehensive medical care system for the elderly in terms of the setting of clinical departments, and there is a lack of medical expertise, mostly convalescence. There is only one geriatric medical and nursing institution capable of performing surgical operations, which basically meets the needs of nursing, medication and examination. However, there are still major deficiencies in the diagnosis and treatment of sudden diseases and psychological counseling for the disabled elderly. It can be seen that the intelligence of the geriatric medical and nursing institutions in Chengdu is still at the early stage of construction, and the medical functions still need to be further improved to meet the increasingly urgent needs of the

elderly.

Table 3-3 Departments in Geriatric Nursing Hospitals

Projects	Departments	Number of hospitals	%
Clinical Department	Internal medicine	7	100
	Cardiovascular medicine	7	100
	Respiratory medicine	7	100
	Neurology	2	28.57
	Rehabilitation medicine	6	85.71
	Oncology department	1	14.29
	Hospice department	2	28.57
	Gerontology department	2	28.57
	Psychiatric department	2	28.57
Medical Technology Department	Pharmacy Department	7	100
	Clinical laboratory	7	100
	Radiology department	7	100
	Nutrition department	1	14.29
Functional department	Disinfection room	3	42.86
	Medical quality	7	100
	Nursing department	7	100
	Hos. Infect. department	3	42.86
	Record room	7	100
	Information section	3	42.86
	Equipment department	3	42.86
	Re. treatment room	6	85.71
Special settings	Hospice Care Room	1	14.29
	Buddhist Temple	1	14.29

In terms of setting up medical and technical departments, the standard requires at least to

set up pharmacy department, laboratory department, radiology department, nutrition department and disinfection supply room. For the geriatric medical and nursing care market, special departments should be set up to meet the needs of the elderly. Among the seven geriatric medical and nursing institutions in Chengdu, there is only one nutrition department and one hospice care department. For the religious beliefs of a small number of the elderly, there is one Buddhist institution and two other religious cooperation institutions. It can be found that Chengdu needs to further strengthen the construction of basic conditions in the development of geriatric medical and nursing institutions.

In terms of the situation of medical and nursing staff (see Table 3-4), at the end of 2015, Chengdu survey showed that there were 2908 geriatric medical and nursing and nursing staff, including 735 doctors, 1153 nurses and 1020 nursing staff, up 67% from 2014 (Chengdu Daily, 2016). There were 27 medical practitioners with senior professional titles, accounting for 12.2%, with an average of 3.86 in each institution and only 4 nurses with senior professional titles, accounting for 1.04%. 49% of medical practitioners have bachelor degree or above. The educational background of registered nurses is mainly junior college, accounting for 56.81%, and only 17.02% of them above the bachelor level.

According to the age structure, 24.2% of medical practitioners are aged 30 years or younger and 49.48% are registered nurses. Among all kinds of medical personnel over 61 years old, 16 are doctors, accounting for 7.44%. There are 12 nurses, accounting for 3.14%, and the overall age structure is reasonable. The proportion of young nurses is too high.

Nutrition unit is an integral part of the medical and technical departments according to the policy. If there is no qualified nutritionist in the geriatric nursing hospital, it is difficult to ensure the provision of nutritious diet to the hospitalized patients. In the geriatric nursing institutions that set up clinical nutrition unit, there is one intermediate nutritionist, two junior nutritionists, one nutrition nurse and two assisting staff and the staff in the nutrition unit do not have a very high level of education. The highest educational level of the nutritionists in the seven institutions is bachelor, and they account for only 50.0%, shown in Table 3-4.

Table 3-4 Medical Staff in Geriatric Nursing Hospitals (n, %)

	Practitioner	Assistant physician	Registered nurse	Clinical nutritionist
Title				
Senior	27(12.2)	/	4(1.04)	/
Intermediate	41(18.64)	/	27(7.07)	1(16.67)
Junior	118(56.36)	5(2.27)	314(82.2)	2(33.33)
No title	29(13.18)	/	37(9.69)	3(50.00)
Total	215(97.73)	5(2.27)	382(100.0)	6(100.0)
Education				
Master or above	10(4.55)	/	/	/
Bachelor	98(44.55)	/	65(17.02)	3(50.00)
Junior college	91(41.36)	5(2.27)	217(56.81)	2(33.33)
High school	21(9.55)	/	100(26.18)	1(16.67)
Age				
Under 30	52(24.2)	5(2.27)	189(49.48)	4(66.67)
31-40 years old	90(41.86)	/	95(24.87)	1(16.67)
41-50 years old	37(17.21)	/	51(13.35)	/
51-60 years old	20(9.30)	/	35(9.16)	/
Over 61 years old	16(7.44)	/	12 (3.14)	1(16.67)
Total	215(97.73)	5(2.27)	382(100.0)	5(100.0)

In terms of salary and treatment, there is little difference in the corresponding positions in the geriatric nursing hospitals as a whole (see appendix 3 Table 1). Doctors and assistant doctors in institutions such as B, C, E and F earn slightly more than A, D and G. Nurses in institutions A, C, D and F earn slightly more than nurses in institutions B, E and G. Nurses in institutions A, B, E and F earn slightly more than nurses in institutions C, D and G.However, in 2015, Chengdu announced that the average monthly income of employees was 4,790 yuan, while the data in the table showed that the income of other types of employees except

practicing doctors was lower than the average wage of Chengdu.

In terms of doctor-patient ratio, according to the standard requirements of the national Ministry of Health, eight nursing staff (including nurses and assistant nursing workers) should be provided for every ten beds, and the number of assistant nursing workers should be 2-2.5 times the number of nurses. According to the data, there are 2258 elderly people staying in the seven geriatric medical and nursing institutions in Chengdu for a long time.

According to the minimum standard 1806 nursing staff should be required, among whom there should be 602 nurses and 1204 assistant nursing workers. However, the actual total number is 382 nurses and 424 assistant nursing workers. Each bed is equipped with only 0.36 nursing staff. The ratio of registered nurses to assistant nursing workers is 1:1.1, which is far below the standard.

Regarding the professional level of nursing workers, according to the data obtained, about 10% of assistant nursing workers have not received professional pre-job training. The proportion of assistant nursing workers with professional nursing qualification certificates is 20.08%. Most nursing workers have only received division level training, mostly domestic training. (shown in appendix 3 Table 2)

In terms of working hours, the assistant nursing workers generally work long hours. The surveyed workers work 40 hours/week minimally and most work more than 70 hours/week. The vast majority of nursing staff in 6 institutions work 24 hours a day, with only 2 days of rest per month or even no rest. In a high-intensity working environment, the average salary of nursing workers is only about 60% of that of Chengdu employees. At the same time, due to the long-term face of the elderly with moderate or severe disability, especially those with communication difficulties, the assistant nursing workers need patience, love and careful long-term efforts, causing job burnout, strong psychological burden and even abuse of the elderly by the workers. Due to the influence of the above factors, the dismission rate of nursing workers is generally high, ranging from about 20% to 35%, with some as high as 40%.

In terms of the equipment for the first aid in geriatric nursing hospitals, cardiac defibrillator, tracheal intubation equipment and ventilator are seriously insufficient, and only

a few institutions are configured, with the proportions of 57.14%, 28.6% and 42.86% respectively. First aid equipment is an important equipment for rescuing patients in case of accident. In the equipment configuration standard of geriatric nursing hospitals, it is also stipulated that nursing institutions must be equipped with cardiac defibrillator, ECG monitor, tracheal intubation equipment, respirator, oxygen supply equipment and rescue vehicle. See appendix 3 Table 3 for specific equipment configuration. Rehabilitation for the elderly is one of the most important medical technologies in geriatric nursing hospitals. Most institutions have developed different kinds of rehabilitation technologies combining traditional and modern technologies. Five institutions have sports treatment equipment and operation treatment equipment. All institutions have physical treatment equipment and carry out corresponding treatment. With the popularization of informatization, all institutions have implemented automatic office equipment for hospitalization and information, which is convenient for information transmission and exchange.

To sum up, it can be seen that there is a big gap between the basic standards and the real situation of Chengdu geriatric nursing hospital in terms of department setting, personnel structure, salary level and medical equipment, and there is much room for improvement.

3.1.3 Operation status of geriatric nursing institutions

The "Standards for the Construction of Geriatric Nursing Hospitals" require that the total number of hospital beds should reach more than 50. Judging from the actual number of vacant beds in various institutions, all geriatric nursing hospitals can meet the requirements. According to the current payment method of Chengdu Social Insurance Bureau, the 7 fixed-fee hospitals will pay 230 yuan per bed/day for hospitalization above the second-level hospitals and 180 yuan per bed/day for hospitalization above the first-level hospitals, including all medical treatment, drugs, examination and rehabilitation expenses included in reimbursement, which is lower than 50% of the expenses of Chengdu's general hospitals. Based on this, the Social Security Bureau has also issued some supporting policies, such as the average length of stay is more than 50% higher than that of hospitals of the same level.

In general, the utilization rate of beds in geriatric nursing hospitals is higher than that in

hospitals of the same level. The average length of stay and the average cost of stay vary greatly, which is related to the conditions of the elderly and hospital administration strategies (see appendix 3 Table 4). Since the income of geriatric nursing hospitals mainly comes from medical treatment and geriatric nursing, the occupancy rate of medical beds in the seven geriatric nursing hospitals is about 90%, some reaching 101.1%, and the utilization rate of elderly beds is high, so the seven hospitals are all profitable.

According to the investigation of various institutions, although the geriatric nursing institutions for the aged are currently making a profit, the allocation of human resources is far from meeting the allocation requirements of the geriatric nursing hospitals. Therefore, the services provided are still deficient in many aspects and there are many problems, which affect the satisfaction of the elderly with the geriatric nursing institutions and require further optimization of the allocation of resources.

3.2 Investigation and analysis on service status of moderate and severe disability elderly in Chengdu geriatric nursing hospital

During the investigation, a total of 2258 people were admitted to 7 geriatric nursing hospitals with moderate and severe disability. Based on interviews with some hospitalized elderly with moderate and severe disability and their families, and considering the basic data provided by geriatric nursing hospitals, effective data of 310 elderly with moderate and severe disability were successfully obtained. Based on this, the service status of Chengdu geriatric nursing hospital was analyzed by this thesis.

3.2.1 Demographic information of elderly residents in Chengdu geriatric nursing hospital

The Fourth Sample Survey of Living Conditions of the Elderly in Urban and Rural China shows that, as of August 1, 2015, 18.3% of Chinese citizens aged 60 and above living in the People's Republic of China (except Hong Kong, Macao and Taiwan regions) were estimated to be disabled or semi-disabled, reaching 40.63 million. According to the estimate

that the proportion of the elderly with moderate and severe disabilities in China accounts for 1.92% of the total number of the elderly, and the number of the elderly with moderate and severe disabilities is about 4.22 million.

The incidence rate of the elderly with moderate and severe disability in Chengdu is 8.77%, which is higher than the survey data of 2010 (Zhang & Wei, 2015). The survey found that the education level of the elderly with moderate and severe disability is generally low, and the past occupation of the elderly with disability is mostly workers. There is no gender statistical difference among the elderly with severe disability in various medical institutions for the elderly. People with less than one year of disability was in hospitals and with more than one year was in geriatric nursing institutions.

A general information survey of the elderly who have been admitted to nursing hospitals shows that 60.64% of the elderly are aged 80 and above, the proportion of women is higher than that of men. 63.6% of the elderly are educated in primary schools and below, and more than half of the elderly are employed as workers. See Table 3-5 for details.

In the hospitalization registration data of the elderly with moderate and severe disability, it is found that 94.8% of the elderly are disabled due to diseases, 2.3% due to trauma, and 2.9% of the family members do not know the specific diseases or causes. Among them, 52.3% of the elderly residents have been disabled for more than 3 years, 38.7% for 1-3 years, and less than 9% within 1 year. More than 60% of them had limb atrophy, and only 2.3% had no previous disease history. 51.6% of the elderly suffer from hypertension, 49.2% suffer from cerebrovascular accidents, more than 40% of men suffer from dysuria due to prostatic hyperplasia, 38% suffer from diabetes, 16.5% suffer from Parkinson's syndrome, 13.5% suffer from ischemic heart diseases, and 96.5% suffer from more than two diseases.

On the performance of disability, 81.6% of the elderly have trouble with movement, 56.5% are related to speech disorders, swallowing disorders, communication disorders and intellectual disabilities; 24.5% are incontinent, and 15.8% have limited vision. For various disability disorders, 96.1% of the elderly and their families said they need assistance in daily life, 85.5% of them need help in defecation, 81.3% need help in changing clothes, 76.3% need help in bathing, 73.2% need help in dining, and 71.9% need help in changing position

and moving.

Table 3-5 General Information Statistics of Moderate and Severe Disability Elderly in Geriatric Nursing Hospitals

Projects	Age	number	Composition (%)
Age	60-69	27	8.71
	70-79	95	30.65
	Over 80 years old	188	60.64
Gender	male	127	40.96
	female	183	59.04
Marriage	Married	203	65.5
	Unmarried	6	1.9
	Divorce	9	2.9
	Widowed	92	29.7
Education	Illiteracy	48	15.5
	Primary school	149	48.1
	Junior high school	33	10.6
	High school	44	14.2
	College or above	36	11.6
Occupation	Workers	161	51.9
	Administration personnel	32	10.3
	Technical personnel	34	11.0
	Farmers	39	12.6
	Other occupations	44	14.2

Source: basic statistical information provided by various medical institutions

3.2.2 Analysis of social support for disabled elderly residents in Chengdu

According to the survey of elderly people with moderate or severe disability who are admitted to geriatrc nursing institutions in Chengdu or who have the intention to be admitted

to these institutions, their first demand for long-term care is still daily life assistance, followed by disease administration, rehabilitation training, assistance activities, companionship, spiritual comfort, entertainment and other assistance. 97.2% of the elderly admitted said they want to meet with doctors or nurses every day to check their condition, 84.5% of the elderly want to be accompanied every day, and most of the elderly and their families pay attention to clean, quiet and safe environment.

In terms of expenses, 53.6% of the elderly who are willing to stay in geriatric nursing institutions can afford to pay 2000-3000 yuan per month. In order to further understand the social support of the elderly with moderate to severe disability, we conducted a special survey on their monthly income and medical insurance support. The results show that: 21.6% of the elderly earn more than 3,000-4,000 yuan, 44.5% earn between 2,000-3,000 yuan, 30.6% earn between 1,000-2,000 yuan, 2.3% earn less than 1000 yuan, and only 1% earn more than 4,000 yuan.

A monthly survey of the financial support that families of the elderly can provide shows that 37.1% of the family support costs are between 1,000 and 2,000 yuan, 31.3% of the family support costs are between 2,000 and 3,000 yuan, 12.9% of the family support costs are above 4,000 yuan, 16.8% of the family support is less than that of 1000 yuan, and only 1.9% of the families cannot support the elderly financially.

Thanks to the national health insurance policy vigorously implemented by the Chinese government, the vast majority of the elderly admitted to geriatric nursing hospitals now have medical insurance.The survey results show that 91.3% of the elderly have medical insurance for urban workers or residents, 4.8% of the elderly have new rural cooperative medical insurance, 1.3% of the elderly have full reimbursement of medical insurance, 0.6% of the elderly have work-related injury insurance, and only 1.9% of the elderly pay all the bills soly by themselves.

In view of the fact that more than 96.5% of the elderly have more than two kinds of diseases, our survey results show that 40% of the elderly spend more than 4,000 yuan, 14.8% of the elderly spend between 2,000 and 3,000 yuan, 18.7% of the elderly spend between 1,000 and 2,000 yuan, 20.6% of the elderly spend less than 1000 yuan, and only 5.8% of the

elderly do not know what medical expenses they use. According to Chengdu's medical insurance reimbursement rate which is around 50-95%, the vast majority of the elderly themselves bear less than 1000 yuan. Among the elderly population whose monthly medical expenses are more than 4,000 yuan, the out-of-pocket proportion will exceed 2,000 yuan. Most of these elderly people are involved in rehabilitation expenses and nutrition expenses.

3.2.3 SWOT analysis of medical care for moderate and severe disabled elderly in Chengdu

At present, there are mainly four kinds of care methods for the moderately and severely disabled elderly in China, namely, family care, home care, community care and institutional care. Among them, institutional care includes care provided by the nursing homes, by the geriatric department of general hospital and by geriatric nursing hospital.

Diversified care methods will inevitably lead to market segmentation. Due to the disability of the elderly, economic conditions, family values and other reasons, the disabled elderly must choose long-term care methods. However, with the development of an aging society, the improvement of people's living standards, the improvement of medical conditions, the choice of disabled elderly has a diversified trend. In order to balance the advantages and disadvantages of various long-term care methods for the disabled elderly as a whole, we introduce ——SWOT analysis, a macro-environment analysis method in enterprise operation, to analyze the advantages and disadvantages, functional positioning and applicable groups of the above four long-term care methods in the macro environment.

SWOT analysis is actually a competitive environment analysis. By listing all factors related to itself in the internal and external environment faced by an enterprise, it is divided into four categories, namely, strength, weakness, opportunity and threat. Through matrix analysis, the development direction and market positioning of the enterprise are defined. Applying SWOT analysis to the analysis of long-term care methods for the elderly with moderate to severe disability in Chengdu can intuitively compare the advantages and disadvantages of four different long-term care methods. This thesis focuses on the analysis of advantages and disadvantages .See Table 3-6.

As can be seen from Table 3-6, from the internal characteristics, different long-term care methods have their own advantages and characteristics, and also have certain limitations. Among them, home care is more in line with the "filial piety" culture in China's traditional culture and more deeply reflects the Chinese "family" complex. During home care, disabled elderly people can more directly feel the warmth of the family and the psychological satisfaction brought by kinship. As children, home care can not only relatively reduce the economic cost of care for the disabled elderly, but also embody "filial piety", so families of the disabled elderly choose home care more. In contrast, home care cannot accurately and timely examine the health status and physical quality of the disabled elderly. Also, for family members who provide care, the level and time of care cannot meet the needs of care, resulting in a continuous decline in the health status of the disabled elderly. With the changes of family structure, population structure and the acceleration of population flow, the aging and empty nest population have increased. At present, it is increasingly impossible for the moderately and severely disabled elderly to receive traditional home care.

Table 3-6 SWOT Analysis of Different Long-term Care Methods for Elderly with Moderate to Severe Disability in Chengdu

Care mode	**Advantages**	**Disadvantages**	**Opportunity**	**Threat**
Family care	In line with the "filial piety" culture;In line with family circumstances; Have a sense of security and belonging; Sufficient spiritual comfort; Conform to traditional culture;	Lack of medical services; Pressure on family care; Affect family income; Physical condition requires;	The first choice for the disabled elderly; Children care as spiritual comfort; The elderly are decent and cheerful. Advocated by the government	Changes in the population structure; Changes in family structure; Children's role conflicts; The service content is limited;
Home care	Convenient Professional	Medical care is not professional	Disabled Elderly Willing to	Renovation of barrier-free facilities

		Nuising Reduce the pressure on children Good sense of identity and security	enough; Hidden Danger at home Home care costs high Lack of targeted services	Accept Relieve institutional pressure Safeguarding the Dignity of Elderly Children The government advocates	It is difficult to guarantee the professional level and quality of care. Rural Community Care Difficult
Community care		Continuation of social networks Reduce the pressure on children Low cost Service specialization	Medical care is not professional enough. High physical condition requirements There are few community caregivers. Family Economic Pressure	The government investment is relatively small. Relieve institutional pressure Easily Accepted by Disabled Elderly The government attaches great importance to and strongly supports it.	Lack of standardization of facilities Socialization and Marketization A large amount of government investment is needed, and the investment is large and the cycle is long.
Institutional care	**Nursing homes**	Good hardware facilities General medical care Reduce the Burden of Child Care	Lack of spiritual and psychological comfort; The quality of care is difficult to guarantee Need to adapt to the new	Social participation is extensive. Provide special and graded care For supplementary	The scope of service objects is narrow. Old people have little choice. Service homogeneity

			environment	services	
	Hospital (geriatric department)	Good hardware facilities Good medical care Reduce the Burden of Child Care	The applicable population is small Health insurance costs are limited. High cost of care Need to adapt to the new environment	Applicable to special groups Children rest assured	Health insurance costs are high Occupy social resources The government does not support it.
Institutional care	**Geriatric Nursing Hospital**	Good hardware facilities Good medical care Reduce the Burden of Child Care	Limited applicable population High cost of care Need to adapt to the new environment	Social participation is extensive. Provide special and graded care Disabled elderly with more medical needs are suitable The combination of medical care and support is advocated by the government.	The applicable population range is narrow The combination of medicine and nursing is highly competitive. Old people have little choice. Service homogeneity

Another type of home care, which is conducted by nursing staff visiting, not only allow the disabled elderly to stay in the family environment, but also provides more professional care for the disabled elderly. As an effective supplement to the inability of family members to provide full-time care, it not only reduces the burden on family caregivers, but also improves the care level of the disabled elderly. It is a more optimized long-term care method. However,

since most of the nursing workers who provide home care at home are part-time workers, they cannot effectively guarantee the professional level of nursing work. With the continuous exposure in news of elder abused by nursing workers, there are greater potential safety hazards in home care by nursing workers. Therefore, this method is rejected by more and more disabled elderly people. On the other hand, with the continuous increase in the cost of home care workers, the financial burden is relatively increased, and this part of the cost cannot be covered by any insurance, so the number of family choosing this long-term medical care method is gradually decreasing.

Community care currently provides relatively convenient care services for the elderly in China mainly through day care centers. During the period of community care, it can effectively solve the worries of the family and is a more suitable long-term care method for the childless elderly. Community long-term care has the advantages of professionalism, centralized care and relatively low cost. It also is conducted in a relatively familia environment for the elderly. However, at present, community care is generally provided by the government and has a limited coverage. It is more of an activity center for the elderly, providing care services for the elderly, providing a public environment for entertainment and life of the elderly in the community. For the disabled elderly, community care cannot provide the long-term care they need, and community care institutions under the existing conditions cannot accommodate the disabled elderly. Therefore, the current community care method in China is not the mainstream long-term care option for the disabled elderly.

Care in geriatric medical and nursing institutions is currently a long-term form for the disabled elderly and their families. On the one hand, geriatric medical and nursing institutions can provide better medical conditions and rehabilitation environment for the disabled elderly and have more professional teams. On the other hand, due to the expenses incurred in geriatric medical and nursing institutions, some of them can be reimbursed under the current medical insurance mechanism, which can effectively reduce the economic burden of the family. However, for the geriatric medical and nursing institutions, due to the influence of traditional nursing and rehabilitation functions, most of the geriatric facilities in China are in short of medical equipment and facilities, and because these institutions need large

investment in construction in a long period and they charge substantially however with low profit, it is difficult to conduct roform and renovation. The disabled elderly still lack spiritual comfort in the geriatric medical and nursing institutions, or suffer from problems such as low quality of service personnel, thus affecting their physical recovery process, which also affects their choice of long-term care for the geriatric medical and nursing institutions.

For the geriatric department of general hospital or geriatric specialized hospital, the disabled elderly need long-term medical care, using already-insufficient medical resources and taking more medical expenses. However, the family members are at ease because the elderly are in the hands of the professionals. However, due to the current lack of geriatrc nursing hospitals, the old-age care institutions cannot provide professional support, and this part of long-term care mode will last for a long time. For the geriatric nursing hospitals, due to their professional medical technology, they can provide life assistance, health care and rehabilitation, psychological counseling and first aid services for the disabled elderly, but the cost of care is relatively high, which is not suitable for the disabled elderly who do not need more medical care.

In general, Chengdu's moderately and severely disabled elderly have formed relatively stable market demand in the process of marketization based on their disability situation, various needs, economic conditions and other factors. With the development of society, group demand and personalized demand will give birth to new supply and demand markets, which are also potential demands found in the survey.

3.3 Analysis of problems in Chengdu geriatric nursing hospital

3.3.1 The overall scale is small and the regional distribution is uneven

In recent years, Chengdu, as a new inland city, has made remarkable achievements in economic and social development, but the development of geriatric nursing in Chengdu lags behind the economic development. Chengdu's downtown area is divided into five districts: Jinniu, Chenghua, Qingyang, Jinjiang and Hi-tech. There are only 7 geriatric nursing hospitals accepting medical insurance payment in this region, 3 in Jinniu district and 1 in

each of the rest four districts. The number of beds range from 89 to 299. The regional distribution is uneven.

A survey of Chengdu at the end of 2018 showed that the population of the elderly over 60 years old was about 3.15 million. Based on the 18.3% disability rate of the elderly population in China announced by the Office of the Health China Action Promotion Committee in 2018, Chengdu's disabled elderly population was close to 580,000. As the vast majority of disabled elderly people were disabled due to illness, the demand for medical care for the moderately and severely disabled elderly was large, and the scale of Chengdu's geriatric nursing hospital at present was small.

3.3.2 The medical insurance system does not meet the needs of geriatric nursing

At present, the medical insurance coverage rate for elderly patients receiving geriatric nursing services is still relatively high. The survey shows that 98.1% elderly with moderate and severe disability are covered the by insurance. But some geriatric nursing items are not covered by medical insurance. For example, the living care expenses such as nursing care and rehabilitation medical care needs to be paid at their own expense, which causes some unberable pressure on the elderly people and thus affects their treatment.

At present, the Chengdu Social Security Bureau has implemented a fixed daily payment method for seven geriatric nursing hospitals, with the cost of 230 yuan per day, including all treatment, nursing, drugs, traditional rehabilitation and other related costs. However, the average hospitalization cost for common diseases in community-level hospitals is around 400 yuan, which leads to the limited use of drugs for many diseases and affects the therapeutic effect. It also leads to increased pressure in the operation of the organization, and it is necessary to enhance the financial support for geriatric nursing hospitals.

3.3.3 Facilities and service quality of the institutions need to be improved

Many geriatric nursing institutions have old houses and are even without elevators, leading to increased risks for the elderly, and the public environment and sanitary conditions need to be improved. In terms of medical conditions, the equipment is old and insufficient.

There will be risks once the disabled elderly need emergency rescue and transportation. These factors also lead to a decline in the service quality of geriatric medical and nursing institutions.

In addition, Chengdu lacks high-level senior medical institutions with ideal medical conditions, and relies more on medical care services from high-level general hospitals. In order to meet the needs of graded medical care and graded services, social capital can be encouraged to enter the geriatric medical and nursing care industry on the basis of meeting the medical care needs of the disabled elderly, providing different levels of geriatric medical and nursing care services, and improving the service level and quality of geriatric medical and nursing institutions as a whole.

In this survey of geriatric nursing hospitals, it is found that the overall satisfaction of the elderly and their families with the services provided by geriatric nursing hospitals is mainly reflected in the aspects of daily-life care and medical treatment, but the overall satisfaction is relatively low in the aspects of diet, recreational activities and psychological counseling, especially in the aspects of disease administration, humanistic care as well as communication and exchange with the elderly, which need to br further improved.

3.3.4 Team of medical staff needs urgent improvement

According to the statistics and analysis of the data above, the medical staff in Chengdu geriatric nursing hospital is insufficient, the proportion of doctors to patients is low, and the professional quality needs to be improved. Due to the late start of geriatric medicine and the shortage of geriatric specialists in China, the current geriatric nursing hospitals are still in the primary stage of development, and the training of geriatric nursing professionals has just started. In colleges and universities, the set-up of geriatric nursing discipline is still in the initial exploratory stage, and the continuous education of geriatric nursing is relatively weak. The training of specialized geriatric nurses has been gradually carried out, but most of the medical staff in Chengdu geriatric nursing hospital have not received formal training of geriatric nursing specialty.

According to the analysis and research on the geriatric medical and nursing institutions

by scholars, it is found that the main providers of care services in the geriatric medical and nursing institutions are nurses and assistant nursing workers. However, according to the data of Chengdu Geriatric Disease Quality Control Center, the number of nurses and nursing workers in the geriatric medical and nursing institutions in Chengdu is relatively small. This is mainly due to the high intensity and pressure of nursing work, which leads to frequent outflow of nursing staff and increases the cost of human resources in the geriatric medical and nursing institutions while compromising the service satisfaction of the geriatric medical and nursing institutions.

3.3.5 Worrying business performance

With the increasing demand for services for the elderly, the geriatric nursing hospitals need to continuously update their service items and service levels. In this process, the increase in expenditures such as various hardware modifications and labor costs is faster than the increase in the income of medical institutions, which leads to the decrease in the balance of the geriatric nursing hospitals year by year, further affecting the well-being of the staff, especially nurses and assistant nursing workers, resulting in the increase in dismission rate, and also increasing the pressure faced by the these geriatric nursing hospitals.

The geriatric nursing hospitals are administrated by different government departments such as departments of civil affairs, medical treatment, housing and construction, planning and other departments. Under the leadership of many departments, there are overlapped responsibilities and poor communication. In addition, under the current medical insurance system, the expenses for long-term stay in geriatric nursing hospitals cannot be reimbursed, resulting in an increase in the operational pressure on senior medical institutions.

3.4 Summary of this chapter

This chapter analyzes the current situation of Chengdu's elderly geriatric nursing institutions. Also with the analysis of the medical needs of the elderly with moderate and severe disability who live in the existing elderly geriatric nursing institutions in Chengdu, it

can be seen that with the increase of aging population, the social and demographic structure in Chengdu is gradually changing, and the development of the elderly health care market has been unable to meet the existing needs, so it is necessary to expand the supply scale.

At the same time, due to the increase in the number of the moderately and severely disabled elderly, higher supply requirements have been put forward for the geriatric medical and nursing institutions. The geriatric medical and nursing institutions need to improve the allocation of medical resources, infrastructure construction and professional and technical level. In addition, due to the needs of long-term care of the disabled elderly, the existing medical insurance system cannot meet the medical needs of the disabled elderly. It is necessary to further develop and promote the long-term medical insurance system for the elderly according to the actual situation.

Chapter 4: Research Design and Data Collection

According to the classic consumer satisfaction model and the characteristics of Chengdu geriatric medical and nursing care market, and by applying the established scale in literature, this chapter analyzes the impact mechanism of the evaluation of the satisfaction of disabled elderly in Chengdu with geriatric medical and nursing care institutions, develops a DES model to measure the satisfaction of the consumers, and determines the survey questionnaire based on this, forms the final questionnaire through pilot questionnaire and adjustment of the questionnaire and analyzes the recollected questionnaire, conducts preliminary descriptive analysis, and measures the satisfaction level of elderly with moderate and severe disability with geriatric medical and nursing care institutions in Chengdu.

4.1 Research hypothesis

4.1.1 Relationship between consumer satisfaction and environment of the institutions

With the aging of China's population, medical resources for the elderly have become a scarce resource in society. The limited medical resources for the elderly cannot meet the needs of the current society. Most of the elderly with moderate and severe disability choose to be taken care of at home. Under the background that the state vigorously promotes the combination of medical care and nursing, improving the social satisfaction of medical institutions for the elderly is conducive to the development of the pension market (Wu, 2013). Daily life care needs are defined according to the standard of disability degree. The higher the disability degree is, then the fewer daily activities that can be completed independently, and the greater the degree of dependence is with multiple needs of assistance and tendance. For the elderly with moderate and severe disability, the daily life care needs are their most basic needs. For the elderly with cognitive impairment, their daily life needs to be rely on others. Therefore, there is a high demand for the convenience of various facilities and the

comfortability of the environment in the geriatric medical and nursing institutions. Therefore, this thesis believes that:

H1: Environmental satisfaction with geriatric medical and nursing institutions is positively correlated to satisfaction evaluation by the elderly with moderate and severe disability.

According to the research, the living environment for the elderly at home has a wide influence on the satisfaction of the elderly. In the geriatric medical and nursing institutions, in addition to basic pension facilities, the elderly have a higher demand for cultural facilities, health care facilities, greening facilities and other supporting equipment, and the support of environmental facilities has become an important influencing factor for the satisfaction evaluation of the elderly (Yan & Gao, 2013). Prochet and Silva (2012) found that the use of environmental factors to provide nursing services can not only promote the recovery of the elderly, but also serve as a link between doctors and patients. Furuya (2013) believes that basic environmental control can promote the disease control of the elderly.Therefore, this thesis believes that:

H1a: The infrastructure construction of geriatric medical and nursing institutions is positively related to the satisfaction evaluation by the elderly with moderate and severe disability.

At the same time, an in-depth study was made on the architectural design and functional layout of geriatric medical and nursing institutions. The study found that a reasonable functional layout and architectural design can facilitate the basic living of the elderly (Li, 2018). Qiu (2015) also believes that the architectural layout has an impact on the medical care of the elderly. Reed (2018) funded the construction of apartments for the elderly through the Atlanta federal government, and studied the influence of factors such as the layout structure and site selection of apartments for the elderly on the choice of the elderly.Therefore, this thesis believes that:

H1b: Functional area layout of geriatric medical and nursing institutions is positively correlated to satisfaction evaluation by the elderly with moderate and severe disability.

In addition, on the basis of satisfying infrastructure conditions, transportation inconvenience is a major problem facing the geriatric medical and nursing institutions. The traditional institutions have been established for a long time, which, due to low efficiency and rapid social development, are generally located in crowded sections of the old city or in remote suburban areas, with inconvenient transportation. However, the new-type geriatric medical and nursing institutions are still being developed, relying more on overall municipal transportation planning to improve the accessibility. Dickinson et al. (2014) thinks that the distance of medical treatment affects the decision-making of patients. Borah (2017) also demonstrates that the distance of residence has a significant effect on the selection of medical services. Therefore, this thesis believes that:

H1c: There is a positive correlation between the transportation convenience of geriatric medical and nursing institutions and the satisfaction evaluation by the elderly with moderate and severe disability.

4.1.2 Relationship between consumer satisfaction and medical quality of the institutions

Geriatric medical and nursing institutions is a combination of medical treatment and nursing tendance. For the elderly with moderate and severe disability, medical quality is the main concern of them and is also the core competitiveness of geriatric medical and nursing institutions. The medical quality has a significant impact on the satisfaction evaluation by the elderly (Yang, 2017). Gu, Cao, and Liu (2019) believes that the coordinated integration of medical institutions in a region and the joint improvement of medical care for the elderly can effectively improve the quality of medical treatment of the elderly. Specifically, the medical quality is mainly reflected in the effect of the treatment, which requires the joint efforts of doctors, nurses, assistant nursing workers and other parties. However, in real life, when the elderly suffer from diseases, they often choose general hospitals with strong medical strength, and in the stage of health care and tendance, they often choose geriatric medical and nursing institutions (Deng, 2016). On the one hand, it shows that the medical quality of geriatric medical and nursing institutions is at a relatively low level, on the other hand, it shows that patients have not trusted the medical quality of geriatric medical and nursing institutions.

There are relatively few professional doctors in geriatric medical and nursing institutions, and effective treatment cannot be achieved under incomplete medical conditions. However, doctors in geriatric medical and nursing institutions are able to provide adequate medical support during the period of health care and rehabilitation. Therefore, many scholars have found in the research that the elderly in geriatric medical and nursing institutions have higher satisfaction with the proficiency of doctors, but doctors with relatively higher professional ability are more likely to further improve the satisfaction evaluation by the elderly (Chen, 2010). Therefore, this thesis believes that:

H2a: There is a positive correlation between medical technology in geriatric medical and nursing institutions and satisfaction evaluation by the elderly with moderate and severe disability.

As another important component of geriatric medical and nursing institutions, the professional level of the medical team also affects the therapeutic effect and is the most direct influence on the evaluation of medical institutions by the elderly (Zhang, Huang, & Yin, 2011). According to literature analysis, in the long-term care process, the professional and technical level of nurses and nursing workers will have a significant impact on the satisfaction evaluation by the elderly, and the high-quality medical support has strong clinical application value (Wang, Cui, & Ruan, 2016). Therefore, this thesis believes that:

H2b: The quality of nursing and tendance in geriatric medical and nursing institutions is positively related to the satisfaction evaluation by the elderly with moderate and severe disability.

In addition, because the elderly are in a weak stage and need special, customized and professional medical equipment, the medical care institutions for the aged are under pressure of operation and cost, and the medical equipment are often inadequate (Zhang, 2018), which affects the treatment and caring effect of the elderly patients. Therefore, the treatment and caring effect of the medical care institutions has an impact on the satisfaction evaluation by the elderly living in the institutions. Wang et al. (2016) believes that the recognition and promotion of medical treatment and caring effects for the elderly patients after discharge can help promote the institutions and build up trust among other elderly patients. Therefore, this

thesis believes that:

H2c: The medical treatment and caring effect of geriatric medical and nursing institutions is positively related to the satisfaction evaluation by the elderly with moderate and severe disability.

For the elderly with moderate and severe disability who have been staying in the geriatric medical and nursing institutions for a long time, in addition to receiving normal medical intervention, some health care measures are needed to improve the physical recovery or relieve the pressure brought by the patients themselves, and a multi-level medical care system is constructed and perfected, which can improve the satisfaction evaluation of the elderly. Long et al. (2016) believes that with the increasing demand for medical care for the elderly, the training of health service personnel in geriatric medical and nursing institutions should be enhanced to meet the increasing social demand. Gomes et al. (2018) believes that health care intervention can enable disabled elderly people to get exercise and stimulation. Through games, disabled elderly people can be better integrated into exercise and obtain better health care effects. Li et al. (2018) believes that the in-depth study of intelligent exercise rehabilitation mode promotes the elderly health care intervention and treatment. Therefore, this thesis believes that:

H2d: Health care effect of geriatric medical and nursing institutions is positively correlated to the satisfaction evaluation by the elderly with moderate and severe disability.

Medical rehabilitation nursing is mainly used for the treatment of diseases and post-treatment nursing. Generally speaking, the disabled elderly with multiple severe diseases is in great need of rehabilitation nursing. For the elderly with moderate disability, especially those can regain health by rehabilitation, timely and effective rehabilitation can improve their quality of life and delay the progress of the disease. However, for the elderly with severe disability, how to control the disease and reduce the damage caused by the elderly syndrome through medical intervention is very important. Leonardi et al. (2018) confirmed through research that optimizing the treatment mode and medical scheme can effectively treat acute coronary syndrome of the elderly. Therefore, this thesis believes that:

H2: The medical quality of the geriatric medical and nursing institutions is positively correlated to the satisfaction evaluation by the elderly with moderate and severe disability.

4.1.3 Relationship between consumer satisfaction and service quality of the institutions

According to KANO model analysis, medical quality belongs to the primary needs of the elderly residents, and directly and stably influencing the elderly's evaluation on the satisfaction with the institution. The high-quality medical services provided by the geriatric medical and nursing institutions belong to the intentional needs of the elderly residents, which can proportionally affect the satisfaction evaluation of the elderly residents with the medical institutions. A good service attitude helps to improve the service quality of the medical institutions (Ding, 2014). Caner and Cilasun (2019) through a survey of some medical institutions in Turkey, found that the service measures of medical institutions are conducive to promoting the elderly to resort to health institutions, and also are an important factor in evaluating the satisfaction of medical and health institutions. Therefore, this thesis puts forward the following assumptions:

H3: Service satisfaction of geriatric medical and nursing institutions is positively correlated to satisfaction evaluation by the elderly with moderate and severe disability.

According to the characteristics of geriatric medical and nursing institutions, this section mainly demonstrates from four aspects: doctor's service attitude, nurse's service attitude, assistant nursing worker's service attitude and administration's service attitude.

Doctors are the main components of medical treatment in geriatric medical and nursing institutions. Full doctor-patient communication, positive psychological counseling (Huang, 2018), active cooperation with nurses and professional level of nursing technology can effectively improve patients' satisfaction with medical institutions. At the same time, good professional ethics, reasonable ratio of doctors to nursing staff, patient-centered concept can greatly improve patients' satisfaction with medical institutions (Zhang, 2014; Wang, Wang, & Cong, 2016). Kittelson et al. (2019) believes that dignity therapy and mental health services for the elderly patients by medical staff can improve the satisfaction evaluation of cancer

patients on the geriatric medical and nursing services. Therefore, this thesis believes that:

H3a: The service attitude of doctors in geriatric medical and nursing institutions is positively related to the satisfaction evaluation by the elderly with moderate and severe disability.

H3b: Nurses' service attitude in geriatric medical and nursing institutions is positively correlated to satisfaction evaluation by the elderly with moderate and severe disability.

As an indispensable part of medical institutions for the elderly, nurse plays an important role in the care of the moderately and severely disabled elderly (Hao, 2016). However, the overall quality and nursing level of nursing staff cannot be fully affirmed by patients. The service expectation of patients is generally higher than the actual nursing level. Therefore, the overall evaluation of patients' satisfaction with the nursing profession is relatively low. However, nurses and assistant nursing workers should work together to give full play to each other's advantages, and enhance mutual exchanges, and provide more professional medical services for patients in multiple aspects which can effectively improve patients' satisfaction evaluation with medical institutions (Wang, Wang, & Cong, 2016). Kwak, Lee, and Kim (2017) believe that improving the professional quality and service ability of nursing workers is conducive to improving the satisfaction evaluation of low-income elderly. Therefore, this thesis holds that:

H3c: The service attitude of assistant nursing workers in geriatric medical and nursing institutions is positively related to the satisfaction evaluation of the moderately and severely disabled elderly.

Geriatric medical and nursing institutions are still in the initial stage of development in the market at present. With the continuous improvement of the geriatric medical and nursing market, the medical structure is bound to gradually increase. As a market main body, the managers of geriatric medical and nursing institutions also need to develop their own hospital culture well, continuously improving the trust of patients by enhancing their social influence, and persisting in doing patient satisfaction surveys (Lin & Zeng, 2011). They should focus on "patients", improve the service awareness of administration staff in various positions,

improve logistics services and various medical procedures, ensure the improvement of medical quality, continuously innovating administration service modes and trying to raise the satisfaction evaluation of patients (Li, Liu, & Wu, 2018). Andrade et al. (2019) conducted a survey of 381 primary health care geriatric medical and nursing institutions and analyzed the collected data. The results show that the overall service quality in primary geriatric nursing institutions is relatively low and needs further strengthening in service administration. Therefore, this thesis believes that:

H3d: The service attitude of medical institution managers is positively related to the satisfaction evaluation of the moderately and severely disabled elderly.

4.1.4 Relationship between consumer satisfaction and administration level of the institutions

In addition to obtaining medical resources, the administration ability of medical institutions also has an impact on the satisfaction evaluation of elderly residents (Xia, Zhu, & Chen, 2018). Luciana et al. (2019) found that electronic health administration can reduce administrative burden, save operating costs, improve administration efficiency and facilitate elderly residents through research on Catalonia and Ireland's geriatric medical and nursing institutions. Therefore, this thesis puts forward the following assumptions:

H4: Administration satisfaction of geriatric medical and nursing institutions is positively correlated to satisfaction evaluation of the elderly with moderate to severe disability.

The investigation and study on the elderly's oral health care shows that shortening the waiting time for outpatient service and payment can effectively improve the satisfaction evaluation of the elderly patients. Arling et al. (2013) analyzed the payment process of dementia patients, and believed that due to the extreme sense of insecurity of these patients, their relatives had great obstacles in completing payment in time. With the development of information technology, online electronic payment has begun to be popularized in various medical institutions. Medical institutions can reduce the waiting time for patients, and the elderly and their families can pay fees through independent payment machines or electronic

payment, and improve the efficiency of medical treatment and service satisfaction (Zhou, 2019). Therefore, this thesis believes that:

H4a: The convenience of the payment process in geriatric medical and nursing institutions is positively related to the satisfaction evaluation of the moderately and severely disabled elderly.

The elderly with moderate and severe disability often needs hospitalization or rehabilitation. For the physical condition of the elderly, the hospitalization formalities are mostly completed by the family members. The elderly's dependency on the family members enhances during their stay, especially during the initial days after they move in. If the elderly stay away from the family members for a long time due to various formalities, the satisfaction evaluation of the elderly in the medical care institutions will also decline. Therefore, through research and comparison, the adoption of an integrated medical treatment administration mode (Hong, Fang, & Hong, 2016) of check-in reservation and two-way medical treatment can effectively reduce the time for the check-in and improve their satisfaction evaluation. Therefore, this thesis believes that:

H4b: The convenience of admission and discharge procedures in geriatric medical and nursing institutions is positively related to the satisfaction evaluation of the elderly with moderate to severe disability.

The elderly have limited or relatively few sources of economic income. If they rely on themselves or children's support for medical expenses, they will shoulder a greater economic burden, which will affect the physical recovery of the elderly residents and will also cause fluctuations in satisfaction evaluation. If they rely on state health insurance or commercial insurance for medical expenses, the burden on the elderly residents and their families will be greatly reduced. However, the payment process of medical insurance is a relatively complicated procedure. Wang (2014) believes that if medical institutions can assist patients in medical insurance reimbursement, on the one hand, it can reduce the psychological burden of the elderly, on the other hand, it can also facilitate the influx of funds from medical institutions. Therefore, this thesis believes that:

H4c: Insurance reimbursement assistance in geriatric medical and nursing

institutions is positively related to satisfaction evaluation of the moderately and severely disabled elderly.

The disabled elderly who live by themselves have less family affection and their need for spiritual comfort is generally higher than that of other disabled elderly. For the moderately and severely disabled elderly, their needs for spiritual comfort are especially prominent due to their limited mobility. Mental consolation can often reduce or prevent the occurrence of mental and behavioral abnormalities in the elderly with moderate or severe cognitive impairment, who need professional guidance and support (Wang, Tan, & Zheng, 2009). Based on the classical consumer satisfaction research theory, value-added services of products can effectively improve consumer satisfaction evaluation. Similarly, in the geriatric medical and nursing institutions, medical institutions can provide relative value-added services according to different diseases, improve the happiness of the elderly residents, and thus their satisfaction evaluation. Therefore, this thesis believes that:

H4d: Value-added service measures in geriatric medical and nursing institutions are positively related to satisfaction evaluation by the moderately and severely disabled elderly.

4.1.5 Relationship between consumer trust and satisfaction

Satisfaction evaluation is an important means to improve the administration of medical institutions. Establishing a good doctor-patient relationship between doctors and patients to enable elderly patients to have trust in the medical team can effectively improve the satisfaction evaluation by elderly patients (Liu, 2013), while trust plays a major role in the satisfaction evaluation of medical institutions, second only to patient’s direct perception of medical expenses (Zhang, 2016). It can be seen that the level of trust can attract the elderly’s attention from other aspects or indicators related to the satisfaction evaluation. Javier et al. (2007) conducted a survey in the Christ House in Chillie, and found that effective publicity can promote the trust between doctors and patients, thus attracting more elderly people to stay in the institution. Huang et al. (2019) conducted a survey on doctors and the elderly in geriatric medical and nursing institutions in Taiwan. The results show that patients' trust in

doctors can reduce doctors' occupational tiredness.

Doctor-patient trust is an evolving process. Word of mouth reputation and institution's publicity effort will all increase the trust of elderly patients in medical institutions. However, the establishment or destruction of trust mainly occurs during the hospitalization of elderly patients in medical institutions (Guo, 2011). The patience and tendance of doctors and nursing teams can increase the sense of security and intimacy of elderly patients, thus enhancing the patients' trust in medical workers and. It can not only make the elderly cooperate more actively but also improve the their satisfaction evaluation on the institution (Sun, 2010). In addition, providing personalized value-added services can also increase the dependence and trust of elderly patients on medical workers (Pang, 2015).

Based on this, this thesis puts forward the following assumptions:

H5: The trust of the elderly with moderate and severe disability in the geriatric medical and nursing institutions is positively related to the satisfaction evaluation.

H6: The trust of the elderly with moderate and severe disability in the geriatric medical and nursing institutions is positively related to environmental satisfaction.

H7: The trust of the elderly with moderate and severe disability in geriatric medical and nursing institutions is positively related to their treatment satisfaction.

H8: The trust of the elderly with moderate and severe disability in geriatric medical and nursing institutions is positively related to service satisfaction.

H9: The trust of the elderly with moderate and severe disability in geriatric medical and nursing institutions is positively related to their administration satisfaction.

The assumptions in this thesis are combed as follows, as shown in Table 4-1:

Table 4-1 the Assumptions and Sources of These Assumptions

Code	Content	Source literature
H1	Environmental satisfaction with geriatric medical and nursing institutions is positively correlated to satisfaction evaluation by the elderly with moderate and severe disability.	Wu (2013)
H1a	The infrastructure construction of geriatric medical and nursing institutions is positively related to the satisfaction evaluation by the elderly with moderate and severe disability.	Yan and Gao (2013) Prochet and Silva (2012)

H1b	Functional area layout of geriatric medical and nursing institutions is positively correlated to satisfaction evaluation by the elderly with moderate and severe disability.	Furuya (2013) Qiu (2015) Dickinson et al. (2014) Borah (2017)
H1c	There is a positive correlation between the transportation convenience of geriatric medical and nursing institutions and the satisfaction evaluation by the elderly with moderate and severe disability.	Dickinson et al. (2014) Borah (2017)
H2	The medical quality of the geriatric medical and nursing institutions is positively correlated to the satisfaction evaluation by the elderly with moderate and severe disability	Yang (2017) Leonardi et al. (2018) Yang (2017)
H2a	There is a positive correlation between medical technology in geriatric medical and nursing institutions and satisfaction evaluation by the elderly with moderate and severe disability.	Deng (2016) Gu, Cao, and Liu (2019)
H2b	The quality of nursing and tendance in geriatric medical and nursing institutions is positively related to the satisfaction evaluation by the elderly with moderate and severe disability.	Chen (2010) Zhang, Huang, and Yin (2011) Wang et al. (2016)
H2c	The medical treatment and caring effect of geriatric medical and nursing institutions is positively related to the satisfaction evaluation by the elderly with moderate and severe disability.	Zhang (2018) Wang et al. (2016)
H2d	Health care effect of geriatric medical and nursing institutions is positively correlated to the satisfaction evaluation by the elderly with moderate and severe disability.	Chen (2010) Gomes et al. (2018) Li et al. (2018)
H3	Service satisfaction of geriatric medical and nursing institutions is positively correlated to satisfaction evaluation by the elderly with moderate and severe disability.	Ding (2014) Caner and Cilasun (2019)
H3a	The service attitude of doctors in geriatric medical and nursing institutions is positively related to the satisfaction evaluation by the elderly with moderate and severe disability.	Huang (2018) Zhang (2014)
H3b	Nurses' service attitude in geriatric medical and nursing institutions is positively correlated to satisfaction evaluation by the elderly with moderate and severe disability.	Wang et al. (2016) Kittelson et al. (2019)
H3c	The service attitude of assistant nursing workers in geriatric medical and nursing institutions is positively related to the satisfaction evaluation of the moderately and severely disabled elderly.	Hao (2016) Wang et al. (2016) Kwak, Lee, and Kim (2017)
H3d	The service attitude of medical institution managers is positively related to the satisfaction evaluation of the moderately and severely disabled elderly.	Lin and Zeng (2011) Li, Liu, and Wu (2018) Andrade et al. (2019)
H4	Administration satisfaction of geriatric medical and nursing institutions is positively correlated to satisfaction evaluation of the elderly with moderate to severe disability.	Xia, Zhu, and Chen (2018) Luciana et al. (2019)
H4a	There is a positive correlation between the payment process of geriatric medical and nursing care and satisfaction evaluation of the elderly with moderate to severe disability.	Arling et al. (2013) Zhou (2019)
H4b	The convenience of admission and discharge procedures in geriatric medical and nursing institutions is positively related to the satisfaction evaluation of the elderly with moderate to severe disability.	Hong, Fang, and Hong (2016)

H4c	Insurance reimbursement assistance in geriatric medical and nursing institutions is positively related to satisfaction evaluation of the moderately and severely disabled elderly.	Wang (2014)
H4d	Value-added service measures in geriatric medical and nursing institutions are positively related to satisfaction evaluation by the moderately and severely disabled elderly.	Wang, Tan, and Zheng (2009)
H5	The trust of the elderly with moderate and severe disability in the geriatric medical and nursing institutions is positively related to the satisfaction evaluation.	Liu (2013)
H6	The trust of the elderly with moderate and severe disability in the geriatric medical and nursing institutions is positively related to environmental satisfaction.	Javier et al. (2007)
H7	The trust of the elderly with moderate and severe disability in geriatric medical and nursing institutions is positively related to their treatment satisfaction.	Huang et al. (2019)
H8	The trust of the elderly with moderate and severe disability in geriatric medical and nursing institutions is positively related to service satisfaction.	Zhang (2016) Guo (2011)
H9	The trust of the elderly with moderate and severe disability in geriatric medical and nursing institutions is positively related to their administration satisfaction.	Sun (2010) Pang (2015)

4.1.6 Model design

Scholars have done a lot of research on consumer satisfaction in the field of consumer satisfaction and health care. However, with the development of the aging population, the research on consumer satisfaction in geriatric medical and nursing institutions is relatively inadequate. Based on the research results of scholars and the existing mature models, the theoretical model of this thesis is formed—the Model of Satisfaction of Elderly with Moderate and Severe Disability with Medical Institutions in Chengdu (DES Model). "D" means disabled elderly; "H" means elderly health hospital, "S" means Satisfaction.

Based on Maslow's hierarchy of needs theory and the classic consumer satisfaction research model, the theoretical model in this thesis is intended to measure the satisfaction of the moderately and severely disabled elderly with the geriatric medical and nursing institutions from four dimensions of environmental satisfaction, medical quality satisfaction, service satisfaction and administration satisfaction, and to introduce trust perception. While studying and analyzing the satisfaction of various variables to consumers, it is also intended to measure the impact of trust on consumer satisfaction.

Specifically, environmental satisfaction mainly refers to the infrastructure of geriatric medical and nursing institutions, including basic medical equipment, green environment of

the institutions, surrounding environment, transportation, convenience of daily life during hospital stay. Moderately and severely disabled elderly people in geriatric medical and nursing institutions will generally stay for a long time. Familiar environment will make the elderly have a sense of dependency and trust. Relatively quiet environment is conducive to the elderly's physical recovery and help them obtain good rest. From the perspective of economics, external factors have a direct effect on consumer satisfaction. A good environment can significantly improve consumer satisfaction. On the contrary, poor environment can significantly reduce consumer satisfaction.

Medical quality satisfaction mainly refers to the treatment effect of the geriatric medical and nursing institutions in the process of treating the disabled elderly, mainly including medical technology, medical quality, medical effect, health care recovery effect and other factors. From the perspective of economics, the attribute of the product itself is the direct source of consumer satisfaction. The price, function and quality of the product are the main influencing factors of consumer satisfaction evaluation. Specifically for the geriatric medical and nursing institutions, the treatment is the main product provided by the geriatric medical and nursing institutions and falls within the scope of core competitiveness. Consumer satisfaction with medical care is mainly reflected in the effectiveness of the treatment. Reasonable and appropriate treatment plan is not only the embodiment of the capability of the medical institutions, but also can improve the satisfaction evaluation of the elderly to the medical institutions.

Service satisfaction mainly refers to the satisfaction evaluation of service attitude in the whole process of the medical institutions during the elderly’s stay. It mainly includes factors such as doctor service attitude, nurse service attitude, nursing workers service attitude, administration service attitude and attitude towards providing value-added services.Doctor's patience can significantly improve the patient's satisfaction evaluation. Meanwhile, good public service can inhibit the occurrence of unstable situation. The overall good service environment of medical institutions can also eliminate or alleviate some doctor-patient conflicts and improve the satisfaction evaluation of the elderly residents.

Administration satisfaction mainly refers to the influence of the non-medical

administration level of the geriatric medical and nursing institutions on the satisfaction evaluation of the elderly residents. It mainly includes such factors as the convenience and quickness of the payment and payment process, the convenience and quickness of the admission and exit process, and the transparency and information of the expenses. The administration personnel of medical institutions are important members of the overall team of the institution. The management capability of administration cadres directly affects the all undertakings in the institution. With the focus shifting from on mere treatment effect in the past to on the overall tendance at present, medical administration should also undergo corresponding changes to adapt to the development of modern medical care concept. Through the improvement of administration level of medical institutions, the satisfaction evaluation of the elderly residents should be improved.

Trust mainly refers to consumers' trust judgment on the institution by their own knowledge structure, experience, information collection and other ways, deciding whether to move in the institution. Medical institutions can increase patients' trust by effective services in the whole process of advertising, community free clinic and patient visits, which can effectively raise patients' satisfaction evaluation. Similarly, if the elderly and their families create trust of the institution, they will have a more positive evaluation of this medical institution, and the threshold of satisfaction for the environment, medical care, services, and management will be lowered, which will play a word of mouth in the market. It plays an important regulatory role.

Moderately and severely disabled elderly people admitted to geriatric medical and nursing institutions conduct satisfaction evaluation on institutions through four dimensions of environmental satisfaction, medical quality satisfaction, service satisfaction and administration satisfaction. Positive identification of the four variables by consumers can increase trust. Therefore, this thesis introduces trust perception on the basis of the four dimensions (see Table 4-2). The final results are divided into two types of results: satisfaction of the elderly people admitted and complaints of the elderly people admitted. The model is shown in Figure 4-1.

Table 4-2 Definition of Variables in DES Model and their Sources

Variable property	Variable name	Definition	Source
Independent Variables	Environmental Satisfaction	The hardware infrastructure of geriatric nursing institutions includes basic medical equipment, internal and external environment construction and other factors.	Chen, Chen, and Zhu (2000) Hauer et al. (2017) Hoedemakers et al. (2019) Zhao and Zhu (2007)
	Medical quality satisfaction	Therapeutic effect of geriatric medical and nursing institutions in treating disabled elderly	Mori et al. (2016) Melo and Alves (2019) Liu, Li, and Liu (2002)
	Service Satisfaction	The satisfaction evaluation on the service attitude of the institutions during elderly's stay.	He, Yue, and Yang (2006) Ilinca and Calciolari (2015)
	Administration Satisfaction	Influence of non-medical administration level of geriatric medical and nursing institutions on satisfaction evaluation of the elderly	Xia and Feng (2016) Li et al. (2018)
Adjust Variables	Trust	Consumers will trust and judge the institutions by their own knowledge structure, experience and information collection.	Zhou and Wang (2015) Yang (2017) Melo and Alves (2019)
Dependent Variables	Satisfaction	Complaints or Satisfaction as a result of the co-effect of independent and moderator variables.	

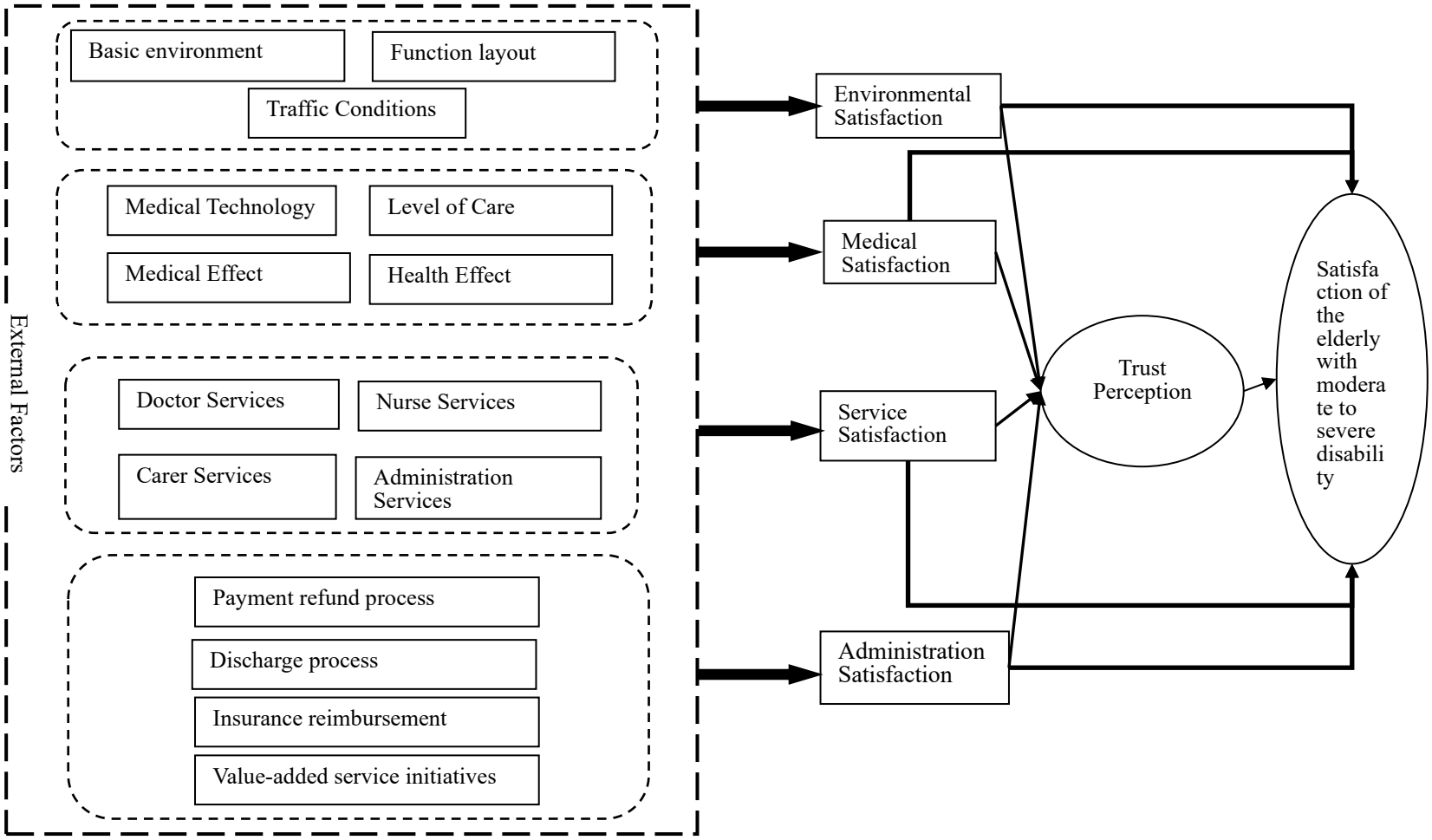

Figure 4-1 DES Model

4.2 Variables and measurements

According to the relevant principles of content validity, this thesis mainly adopts the method of extracting relevant questions from mature questionnaires to cmplete the final questionnaire.

In terms of environmental satisfaction, many scholars believe that diet, ward environment, public environment, infrastructure and medical treatment environment play an important role in the satisfaction evaluation by disabled elderly. Wu (2013) believes that access of diet are conducive to the rehabilitation of disabled elderly, and can also effectively improve the satisfaction evaluation by disabled elderly in institutions. Yan and Gao (2013) believes that the elderly have a demand for cultural facilities, health care facilities, greening surroundings and other supporting equipment, so this thesis will include the use of health care and rehabilitation facilities in the questionnaire. In addition, the surveys conducted by Li (2018) and Reed (2018) show that traffic convenience and the appropriate division of functional area of geriatric medical and nursing institutions are conducive to improving the satisfaction evaluation by the elderly residents. This thesis, based on the characteristics of the disabled elderly population, includes the accessibility of the disabled elderly to and from wards, home address and transportation convenience of the geriatric medical and nursing institutions in the questionnaire.

From the perspective of employees in geriatric medical and nursing institutions, their functions are measured in two dimensions, namely, professional competence and service attitude. According to the job responsibility, the employees in the geriatric medical and nursing institutions are divided into four professions: doctors, nurses, assistant nursing workers and administration staff. Therefore, combined with the theoretical model of this thesis, the professional competence and service attitude of the four professions are included in the questionnaire. In addition, Gomes et al. (2018) believes that the visiting frequency of doctors and nurses can promote the recovery of the elderly. After consideration, this thesis believes that this behavior is part of the service provided by the geriatric medical and nursing institutions, so this factor is included in the questionnaire.

As an important part of geriatric medical and nursing institutions, administration and operation is a vital part. Its convenience, humanization and transparency have an important impact on the satisfaction evaluation by the elderly. Therefore, this thesis will include convenient administration and operation performance in the questionnaire, such as: convenience of payment and refund; convenience of admission and discharge; convenience of medical treatment process; reasonable division of ward area and diagnosis and treatment area. Considering that the administration and operation work is mainly conducted by non-medical staff, and the work flow and work content are relatively invisible to the patients, transparency of the work flow and work content is conducive to obtaining the trust of the elderly living in the residence, and further improving the satisfaction evaluation of the elderly living in the residence. Therefore, according to the research results of Hong, Fang, and Hong (2016) and Wang (2014), this thesis will consider the transparency of the payment,t he integrity of medical personnel, the staff's patience, the division of relevant departments in the questionnaire. Considering that there are relatively many causes of disability among the elderly residents, the disabled elderly usually have a relatively higher self-esteem and a higher degree of attention to privacy during medical treatment.

In addition, as a semi-profit unit, providing value-added services to obtain more income has become an inevitable choice for the sustainable development of the institution, and providing value-added services. Based on the analysis of the current situation of Chengdu geriatric medical and nursing institutions and the research results of other scholars, it is found that the disabled elderly who enjoy value-added services in the geriatric medical and nursing institutions have higher satisfaction evaluation. Therefore, combining the research conclusions of Wang, Tan, and Zheng (2009), Li (2018) and Andrade et al. (2019), this thesis includes mental health services, regular physical examination services, personalized medical care services and social services in the questionnaire.

According to the theoretical model of this thesis, regarding the role of moderator variables, trust perception affects the satisfaction evaluation of elderly residents. The stronger trust perception, the higher satisfaction evaluation. Sun (2010) believes that the patience and professionalism of doctors and nursing teams can make elderly patients trust medical workers

more. In addition, Pang (2015) believes that providing personalized value-added services can also increase the elderly patients' sense of dependence and enhance trust in medical workers. Therefore, the professional level of nurses and assistant nursing workers, doctor's medical treatment plan and treatment quality are introduced into the questionnaire. At the same time, the psychological counseling can effectively relieve the emotional burden of the disabled elderly and has a strong influence on the trust perception of the elderly. Therefore, the psychological health service is considered as the influencing factor of trust perception in the questionnaire design.

According to the influence of a series of external factors, the elderly with moderate and severe disability admitted to the geriatric medical and nursing institutions carry out satisfaction evaluation on the institutions, and the results can be divided into complaints and satisfaction. A high satisfaction rating for the elderly residents will increase their trust in the elderly institutions and become the active advocator of the institutions. If the satisfaction of the elderly residents is low, they are likely to make complaints about the elderly institutions, which is detrimental to the market promotion of the institutions. Therefore, this thesis will include the elderly satisfaction evaluation and willingness of promotion for the institution in the questionnaire.

4.3 Questionnaire design and adjustment

4.3.1 Questionnaire design

The questionnaire used in this thesis is mainly designed according to the model and hypothesis established in this thesis after reviewing the literature, including 6 variables and 59 measuring indicators.

The questionnaire is divided into three parts: the first part is the basic situation survey; the second part is the survey of influencing factors of satisfaction evaluation of geriatric medical and nursing institutions for the moderately and severely disabled elderly; the third part is the impact of trust perception on satisfaction evaluation of the moderately and severely disabled elderly. The second part is divided into two major sections: the first section conducts

basic research on environmental satisfaction, medical quality satisfaction, service satisfaction and administration satisfaction, and the second section focuses on the impact of value-added services on satisfaction evaluation by the moderately and severely disabled elderly.

The first part is the survey of the basic information of the surveyed object, measured by multiple-choice questions, including 15 measurement indicators such as gender, age, educational background, occupation, marital status, number of children, medical insurance type, monthly income, monthly medical expenses, medical expenses supported by children, distance from the geriatric medical and nursing care, nursing methods, and causes of disability. The design is mainly determined according to the characteristics of the geriatric medical and nursing industry, aiming to include the basic information of the moderately and severely disabled elderly and lay a foundation for subsequent research.

The second part is designed to measure the influencing factors of satisfaction evaluation of medical institutions for the elderly with moderate and severe disability, which is measured by Likert scale scoring method. This part is designed based on the model and assumptions constructed in the thesis, mainly including: environmental satisfaction survey, medical quality satisfaction survey, service satisfaction survey and administration satisfaction survey.

The third part is designed to investigate the influence of trust perception of the elderly with moderate to severe disability on the satisfaction evaluation of medical institutions, which includes 7 items. The purpose is to investigate the influence of trust perception as a regulating variable on the independent and dependent variables of the other four dimensions.

The questionnaire as a whole includes59 measuring indicators, including 15 basic information measuring indicators and 44 influencing factors measuring indicators. The influencing factors are measured by Likert scale, and the numbers from 1 to 5 respectively represent "very small influence-very big influence" (see appendix 3 Table 5).

4.3.2 Pilot questionnaire

In order to improve the scientificity and effectiveness of the questionnaire, before the formal investigation, 50 questionnaires were distributed as an effort of pre-investigation. 50 were recovered, 6 invalid questionnaires were removed, and 44 actual valid questionnaires

were collected. The purpose of pilot questionnaire is mainly to observe whether the items in the questionnaire are clearly expressed, whether there might be ambiguity to the respondents. The final questionnaire is detailed in the appendix.

Another purpose of the pretest is to conduct a preliminary reliability analysis on the respective variables through questionnaire recovery. After verification, the Cronbach index of the respective variables in this study is above 0.8 (see appendix 3 Table 6), and the Cronbach index of some but not many items is lower than 0.8. However, considering the relatively small number of the issued questionnaires and the overall validity of the independent variables, no items are removed from the questionnaire and the overall verification meets the standard requirements. Therefore, the questionnaire has high reliability and can be used.

4.4 Data acquisition and reliability and validity test

4.4.1 Questionnaire distribution and data collection

The subjects of the survey are mainly divided into two parts: first, some of the moderately and severely disabled elderly who have been admitted to the geriatric nursing hospital; Second, the families of the elderly with moderate to severe disability who have been hospitalized for a long time.

Among them, the elderly with moderate and severe disability admitted to the geriatric nursing hospitals mainly refer to the elderly who are at least 60 years old (according to the standards defined by the World Health Organization for the age of the elderly in developing countries), who have lived in 7 fixed-fee nursing hospitals in Chengdu for more than 3 months, who are assessed as moderately and severely disabled by FIM scale, and are willing to be investigated.

Firstly, the functional independence measurement (FIM) was conducted for the elderly living in 7 geriatric medical and nursing institutions in Chengdu, mainly apply field observation approach study diagnostic logs of the institution. The evaluation included four aspects, totaling 13 items:

Self-care ability: eating, washing, bathing, putting on clothes for the upper and lower part of the body and using toilet;

Sphincter control: urine control, defecation control;

Transfer: transfer from/to beds, chairs and wheelchairs, access to toilets, bathrooms and bathtubs;

Motor function: walking or wheelchairing, walking on a staircase.

According to the evaluation results, combined with the scoring criteria of FIM scale, the results are divided into 3 categories and 7 levels, of which 3 categories mainly distinguish the indepenent ability of the elderly residents:

I.Independence.

7 points, complete independence (completed within a standard, safe and reasonable time);

6 points, incomplete independence (using auxiliary equipment, exceeding normal time).

II. Limited dependence.

5 points, need monitoring (need guidance, help to prepare necessary supplies);

4 points, need a small amount of help (patient contribution > 75%);

3 points, need moderate amount of help (patient contribution > 50%).

III. Complete dependence.

2 points, need maximum help (patient contribution > 25%);

1, need full help (patient contribution < 25%).

According to FIM score, the full score is 126 points, including 91 points for motor function and 35 points for cognitive function, which can be used to classify the elderly into 7 grades: (see Table 2)

(1) 108 points to 125 points for independence;

(2) 90 points to 107 points for extremely light dependence and conditional independence;

(3) 72 to 89 points for mild dependence;

(4) 54 points to 71 points for moderate dependence;

(5) 36 to 53 points for severe dependence;

(6) 19 points to 35 points for extremely severe dependence;

(7) 18 points or less for complete dependence.

The elderly with middle and severe disability in this thesis refer to those belonging to II and III categories, and the four grades of (4)(5)(6)(7). The families of the moderately and severely disabled elderly mainly refer to the care families of the moderately and severely disabled elderly who have been hospitalized for a long time, especially the families of some of the elderly who are unable to finish a questionnaire with their own mobility or intelligence.

The research team consists of 20 members, comprising 2 masters, 10 bachelors, 8 junior college graduates, among whom there are 4 with senior professional titles, 6 with intermediate professional titles, 7 with junior professional titles and 3 senior social workers. The assessors participating in the project research have education background of medical science or nursing. To ensure the quality and accuracy of the assessment, all assessors participating in the project research before the investigation have received unified training to minimize human errors. Each assessment is jointly completed by 2 assessors.

Before entering the nursing hospital for investigation, the researchers communicated with the staff of various nursing hospitals in advance to get a preliminary understanding of the basic situation of the elderly who are willing to be investigated. During the on-site evaluation, the relevant data of the elderly and their families were collected and evaluated under the guidance of nursing hospital staff. After the questionnaire was collected through on-site investigation, the data were checked on the spot. If there had been any mistakes, they would have been corrected in time.

As of 2015, there are about 3.15 million elderly in Chengdu. The pre-survey of this study found that the number of disabled elderly in Chengdu are estimated to be 86,000. The questionnaire involved in this thesis adopts the method of on-the-spot investigation, visiting 7 geriatric nursing hospitals in Chengdu. A total of 2258 elderly people were admitted to 7

medical care institutions, 891 of whom met the FIM standard. 536 people of them were unable to complete the questionnaire or their family could not or were unwilling to finish the questionnaire. Therefore 355 questionnaires were distributed, 45 invalid questionnaires were eliminated, and 310 valid questionnaires remained, accounting for 87.32% of the total questionnaire, which is representative enough.

4.4.2 Reliability analysis

Whether the questionnaire is reliable or not is generally evaluated by the reliability test. The higher the reliability index, the higher the reliability of the scale, which can then be used for quantitative analysis. Otherwise, it shows that the scale does not have the basis for quantitative analysis and there is no correlation to the practical situation. Before the formal questionnaire survey, this thesis carried out a pilot questionnaire. During the pilot questionnaire, the reliability of the initial questionnaire was tested. The results showed that the reliability test of each item was above 0.8, which could be used for investigation. However, considering the small size of the pilot questionnaire, there were only 44 valid data. After the actual investigation, this thesis re-analyzed the reliability of the data. In this thesis, the reliability analysis function in SPSS19.0 is used to analyze the reliability, and the coefficient of Cronbach α for each variable is calculated as follows:

$$\boldsymbol{\alpha = \frac{x}{x-1}\left(1 - \frac{\sum \epsilon i^2}{\epsilon_x^2}\right)} \qquad (4.1)$$

Where x is the number of items in the questionnaire, ϵi^2 is the variance of the score of individual items, and ϵ_x^2 is the variance of the total score of the questionnaire. According to the reliability standard, the most reliable questionnaire is when the α coefficient is greater than 0.8, the ideal questionnaire is when the α coefficient is between 0.7 and 0.8, and the acceptable questionnaire is when the α coefficient is between 0.6 and 0.7. If the α coefficient is lower than 0.6, the questionnaire is deemed unacceptable and needs to be revised.

A total of 310 valid questionnaires were collected in this survey questionnaire. Each variable item was distinguished according to the letter codes in the survey questionnaire. SPSS19.0 reliability analysis was applied. The specific results are shown in Table 4-3.

Table 4-3 Reliability Test of Each Variable

Variable	Serial number	Total Correlation of Corrected Item	Cronbach's Alpha Value for Item Deleted	Cronbach's Alpha Value
Environmental satisfaction	1a	.811	.844	.836
	1b	.706	.753	
	1c	.718	.733	
	1d	.836	.826	
	2a	.803	.733	
	2b	.816	.742	
	2c	.804	.818	
	2d	.788	.749	
	2e	.719	.753	
	2f	.765	.755	
	2g	.794	.701	
Service Satisfaction	3a	.762	.711	.821
	3b	.745	.778	
	4a	.826	.799	
	4b	.845	.760	
	4c	.795	.836	
	4d	.802	.823	
Administration Satisfaction	5a	.771	.796	.804
	5b	.786	.844	
	5c	.718	.733	
	5d	.780	.760	
	5e	.813	.790	
	5f	.721	.755	
	5g	.827	.751	
	5h	.805	.761	
	5i	.799	.836	
	5j	.833	.799	
Medical quality satisfaction	6a	.785	.845	.891
	6b	.817	.757	
	6c	.737	.726	
	6d	.703	.722	
	6e	.823	.791	
	6f	.840	.780	
	6g	.838	.747	
Trust Perception	9a	.738	.772	.898
	9b	.820	.793	
	9c	.798	.751	
	9d	.729	.810	
	9e	.816	.816	
	9f	.847	.704	
	9g	.759	.826	
Satisfaction	10a	.828	.747	.880
	10b	.767	.737	
	10c	.847	.720	
	10d	.810	.829	

As can be seen from Table 4-3, the correlation coefficient of correction items for each item in the questionnaire designed in this thesis is above 0.7. After deleting items, the α coefficient changes slightly. The overall α coefficient of each variable is above 0.8, which has good reliability.

Specifically, it shows that if the items of 4c, 5b, 5i, 6a, 9d and 9g are deleted, the overall reliability of the questionnaire will be improved. This phenomenon is not clearly shown in the pilot questionnaire process in the early stage. The error of the overall data sample is excluded and there might be following explanation for this:

4c "How do you evaluate the service attitude of nurses in the institution?" According to the the real situation, the possible reasons are that doctors, assistant nursing workers and family members have the most contact with the elderly with moderate and severe disability who do not always deal with nurses. Nurses spend more time on monitoring the recovery process of illness, resulting in a relative shortage of direct contact with the elderly or family members, who may not be able to distinguish between nurses and assistant nursing workers in the geriatric medical and nursing institutions.

5b "How do you evaluate the protection of privacy in the institution?" According to the analysis of the investigation records, the moderately and severely disabled elderly people generally communicate with each other during their stay in the geriatric medical and nursing institutions, and they can also know the each other’s situation by reading the information cards in the ward area and hanging by the sickbed. Therefore, during the investigation, the moderately and severely disabled elderly people or their families do not think this question should be included at all.

5i "How do you evaluate the layout of the ward area in the institution?" For this item, the explanation may be that the area was divided at the beginning of the building of the institution and can hardly be changed or adjusted in the later days. However, since the elderly have made the choice of staying in this institution, they can only adapt to the environment.

6a "How do you evaluate the treatment plan provided by the institution". During the investigation, the researchers found that most of the moderately and severely disabled elderly and their families had not acquired a copy of their medical history. They only knew part of

the treatment plan and relied more on the temporary notice from doctors and nurses. They did not have a clear understanding of the treatment plan.

9d "How much trust do you have in the mental health services of the institution?" This question was proved to be really necessary in the research process. With the increase of the occupancy rate of the elderly with moderate and severe disability into the institution and the possibility of death at any time, psychological counseling service has become more and more necessary. However, for the elderly living in the hospital, superficial psychological counseling cannot have a desired effect. Also considering the low education level of the elderly, the psychological counseling cannot be well-accepted/understood.

9g "How do you evaluate the current institution you are staying in?" For this question, we think that this item has been broken down into several sub-questions in the previous items. The respondents may doubt whether this is a repeated question.

With the analysis of researchers and the guidance of the supervisor, this thesis considers that the original Cronbach α coefficient of the project is within the acceptable range. Without deletion, the questionnaire still has high reliability, so it has not been further adjusted. It is believed that the survey results of this questionnaire have high reliability and can be used for further quantitative analysis.

4.4.3 Validity analysis

There are many methods of validity analysis. Project analysis, independent criterion validity analysis and factor analysis are often used in communication research. Among them, factor analysis is the most ideal method for validity analysis. This method can measure the validity analysis process and the percentage of valid items explaining the variation types of the whole scale. Its calculation process is a simplified process of complex variable linear model. The items in the questionnaire design in this thesis are introduced from mature scales in domestic and foreign literatures, thus ensuring the validity of the scale to a certain extent. In the formal analysis, this thesis uses the function of factor analysis to analyze the validity of the questionnaire, and adopts KMO test and Bartlett’s test of sphericity. According to the measurement rules, KMO test index is between 0 and 1. The closer the value is to 1, the

higher the reliability is. A value greater than 0.9 indicates excellent validity. A value greater than 0.8 indicates good effect. A value greater than 0.7 indicates fair effect and a value greater than 0.6 indicates that the validity of the questionnaire is just acceptable. A value less than 0.6 indicates that factor analysis is not recommended, which means that the validity of the questionnaire is not enough for further data measurement analysis.

The thesis analyzes dimension reduction factor by SPSS19.0 and applies the approach of principal component factor analysis of the maximum variance, and the validity of this questionnaire is tested by outputting the rotation iterative solution. The results are shown in Table 4-4.

From Table 4-4, it can be seen that KMO test values of environmental satisfaction, service satisfaction, administration satisfaction, medical quality satisfaction, trust perception and satisfaction evaluation are all greater than 0.8, and the significance of Bartlett's Test of Sphericity for each variable is 0.000, which is significant at the level of 0.001, indicating that the validity of each variable of the scale meets the requirements and further factor analysis can be performed.

Table 4-4 Statistical Table of Validity Analysis

Variable	KMO index	Bartlett's Test of Sphericity		Variable	KMO index	Bartlett's Spherical Inspection	
Service satisfaction	0.839	χ^2	1249.457	Trust perception	0.835	χ^2	769.785
		df	129			df	76
		Sig.	.000			Sig.	.000
Administration satisfaction	0.813	χ^2	1170.137	Satisfaction	0.842	χ^2	1179.869
		df	8			df	83
		Sig.	.000			Sig.	.000
Medical satisfaction	0.844	χ^2	1129.758				
		df	77				
		Sig.	.000				

4.5 Summary of this chapter

In this chapter, by combing the literature, the influencing factors of satisfaction

evaluation for the elderly with moderate and severe disability in Chengdu are determined. The four dimensions of medical quality satisfaction, environmental satisfaction, administration satisfaction and service satisfaction are considered, and the moderating factors of trust perception are introduced. Based on this, the theoretical model of this thesis, DES model, is formed, and the theoretical assumptions are put forward.

Based on the research model of this thesis, according to the mature questionnaire scale of other scholars, the research questionnaire for this thesis is formed, and the questionnaire is modified through pilot questionnaire. SPSS19.0 is used to analyze the reliability and validity of the questionnaire results. It is determined that the questionnaire in this thesis conforms to the standard, and it is scientific and can be used for data analysis.

Chapter 5: Empirical Analysis and Application

The researchers checked the data and coded the questionnaire before inputing the data. Each data entry is input by one researcher and supervised by another to reduce the possibility of error. The researcher applies SPSS19.0 software, based on reliability and validity test, conducted data analysis which mainly includes descriptive analysis, principal component analysis and path coefficient calculation.

5.1 Descriptive analysis of samples

In this survey, 355 elderly people with moderate or severe disability have been admitted to the geriatric nursing hospital. A total of 310 valid and complete data have been collected. Through data analysis, descriptive analysis has been carried out on the basic items. See Table 5-1 for details:

Table 5-1 Descriptive Analysis of Sample Data

Statistical variables	Content	sample number	Percentage (%)
Gender	male	147	47.3
	female	163	52.7
	Total	310	100
Age	60-64 years old	12	3.87
	65-69 years old	40	12.90
	70-74 years old	40	12.90
	75-79 years old	55	17.74
	Over 80 years old	163	52.58
	Total	310	100.00
Education	Primary school and below	164	52.90
	Junior high school	62	20.00
	High school	43	13.87
	College and undergraduate	22	7.10
	Postgraduate or above	19	6.13
	Total	310	100.00
Occupation	Workers	143	46.13
	Business	25	8.06
	Agriculture	59	19.03
	Government	37	11.94

	Other	46	14.84
	Total	310	100.00
Marital status	Married	146	47.10
	Divorced	19	6.13
	Widowed	133	42.90
	Single	12	3.87
	Total	310	100.00
Number of children	0	22	7.10
	1	159	51.29
	2	101	32.58
	3 or more	28	9.03
	Total	310	100.00
Insurance coverage	Yes	299	96.45
	No	11	3.55
	Total	310	100.00
Form of insurance	Urban medical insurance	180	58.06
	Urban employee insurance	42	13.55
	New rural cooperative medical system	59	19.03
	Commercial insurance	57	18.39
	Other types of insurance	9	2.90
	At their own expense	22	7.10
	Total	369	119.03
Medical expenses	1000 yuan and below	88	28.39
	1000-2000 yuan	116	37.42
	2000-3000 yuan	72	23.23
	3,000-4,000 yuan	33	10.65
	4000 yuan and above	1	0.32
	Total	310	100.00
Monthly income	1000 yuan and below	66	21.29
	1000-2000 yuan	57	18.39
	2000-3000 yuan	58	18.71
	3,000-4,000 yuan	94	30.32
	4000 yuan and above	35	11.29
	Total	310	100.00
Financial support from children	1000 yuan and below	122	39.35
	1000-2000 yuan	78	25.16
	2000-3000 yuan	84	27.10
	3,000-4,000 yuan	18	5.81
	4000 yuan and above	8	2.58
	Total	310	100.00
Distance from medical institutions	Within 5km	43	13.87
	6-10km	89	28.71
	11-20km	93	30.00
	21-30km	55	17.74
	More than 31 kilometers	30	9.68
	Total	310	100.00
Are you staying for	Yes	268	86.45
	no	42	13.55

a long time?	Total	310	100.00
Caregiver	Family	179	57.74
	Nursing worker	47	15.16
	Family+Nursing worker	84	27.10
	Total	310	100.00
Type of illness	Heart disease	56	18.06
	Cerebrovascular disease	89	28.71
	osteoarthropathy	24	7.74
	Epilepsy	12	3.87
	Senile dementia	66	21.29
	Cataract, eye disease	7	2.26
	Paralysis	14	4.52
	Depression	2	0.65
	Tumor	22	7.10
	Disability	18	5.81
	Total	310	100.00

As can be seen from the above table, the elderly with moderate and severe disability are mainly the elderly over 80 years old, with an average age of 77.18 years old and relatively low educational level. Most of the elderly living in the residence have various types of insurance support. At the same time, as the seven geriatric medical and nursing institutions surveyed in Chengdu are all located in urban areas, the majority of the elderly residents are urban population, and the radiation range is relatively concentrated. The majority of the elderly residents receive family care or "family+nursing workers" care, and relatively few disabled elderly people rely solely on nursing workers. In the investigation of the causes of the disability of the elderly, it is shown that most of the patients are disabled due to illness, and relatively few of the elderly are disabled due to trauma.

Specifically, 52 people aged 60-69, accounting for 16.63%; 95 people aged 70-79, accounting for 30.7%; 163 people aged 80 and above, accounting for 52.6% (see appendix 3 Figure 1). There are 147 males (47.3%) and 163 females (52.7%) (see appendix 3 Figure 2). In terms of educational level, 164 people (52.9%) have received primary school education or below, 62 people (20%) have received junior high school education, 43 people (14%) have senior high school education, 22 people (7%) have junior high school education, 19 people (6.1%) have postgraduate education or above (see appendix 3 Figure 3). In terms of marital composition, 146 married people have spouse, accounting for 47%; widowed 133, accounting for 43%; unmarried 12, accounting for 4%; There were 19 divorces, accounting for 6% (see

appendix 3 Figure 4); As for occupation before retirement, 143 were workers, accounting for 46%. There are 25 business people, accounting for 8%; 59 farmers, accounting for 19%, 37 government employees, accounting for 12%, and 46 others, accounting for 15% (see appendix 3 Figure 5).

According to the above survey data results, combined with the FIM rating of the survey objects (see appendix 3 Table 7), this thesis draws the following analysis conclusions:

(1) The health status of the elderly with moderate to severe disability is generally poor. Of the 310 elderly with moderate or severe disability, only 2 (0.65%) were disabled due to psychological diseases (see appendix 3 Figure 6). The rest of the investigated subjects had diseases among whom 73 (23.55%) had one disease, 181 (58.39%) had two diseases, and 56 (18.06%) had three or more diseases (see appendix 3 Figure 7).

In terms of specific diseases, the top five diseases are: 89 cases (28.71%) of cerebrovascular disease; 66 cases (21.29%) of senile dementia, 56 cases (18.06%) of heart disease, 24 cases (7.74%) of osteoarthropathy; 22 cases (7.01%) of tumors. The above data show the main causes of moderate to severe disability among the elderly admitted to medical institutions (see appendix 3 Figure 8).

(2) FIM scores of the elderly with moderate and severe disability showed a skewed distribution, as shown in Figure 5-1.Combined with FIM rating scale, it can be seen that the proportion of the moderately disabled elderly is relatively large and the proportion of the completely disabled elderly is relatively small in the geriatric medical and nursing institutions, regardless of the overall scores of motor function and cognitive function. Preliminary analysis shows that the reason why the completely disabled elderly takes a small proportion is because these elderly need more medical resources which is too expensive to be afforded by most families.

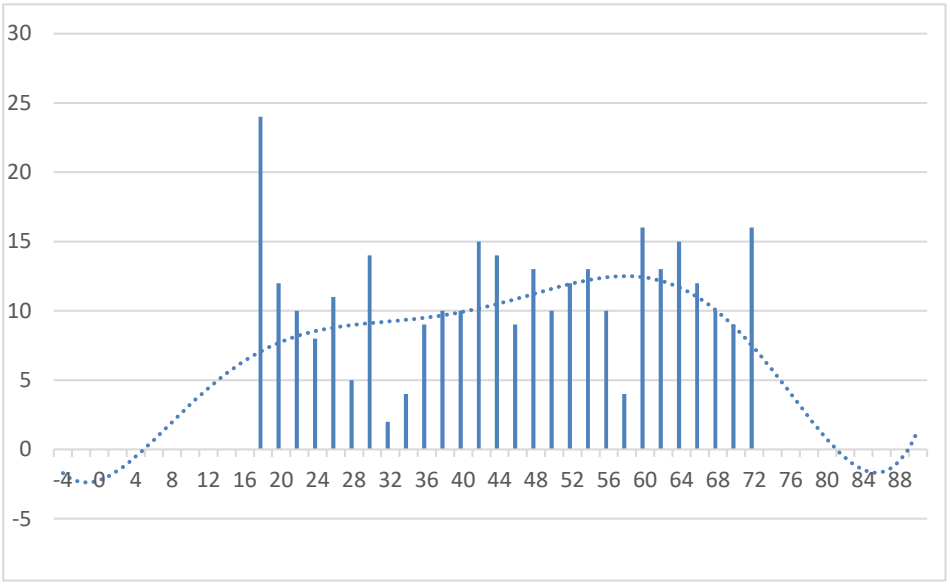

Figure 5-1 FIM value distribution curve of the elderly with moderate and severe disability

(3) Medical insurance plays an important role in the medical expenses of the elderly with moderate or severe disability. For 310 elderly people with moderate and severe disability, their monthly income, the level of medical expenses borne by their families are strongly related to whether they purchase medical insurance. Under China's graded medical system, most medical expenses can be reimbursed if they stay in nearby medical institutions, especially for the elderly with moderate and severe disability who have purchased commercial insurance. The purchase of different types of medical insurance can economically relieve the worries of the elderly, enable them to cooperate with treatment more actively, obtain help from medical resources with ease of mind, and is more conducive to physical recovery.

(4) Family care is still the main choice for the elderly with moderate or severe disability. From the emotional point of view, the elderly with moderate to severe disability prefer their families to accompany them during their stay, trust their care more and rely on their families psychologically. From an economic point of view, family care can relieve part of the burden of medical expenses and relieve the family's financial pressure. In the families with fewer children or family members, the approach of "family care+nursing workers" is adopted more frequently, and the assistant nursing workers provide care during the period when the family members are not around. Relatively few elderly people with moderate or severe disability choose to rely entirely on nursing workers. From the perspective of questionnaire analysis,

mainly from the economic perspective, the reasons will continue to be analyzed and studied in the following analysis.

In the process of investigation, the moderately and severely disabled elderly admitted to Chengdu's geriatric medical and nursing institutions are most satisfactory with food, daily visits by medical staff, and timely resolution of medical and nursing problems. The most unsatisfactory aspect mainly lies in the insufficient tendance, especially lack of conversation partner, entertainment and spiritual comfort.

5.1.1 Descriptive analysis of independent variables in satisfaction evaluation of elderly with moderate and severe disability in Chengdu

This chapter makes descriptive analysis on independent variables of satisfaction evaluation for the elderly with moderate and severe disability in Chengdu, mainly including sample maximum value, minimum value, average value, median value and standard deviation (see appendix 3 Table 8)

In the appendix 3 Table 8, the two indicators of average and median show that the satisfaction evaluation of the elderly with moderate and severe disability admitted to the geriatric medical and nursing institutions are relatively are above the medium level, indicating that the average elderly with moderate and severe disability in these institutions are relatively satisfactory.

Judging from the standard deviation, the standard deviation of each question is basically distributed between 0 and 2. Combined with specific questions, it can be found that the questions with small fluctuation show that the investigated objects are generally concerned with these issues, and the questions with big fluctuation show that the evaluated objects are subjective and it needs further analysis.

5.1.2 Descriptive analysis of moderator variables of satisfaction evaluation of moderate and severe disability elderly in Chengdu

This chapter makes descriptive analysis on the moderator variables of satisfaction evaluation for the elderly with moderate and severe disability in Chengdu, mainly including

sample maximum value, minimum value, average value, median value and standard deviation (see appendix 3 Table 9).

In the appendix 3 Table 9, from the average and median two indicators, we can see that the trust perception as a moderator variable is at a relatively high level in the satisfaction evaluation of the moderately and severely disabled elderly in the geriatric medical and nursing institutions. According to the analysis of the records in the investigation process, the moderately and severely disabled elderly have a strong sense of trust and dependence in the medical institutions in which they have been staying for a long time.

Judging from the standard deviation index, the standard deviation of each question is basically distributed between 0 and 1.6. Combined with specific questions, we can find that the trust perception factor is a factor widely concerned by the elderly with moderate and severe disability, which has a strong influence on the satisfaction evaluation of the institution, but the influence of this variable on the independent variable has not been presented which will be further studied in the later research.

5.1.3 Descriptive analysis of dependent variables for satisfaction evaluation of elderly with moderate and severe disability in Chengdu

This chapter makes a descriptive analysis on the dependent variables of satisfaction evaluation for the elderly with moderate and severe disability in Chengdu, mainly including sample maximum value, minimum value, average value, median value and standard deviation (see appendix 3 Table 10).

In the appendix 3 Table 10, from the average and median two indicators, we can see that the satisfaction evaluation of the elderly with moderate and severe disability admitted to the geriatric medical and nursing institutions is generally above the average level, but from the standard deviation index, the standard deviation of each item is basically distributed between 1 and 2, indicating that this part of the index fluctuates greatly and it is necessary to further analyze it as a dependent variable.

5.2 Empirical analysis on the relationship between relevant conditions of medical institutions and consumer satisfaction

5.2.1 Principal component analysis

(1) Independent variable factor analysis

In the questionnaire, the independent variable has 34 items. Through validity test, the KMO test value of the independent variable is greater than 0.8 and it also has passed Bartlett sphericity test and can be used for factor analysis. In the factor analysis of the independent variable, the principal component analysis approach is used to determine the number of principal components of the independent variable. Through factor load analysis, the subordinate relationship between the principal components and the factors is determined.

See Table 5-2 for the results of principal components from factor extraction:

Table 5-2 Statistical Table of Total Variance Results Explained by Independent Factor

	Initial eigenvalue				Initial eigenvalue		
Serial number	Total	Perce-ntage	Cumulative percentage	Serial number	Total	Percent-age	Cumulative percentage
1	10.389	28.078	28.078	20	0.098	0.265	97.137
2	8.774	23.714	51.792	21	0.094	0.254	97.391
3	7.551	20.408	72.2	22	0.09	0.243	97.634
4	6.353	17.17	89.37	23	0.079	0.214	97.848
5	0.339	0.916	90.286	24	0.074	0.213	98.061
6	0.305	0.904	91.19	25	0.072	0.211	98.272
7	0.289	0.781	91.971	26	0.068	0.209	98.481
8	0.259	0.704	92.675	27	0.068	0.205	98.686
9	0.231	0.624	93.299	28	0.065	0.203	98.889
10	0.195	0.527	93.826	29	0.063	0.2	99.089
11	0.174	0.501	94.327	30	0.059	0.197	99.286
12	0.167	0.421	94.748	31	0.057	0.192	99.478
13	0.13	0.354	95.102	32	0.56	0.19	99.668
14	0.116	0.31	95.412	33	0.055	0.189	99.857
15	0.111	0.3	95.712	34	0.053	0.143	100
16	0.111	0.3	96.012				
17	0.109	0.295	96.307				
18	0.107	0.289	96.596				
19	0.102	0.276	96.872				

According to the principal component analysis in the table above, it can be seen that the characteristic root of the first four principal components is greater than 1, and the total

cumulative interpretation variance reaches 89.370%, which indicates that four principal components can be extracted from the independent variables. In addition, the maximum variance approach is applied to calculate the load value of each factor of the independent variables by orthogonal rotation and to clarify the subordinate relationship between the principal components and each factor. The results are shown in Table 5-3.

Table 5-3 Independent Variable Factor Rotation Load Matrix

Independent variable	Factor	Ingredients				Independent variable	Factor	Ingredients			
		1	2	3	4			1	2	3	4
ES1	1b	.881	.066	.069	.060	MS1	5j	.083	.047	.841	.264
ES2	1d	.872	.129	.276	.081	MS2	5e	.039	.134	.819	.104
ES3	1a	.840	.333	.070	.093	MS3	5f	.102	.089	.810	.033
ES4	2a	.837	.316	.136	.220	MS4	5h	.074	.020	.809	.317
ES5	2g	.831	.361	.124	.198	MS5	5d	.121	.238	.803	.330
ES6	2e	.828	.253	.096	.052	MS6	5g	.205	.303	.803	.254
ES7	2d	.805	.249	.005	.071	MS7	5a	.179	.013	.798	.177
ES8	3b	.799	.117	.017	.127	MS8	5c	.125	.145	.785	.308
ES9	1c	.794	.252	.106	.298	MS9	5b	.250	.052	.783	.284
ES10	2b	.785	.352	.393	.062	MS10	5i	.060	.166	.783	.049
ES11	2f	.784	.324	.088	.286	HS1	6c	.328	.197	.279	.862
ES12	3a	.762	.254	.011	.100	HS2	6b	.274	.183	.102	.824
ES13	2c	.731	.172	.158	.204	HS3	6g	.152	.228	.328	.816
SS1	4b	.235	.837	.358	.050	HS4	6d	.291	.246	.210	.813
SS2	4c	.323	.809	.157	.062	HS5	6e	.222	.186	.243	.801
SS3	4d	.059	.760	.367	.124	HS6	6a	.127	.172	.017	.795
SS4	4a	.171	.745	.154	.081	HS7	6f	.274	.308	.301	.785
ES1	1b	.881	.066	.069	.060	MS1	5j	.083	.047	.841	.264
ES2	1d	.872	.129	.276	.081	MS2	5e	.039	.134	.819	.104
ES3	1a	.840	.333	.070	.093	MS3	5f	.102	.089	.810	.033

As can be seen from Table 5-3, among the independent variable factors, factors such as infrastructure, functional area layout, and traffic convenience are subordinate to environmental satisfaction and are represented by code ES. Factors such as medical technology, medical care level, medical treatment effect, and healthcare effect are subordinate to medical satisfaction and are indicated by code HS. Doctors' service attitude, nurses' service attitude, nursing workers' service attitude and administration’s service attitude are subordinate to service satisfaction, which is indicated by code SS. Factors such as the convenience of payment and reimbursement, the convenience of admission and discharge, and assistance in medical insurance reimbursement are subordinate to administration

satisfaction and are indicated by code MS.

(2) Factor analysis of moderator variables

In the questionnaire designed in this thesis, there are 7 items of moderator variables. Through validity test, the independent variable KMO test value is greater than 0.8, and through Bartlett sphericity test, it can be used for factor analysis. In the factor analysis of moderator variables, the principal component analysis method is used to determine the number of principal components of moderator variables. Through factor load analysis, the subordinate relationship between principal components and factors is determined.The results of principal components of factor extraction (see appendix 3 Table 11).

Through the principal component analysis in the appendix 3 Table 11, it can be seen that there is one factor whose principal component characteristic root is greater than 1, and the cumulative interpretation variance reaches 75.300%, which indicates that one principal component can be extracted from the adjustment variables. Further, the maximum variance method and orthogonal rotation are used to calculate the load value of each factor of the moderator variables, and the subordinate relationship between the principal component and each factor is defined. The results are shown in Table 5-4.

Table 5-4 Rotating Load Matrix for Adjusting Variable Factors

Moderator variables	Factor	Ingredients
TP1	9f	**.891**
TP2	9b	**.845**
TP3	9a	**.812**
TP4	9d	**.801**
TP5	9c	**.795**
TP6	9g	**.795**
TP7	9e	**.785**

As can be seen from Table 5-4, among the moderator variable factors, each factor is subordinated to trust perception and is represented by code TP.This is consistent with the analysis of influencing factors of satisfaction evaluation of geriatric medical and nursing

institutions by moderatedly and severely disabled elderly in the previous thesis, and is basically consistent with the theoretical model preset in this thesis.

(3) Factor analysis of dependent variables

In the questionnaire designed in this thesis, the dependent variable has a total of 4 items. Through validity test, the independent variable KMO test value is greater than 0.8, and through Bartlett sphericity test, it can be used for factor analysis. In this thesis, the principal component analysis method is used to determine the number of principal components of the dependent variable. Through factor load analysis, the subordinate relationship between the principal components and the factors is determined. The results of principal components from factor extraction (see appendix 3 Table 12).

Through the principal component analysis method in the appendix 3 Table 12, it can be seen that there is one factor whose principal component characteristic root is greater than 1, and the cumulative interpretation variance reaches 77.820%, indicating that one principal component can be extracted from the dependent variable. Further, the maximum variance method and orthogonal rotation are used to calculate the load value of each factor of the dependent variable, and the subordinate relationship between the principal component and each factor is clarified. The results are shown in Table 5-5.

Table 5-5 Rotational Load Matrix of Dependent Variable Factors

Dependent variable	Factor	Ingredients
SE1	10a	**.901**
SE2	10c	**.852**
SE3	10b	**.817**
SE4	10d	**.751**

As can be seen from Table 5-5, among the dependent variable factors, each factor is attributed to the satisfaction evaluation factor, which is represented by code SE.This is consistent with the analysis of influencing factors of satisfaction evaluation of geriatric medical and nursing institutions by moderately and severely disabled elderly in the previous thesis, and is basically consistent with the theoretical model preset in this thesis.

Through the above principal component analysis data of independent variables, moderator variables and dependent variables, it can be seen that the independent variables in this thesis are mainly consists of environmental satisfaction evaluation factors, medical satisfaction evaluation factors, service satisfaction evaluation factors and administration satisfaction evaluation factors. The main influencing factors of moderator variables mainly are trust perception. The dependent variable is the satisfaction evaluation of the elderly with moderate and severe disability on the geriatric medical and nursing institutions.

From the above-mentioned rotating load matrix table of each factor, it can be seen that each factor of the questionnaire is effectively attributed, which lays a foundation for the next data analysis and further provides data support for the "DES" model proposed in this thesis.

5.2.2 Correlation analysis

According to the previous data analysis, the accuracy of the model is preliminarily verified, but the correlation between the each principal component cannot be accurately analyzed. Therefore, this chapter aims to further test the path hypothesis of DES model by analyzing the correlation between the principal components. According to the model hypothesis, there is bidirectional correlation both between independent variables and moderator variables as well as between moderator variables and dependent variables. Therefore, in this thesis, Pearson correlation analysis is applied to verify and analyze the correlation between variables. The bigger the absolute value of Pearson correlation coefficient is, the stronger the correlation is. The closer the correlation coefficient is to 1 or -1, the stronger the correlation is. The closer the correlation coefficient is to 0, the weaker the correlation is. Usually, the correlation strength of variables is judged by the following absolute value ranges: the correlation is extremely strong when the coefficient is 0.8 and 1.0; correlation is strong when the coefficient is 0.6-0.8; correlation is moderate when the coefficient is 0.4-0.6; correlation is weak when the coefficient is 0.2-0.4; correlation is weak when the coefficient is 0.0-0.2.

(1) Correlation Analysis of Independent and Moderator Variables

The Pearson correlation analysis of independent variables and moderator variables in

this thesis is shown in Table 5-6.

Table 5-6 Correlation Analysis of Independent and Moderator Variables

Independent variables	Correlation	Intermediate variable Trust perception
Environmental satisfaction	Pearson coefficient	.621***
	P value	.000
	Sample size	310
Medical quality satisfaction	Pearson coefficient	.785***
	P value	.000
	Sample size	310
Service satisfaction	Pearson coefficient	.826***
	P value	.000
	Sample size	310
Administration satisfaction	Pearson coefficient	.693***
	P value	.000
	Sample size	310

Note: * * * Indicates significant at 0.001 level.

In this thesis, Pearson correlation between 4 principal components of independent variables and 1 principal component of moderator variable is verified based on the results of principal component analysis mentioned above. Through the data calculation results in Table 5-6, it can be seen that Pearson correlation coefficient between environmental satisfaction and trust perception is 0.621, which is significant at the level of 0.001, indicating strong correlation between environmental satisfaction and trust perception. Pearson correlation coefficient between medical quality satisfaction and trust perception is 0.785, which is significant at the level of 0.001, indicating that medical quality satisfaction and trust perception have strong correlation. Pearson correlation coefficient between service satisfaction and trust perception is 0.826, which is significant at the level of 0.001, indicating that service satisfaction and trust perception are highly correlated. Pearson correlation coefficient between administration satisfaction and trust perception is 0.693, which is significant at the level of 0.001, indicating a strong correlation between environment satisfaction and trust perception.

According to the calculation results, Pearson correlation coefficients are all positive, so it can be judged that there is bidirectional positive correlation between the four independent variables and the moderator variables. Some hypothesis of the model are confirmed (see appendix 3 Table 13).

Through the confirmation of the hypothesis above, it can be explained that the trust perception of the moderately and severely disabled elderly in the geriatric medical and nursing institutions can positively affect their satisfaction evaluation on the environment, medical treatment, service and administration of the medical institutions, while the evaluation of the satisfaction of the moderately and severely disabled elderly to the environment, medical treatment, service and administration of the institutions also positively affect their trust perception to the institutions.

(2) Correlation Analysis of Moderator Variables and Dependent Variables

The Pearson correlation analysis of independent variables and moderator variables in this thesis is shown in Table 5-7.

In this thesis, Pearson correlation between one principal component of the moderator variable and one principal component of the dependent variable is verified through the results of principal component analysis mentioned above. According to the data calculation results in Table 5-7, Pearson correlation coefficient between trust perception and satisfaction evaluation is 0.857, which is significant at the level of 0.001, indicating that trust perception and satisfaction evaluation have strong correlation.

Table 5-7 Correlation Analysis of Moderator Variables and Dependent Variables

Moderator variable	Correlation	Dependent variable Satisfaction evaluation
Trust perception	Pearson coefficient	.857
	P value	.000
	Sample size	310

According to the calculation results, Pearson correlation coefficients are all positive, so it can be judged that there is a bidirectional positive correlation between the moderator variable and the dependent variable. Some hypothesis of the model are confirmed (see appendix 3 Table 14).

Through the confirmation of the hypothesis above, it can be explained that the trust perception of the moderately and severely disabled elderly to the geriatric medical and nursing institutions can positively affect their overall satisfaction evaluation to the medical institutions, while the evaluation of the overall satisfaction of the moderately and severely

disabled elderly with the institution also positively affects their trust perception of this institution.

(3) Correlation Analysis of Independent and Dependent Variables

The Pearson correlation analysis between independent variables and dependent variables is shown in Table 5-8.

Table 5-8 Correlation Analysis of Independent and Dependent Variables

Independent variable	Correlation	Dependent variable Satisfaction evaluation
Environmental satisfaction	Pearson coefficient	.658***
	P value	.000
	Sample size	310
Medical treatment satisfaction	Pearson coefficient	.685***
	P value	.000
	Sample size	310
Service satisfaction	Pearson coefficient	.776***
	P value	.000
	Sample size	310
Administration satisfaction	Pearson coefficient	.612***
	P value	.000
	Sample size	310

Note: * * * Indicates significant at 0.001 level.

In this thesis, Pearson correlation between 4 principal components of independent variables and 1 principal component of dependent variables is tested through the results of principal component analysis mentioned above. Through the data calculation results in Table 5-8, it can be seen that Pearson correlation coefficient between environmental satisfaction and overall satisfaction evaluation is 0.658, which is significant at the level of 0.001, indicating that environmental satisfaction has strong correlation with overall satisfaction evaluation of geriatric medical and nursing institutions by the moderately and severely disabled elderly in Chengdu. Pearson correlation coefficient between medical quality satisfaction and overall satisfaction evaluation is 0.685, which is significant at the level of 0.001, indicating that medical quality satisfaction has a strong correlation with overall satisfaction evaluation of geriatric medical and nursing institutions for the moderately and severely disabled elderly in Chengdu. Pearson correlation coefficient between service satisfaction and overall satisfaction evaluation is 0.776, which is significant at the level of 0.001, indicating that service

satisfaction has a strong correlation with overall satisfaction evaluation of geriatric medical and nursing institutions by the elderly with moderate and severe disability in Chengdu. Pearson correlation coefficient between administration satisfaction and overall satisfaction evaluation is 0.612, which is significant at the level of 0.001, indicating that administration satisfaction has a strong correlation with overall satisfaction evaluation of geriatric medical and nursing institutions for the moderately and severely disabled elderly in Chengdu.

According to the calculation results, Pearson correlation coefficients are all positive, so it can be judged that there is bidirectional positive correlation between the four independent variables and dependent variables. Some hypothesis of the model are confirmed (see appendix 3 Table 15).

Through the confirmation of the hypothesis, it can be explained that the satisfaction evaluation of the elderly with moderate and severe disability on the environment, medical quality, service and administration of the geriatric medical and nursing institutions positively affects their satisfaction evaluation on the institutions.

By the data analysis results of Table 5-6 and Table 5-8, it can be found that the trust perception as a moderating variable has a relatively obvious effect between the independent variable and the dependent variable. Taking service satisfaction as an example: The direct positive effect of service satisfaction and dependent variable is 0.776, and after adjustment of trust perception, the effect coefficient becomes 0.826, the adjustment effect is obvious.

5.3 Empirical analysis on impact mechanism of consumer satisfaction

Pearson correlation analysis is mainly used to analyze the correlation between the two factors, but the relationship between secondary indicators and dependent variables and moderator variables cannot be directly verified by Pearson correlation analysis, and the remaining hypothesis in this thesis have not been tested. Therefore, this thesis, by using SPSS19.0 and combining with this thesis preset model, carries on the path analysis to verify the correlation between the secondary indicators and the moderator variables and the dependent variables.

Before the path analysis, the fitting effect of the basic data of the questionnaire should be tested first. The better the fitting effect of the data, the more reliable the path analysis result, otherwise, it is invalid. According to the literature review, there are four main indicators to analyze the data fitting effect:

(1) Chi-square test. Chi-square index is the most basic test index for model fitting. Because chi-square size is easily affected by sample size, this thesis uses chi-square test value of sample frequency series contingency table as test index, calculates the degree of freedom of questionnaire first $d(f)$, then calculates sample statistics x^2, and finally determines the acceptance domain according to the x^2 distribution critical value table. The calculation formula is:

$$\mathbf{d}(\boldsymbol{f}) = (\boldsymbol{r}-\mathbf{1})(\boldsymbol{c}-\mathbf{1}) \tag{5.1}$$

$$\mathbf{x^2} = \sum_{\boldsymbol{i}=\mathbf{1}}^{\boldsymbol{r}} \sum_{\boldsymbol{j}=\mathbf{1}}^{\boldsymbol{c}} \frac{\left(\boldsymbol{f_{ij}} - \boldsymbol{e_{ij}}\right)^{\mathbf{2}}}{\boldsymbol{e_{ij}}} \tag{5.2}$$

$$\boldsymbol{e_{ij}} = \boldsymbol{F_{Yi}} * \boldsymbol{F_{XJ}}/\boldsymbol{n} \tag{5.3}$$

Where r and c represent the number of rows and columns in the data table, and x^2 represents chi-square test value, n is the sample capacity, e_{ij} is the sample statistic, and f_{ij} is the original value of the sample. The smaller the P value is, the higher the fitting degree of the model is. Generally speaking, the result is considered to be optimal if significant at the level of 0.01, good if significant at the level of 0.01-0.05, acceptable if significant at the level of 0.05-0.1, and unacceptable above the level of 0.1 which means poor fitting degree is not suitable for data analysis.

(2) Goodness of Fit Index (GFI). This approach measures the overall relationship between independent variables and dependent variables, and test the fitting degree of the model to the observed values of samples, similar to R2 in regression. The range of values is between 0 and 1. Values greater than 0.9 are ideal values, and values greater than 0.5 are also acceptable.

(3) Adjusted goodness-of-fit index (AGFI). The index refers to the goodness-of-fit of the

model to the observed values of the sample under the condition of multiple explanatory variables. In order to explain the goodness-of-fit of the model, the explanatory variables need to be adjusted to deal with the influence of the increase of variable elements on the goodness-of-fit. The closer its value is to 1, the better the model fits. The ideal value is greater than 0.9, and it is acceptable if it is greater than 0.5.

(4) The Root Mean Square Error of Approximation (RMSEA).This indicator represents the error between the measured value and the real situation. It is most sensitive to the extremely large and small errors in the measured data. Therefore, this indicator can accurately reflect the correlation degree between the survey results and the real situation. It is very sensitive to the fitting degree of the data. The lower the value is, the higher the fitting degree of the data is. Less than 0.05 indicates a relatively high fitting degree of the theoretical model, 0.05-0.08 means a good fitting degree, the acceptable fitting degree is 0.08-0.1, and the bad fitting degree is higher than 0.1, which means the data need to be adjusted.

In the test of fitting effect of structural equation model, scholars generally use one or more indexes to evaluate comprehensively. Therefore, the above four test methods are selected for fitting effect test (see appendix 3 Table 16).

According to the analysis results shown in appendix 3 Table 16, the chi-square test result of the questionnaire model is 32.517. This thesis involves 6 variables and 5 evaluations, so the chi-square test degree is 20. According to the chi-square critical value table, under the condition of 20 degrees of freedom, $x^2_{0.05} = 31.410$, $x^2_{0.03} = 34.170$. The chi-square test value of the questionnaire in this thesis is within this range, showing that it is significant at the level of 0.05, so the chi-square test passes.

Regarding GFI and AGFI, GFI=0.928 and AGFI=0.907, which are both greater than the standard value of 0.9 and RMSEA=0.041<0.05, so they are both within the acceptable range, indicating that the goodness of fit of the model is high and further data research and analysis can be conducted.

According to the above results, the survey data are imported into AMOS16.0 for path analysis. The analysis results are shown in Figure 5-2.

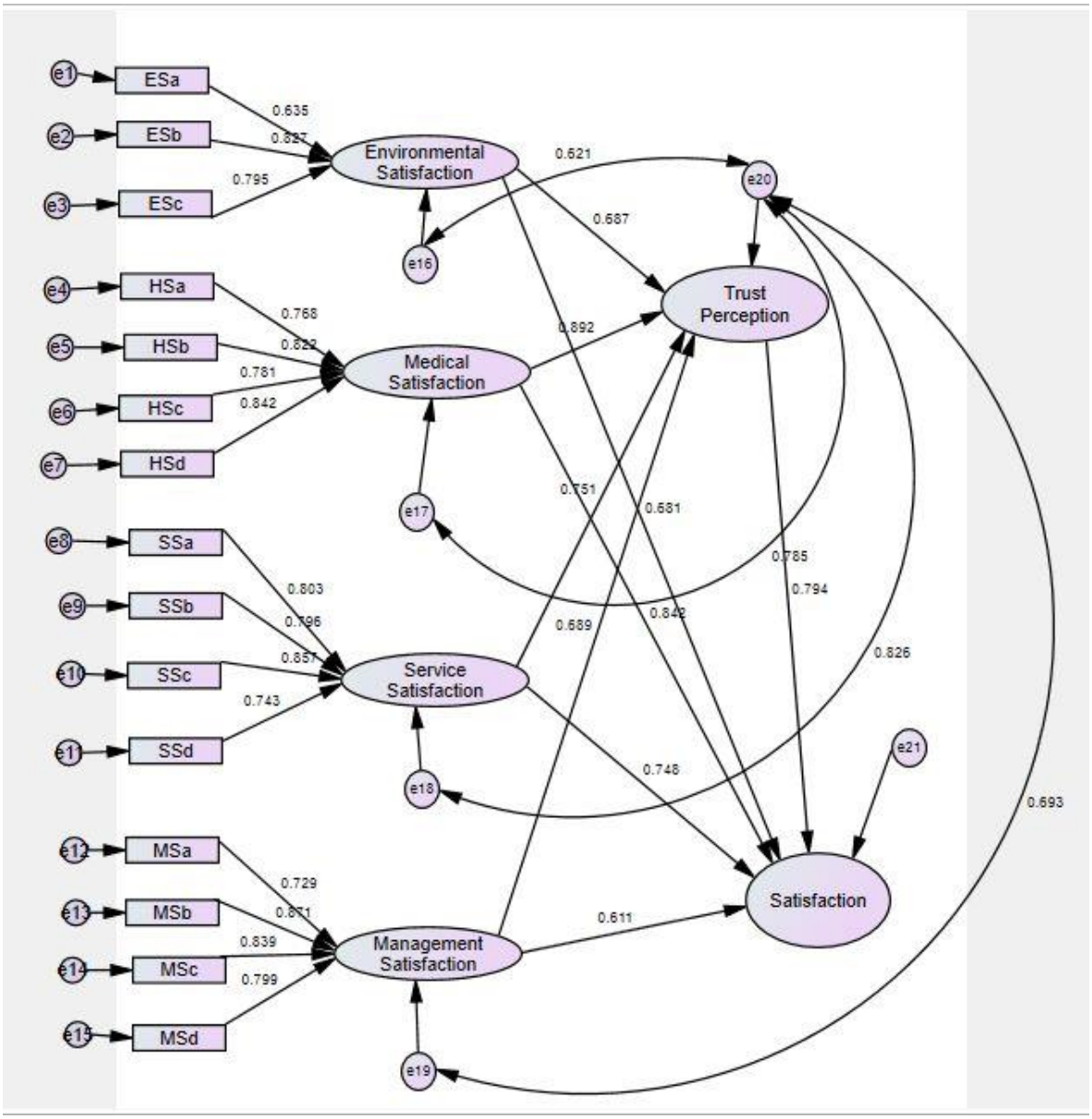

Figure 5-2 Path Coefficient Diagram of Each Variable

According to the figure above, the path coefficient between each variable is analyzed, as is shown in Table 5-9.

Table 5-9 Path Coefficient of Each Variable

Code	Explained variable	Explanatory variable	P	Path coefficient
ESa	Infrastructure construction	Environmental satisfaction	.012	0.635*
ESb	Functional layout	Environmental satisfaction	.000	0.827***
ESc	Transportation convenience	Environmental satisfaction	.009	0.795**
HSa	Medical technology	Medical quality satisfaction	.000	0.768***

HSb	Quality of nursing and tendance	Medical quality satisfaction	.000	0.822***
HSc	Medical treatment and caring effect	Medical quality satisfaction	.000	0.781***
HSd	Health care effect	Medical quality satisfaction	.017	0.842*
SSa	Doctor's service Attitude	Service satisfaction	.000	0.803***
SSb	Nurse service attitude	Service satisfaction	.000	0.796***
SSc	Service Attitude of Nursing Workers	Service satisfaction	.000	0.857***
SSd	Service attitude of managers	Service satisfaction	.000	0.743***
MSa	Convenience of Payment	Administration satisfaction	.004	0.729**
MSb	Convenience of admission and discharge	Administration satisfaction	.000	0.871***
MSc	Insurance reimbursement assistance	Administration satisfaction	.000	0.839***
MSd	Value-added services	Administration satisfaction	.000	0.799***

Note: * means significant at 0.05 level, * * means significant at 0.01 level, * * * means significant at 0.001 level.

From Table 5-9, it can be seen that the path coefficient of infrastructure to environmental satisfaction is 0.635, which is significant at the level of 0.05, showing a positive impact. Therefore, it can be shown that infrastructure in geriatric medical and nursing institutions has a positive correlation with satisfaction evaluation of the moderately and severely disabled elderly. The path coefficient of functional layout to environmental satisfaction is 0.827, which is significant at the level of 0.001, showing a positive impact. Therefore, it can be explained that functional layout in geriatric medical and nursing institutions has a positive correlation to the satisfaction evaluation of the elderly with moderate and severe disability. The path coefficient of transportation convenience to environmental satisfaction is 0.795, which is significant at the level of 0.01, showing a positive impact. Therefore, it can be explained that transportation convenience in geriatric medical and nursing institutions has a positive correlation to the satisfaction evaluation of the elderly with moderate and severe disability.

The path coefficient of medical technology to medical satisfaction is 0.768, which is significant at the level of 0.001, showing a positive impact. Therefore, it can be explained that medical technology in geriatric medical and nursing institutions has a positive correlation to the satisfaction evaluation of the elderly with moderate and severe disability. The path coefficient of quality of nursing and tendance to medical satisfaction is 0.822, which is significant at the level of 0.001, showing a positive impact. Therefore, it can be explained that the quality of nursing and tendance in the geriatric medical and nursing institutions has a positive correlation to the satisfaction evaluation of the elderly with moderate and severe disability. The path coefficient of medical treatment and caring effect to medical satisfaction is 0.781, which is significant at the level of 0.001, showing a positive impact. Therefore, it can be explained that the medical treatment and caring effect in the geriatric medical and nursing institutions has a positive correlation to the satisfaction evaluation of the moderately and severely disabled elderly. The path coefficient of health care effect to medical satisfaction is 0.842, which is significant at the level of 0.05, showing a positive impact. Therefore, it can be explained that the health care effect in the geriatric medical and nursing institutions has a positive correlation to the satisfaction evaluation of the elderly with moderate and severe disability.

The path coefficient of doctor's service attitude to service satisfaction is 0.803, which is significant at the level of 0.001, showing a positive impact. Therefore, it can be explained that the doctor's service attitude in geriatric medical and nursing institutions has a positive correlation to the satisfaction evaluation of the moderately and severely disabled elderly. The path coefficient of nurse's service attitude to service satisfaction is 0.796, which is significant at the level of 0.001, showing a positive impact. Therefore, it can be explained that nurse's service attitude in geriatric medical and nursing institutions has a positive correlation to the satisfaction evaluation of the moderately and severely disabled elderly. The path coefficient of nursing workers' service attitude to service satisfaction is 0.857, which is significant at the level of 0.001, showing a positive impact. Therefore, it can be explained that the nursing workers' service attitude in the geriatric medical and nursing institutions has a positive correlation to the satisfaction evaluation of the moderately and severely disabled

elderly. The path coefficient of service attitude of managers to service satisfaction is 0.743, which is significant at the level of 0.001, showing a positive impact. Therefore, it can be explained that the service attitude of managers in geriatric medical and nursing institutions has a positive correlation to the satisfaction evaluation of the moderately and severely disabled elderly.

The path coefficient of the convenience of payment to administration satisfaction is 0.743, which is significant at the level of 0.01, showing a positive impact. Therefore, it can be explained that the convenience of payment in geriatric medical and nursing institutions has a positive correlation to the satisfaction evaluation of the moderately and severely disabled elderly. The path coefficient of convenience of admission and discharge procedures to administration satisfaction is 0.871, which is significant at the level of 0.001, showing a positive impact. Therefore, it can be explained that convenience of admission and discharge procedures in geriatric medical and nursing institutions has a positive correlation to satisfaction evaluation of the moderately and severely disabled elderly. The path coefficient of insurance reimbursement assistance to administration satisfaction is 0.839, which is significant at the level of 0.001, showing a positive impact. Therefore, it can be explained that the insurance reimbursement assistance in geriatric medical and nursing institutions has a positive correlation to the satisfaction evaluation of the moderately and severely disabled elderly. The path coefficient of value-added services to administration satisfaction is 0.799, which is significant at the level of 0.001, showing a positive impact. Therefore, it can be explained that value-added services in geriatric medical and nursing institutions have a positive correlation to the satisfaction evaluation of the moderately and severely disabled elderly.

Therefore, the remaining hypothesis in this thesis are confirmed and summarized as is shown in Table 5-10.

Based on previous data analysis, this chapter has completed the path analysis of DES and tested the hypothesis, which, to some extent, is of practical significance and will provide guidance to geriatric nursing institutions for reforms.

Table 5-10 Assumption Verification Summary of Secondary Independent Variables and Principal Component Independent Variables

Code	Content	Verification results
H1a	The infrastructure construction of geriatric medical and nursing institutions is positively related to the satisfaction evaluation by the elderly with moderate and severe disability.	Set up
H1b	Functional area layout of geriatric medical and nursing institutions is positively correlated to satisfaction evaluation by the elderly with moderate and severe disability.	Set up
H1c	There is a positive correlation between the transportation convenience of geriatric medical and nursing institutions and the satisfaction evaluation by the elderly with moderate and severe disability.	Set up
H2a	There is a positive correlation between the geriatric medical and nursing technology and satisfaction evaluation of the elderly with moderate and severe disability.	Set up
H2b	The quality of nursing and tendance in geriatric medical and nursing institutions is positively related to the satisfaction evaluation by the elderly with moderate and severe disability.	Set up
H2c	The medical treatment and caring effect of geriatric medical and nursing institutions is positively related to the satisfaction evaluation by the elderly with moderate and severe disability.	Set up
H2d	Health care effect of geriatric medical and nursing institutions is positively correlated to the satisfaction evaluation by the elderly with moderate and severe disability.	Set up
H3a	The service attitude of doctors in geriatric medical and nursing institutions is positively related to the satisfaction evaluation by the elderly with moderate and severe disability.	Set up
H3b	Nurses' service attitude in geriatric medical and nursing institutions is positively correlated to satisfaction evaluation by the elderly with moderate and severe disability.	Set up
H3c	The service attitude of assistant nursing workers in geriatric medical and nursing institutions is positively related to the satisfaction evaluation of the moderately and severely disabled elderly.	Set up
H3d	The service attitude of medical institution managers is positively related to the satisfaction evaluation of the moderately and severely disabled elderly.	Set up
H4a	There is a positive correlation between the payment process of geriatric medical and nursing care and satisfaction evaluation of the elderly with moderate to severe disability.	Set up
H4b	The convenience of admission and discharge procedures in geriatric medical and nursing institutions is positively related to the satisfaction evaluation of the elderly with moderate to severe disability.	Set up
H4c	Insurance reimbursement assistance in geriatric medical and nursing institutions is positively related to satisfaction evaluation of the moderately and severely disabled elderly.	Set up
H4d	Value-added service measures in geriatric medical and nursing institutions are positively related to satisfaction evaluation by the moderately and severely disabled elderly.	Set up

5.4 Application of empirical results

In order to cope with the aging of the population, a series of related policies have been issued one after another. The geriatric medical and nursing industry have achieved great development on the supply side. What worries people is that the development of medical institutions for the elderly ignores the deep needs of the elderly, and more is to improve their perception of environmental comfort. Based on this, according to the actual operation status of geriatric nursing institutions in Chengdu and the analysis of investigation and research results on influencing factors of satisfaction evaluation of the severely disabled elderly in Chengdu, effort should be made to provide valuable and meaningful service. Therefore, this thesis, based on the above analysis, makes the following explanation on the application of the conclusion:

(1) During the 13th Five-Year Plan, China plans to invest 500 billion yuan in the geriatric nursing industry, guide the development and improvement of the industry, and set up an industry development fund of about 50 billion yuan to support the development of the medical and nursing combined industry and encourage capital from all sides to enter the this market (China News Network, 2016). The conclusion of this thesis can be used as the basis for the geriatric medical and nursing institutions to identify profit points and improve the construction of the geriatric medical and nursing service system.

(2) According to the estimation of the incidence rate of moderately and severely disabled elderly in China, the estimated number of moderately and severely disabled elderly in Chengdu in 2018 is about 45,000. As a geriatric nursing institution targeting at the elderly with moderate to severe disability and multiple diseases, it is necessary to make clear the customer orientation. From the construction of the main body of the system, to the formulation of various procedures, service content and quality control, to assessment and administration, it is essential to provide diversified services and offer better service experience.

(3) As an geriatric nursing hospital that is clearly positioned to provide services for the moderately and severely disabled elderly, the profit model should be determined first. With

the rapid growth of China's elderly population and the improvement of people's living standards, service must be the core competitiveness among the geriatric nursing institutions for the moderately and severely disabled elderly in the future, and targeted service will be the key to the core competitiveness. In the future, the services of geriatric nursing institutions will become the main body of industrial services for the moderately and severely disabled elderly, and will face the situations of diversified investment, diversified services, socialization of service objects and specialization of service teams. Therefore, the future administration system of geriatric nursing hospitals needs to focus on precise services, strive to allocate resources for customized services, personalized services and other aspects, strengthen the awareness of administration services, strengthen the supervision and assessment of service quality, give full play to the function of "care" and obtain market competitive advantages.

In Chengdu's elderly geriatric nursing institutions, in view of the current demand situation of the moderately and severely disabled elderly, exploration and development should be focused on the following three aspects:

(1) According to the results of this survey and taking the actual situation in Chengdu into consideration, although the comprehensive coverage of the current medical insurance system, whether it is the new rural cooperative medical insurance or the urban medical insurance, has covered some of the medical expenses of the disabled elderly to a certain extent, under the current medical insurance system, the problem of expenses incurred by the disabled elderly due to long-term care cannot be solved because the disabled elderly need long-term care and occupy much medical resources. In 2016, Chengdu geriatric medical and nursing quality control center was established, which strengthened the service supervision of geriatric medical and nursing institutions and formulated "Chengdu geriatric nursing hospital quality standard" to further standardize the behavior of geriatric medical and nursing institutions and improve the administration and service level.

It is necessary to carry out the "policy research on the construction of Chengdu's geriatric nursing and long-term care system", and establish and improve Chengdu's geriatric nursing and long-term care system. A government-guided and social capital-involved

geriatric nursing industry should be promoted to vigorously develop diversified and multi-level geriatric medical and nursing institutions. At present, according to Chengdu Regulations on Promotion of Care for the Elderly, since August 1, 2016. New non-profit welfare care institutions have been subsidized with 12,000 yuan per bed per person and non-public welfare pension institution will receive a subsidy of 10,000 yuan per bed.

By the end of 2015, Chengdu had a total of 2,908 people working in geriatric medical and nursing industry, 735 of whom were doctors, accounting for 25.28%; 1,153 nurses, accounting for 39.65%; 1020 nursing workers, accounting for 35.08%. Compared with last year, the total number of medical staff increased 67% year on year (Chengdu Daily, 2016). However, among the 7 geriatric nursing hospitals surveyed, there are 220 doctors, accounting for 29.9% of the geriatric medical and nursing service doctors in the city. The number of nurses is 382, accounting for 33.13% of the total number of nurses in the city. The number of nursing workers is 424, accounting for 41.59% of the total. Generally speaking, there is a shortage of specialized professionals in geriatric medical and nursing care.

Therefore, the investment in hardware facilities should be increased, the diagnosis and treatment level of geriatric medical and nursing institutions should be improved, the training of geriatric specialists and general practitioners in geriatric medical and nursing institutions should be carried out, and the medical technology level of geriatric medical and nursing institutions should be improved. We should establish a training system and mechanism for nursing workers, a system of certificates and evaluation, attach importance to the quality of nursing workers and service quality, and earnestly give a full play of the training funds for nursing workers. It is suggested that the government should increase its investment in on-the-job training funds for nursing workers by means of government subsidies.

(2) In order to promote the disabled elderly to obtain better medical resources and reduce worries, we should establish the medical insurance system especially for the elderly as soon as possible, and speed up the development of the medical care industry for the elderly by the support of insurance funds. Because the disabled elderly are prone to illness and deterioration of physical condition, commercial insurance can hardly provide sufficient protection for the disabled elderly. More should be done by relying on the government to

provide basic medical insurance support or setting up special funds to provide appropriate subsidies to service providers in the field of geriatric medical and nursing care, so as to attract more social capital to invest in geriatric medical and nursing services.

Chengdu, as one of China's 11 pilot cities for disability insurance, has already begun to formulate relevant systems of disability insurance, in a bid to better prepare for the advent of the peak of aging population in this city. Chengdu's disability insurance can adopt the framework of elderly insurance and medical insurance system and take the form of individual contributions, enterprise subsidies and social support to form special funds, which can effectively ensure that the disabled elderly have the ability to enjoy adequate medical services when they are disabled.

At the same time, commercial insurance companies are also encouraged to develop relevant types of insurance for the disabled elderly, to meet the needs of the disabled elderly at different levels, and to form a joint force with the government to promote the improvement of Chengdu's geriatric medical and nursing insurance system.

(3) Based on the analysis of the aging status and future aging process of the population in Sichuan Province and the survey results of satisfaction of the elderly with geriatric nursing institutions currently in operation in Chengdu, it can be seen that Chengdu's current geriatric nursing institutions face great market demand, having inadequate beds and large potential for future development, which can be the opportunity of long-term stable investment for enterprises.

Due to the fact that geriatric medical and nursing institutions provide both medical treatment and nursing and rehabilitation service, they are facing two bottlenecks: the particularity of situation of the elderly patient and the particularity of medical insurance payment process. At present, several geriatric nursing institutions operating in Chengdu are witnessing a shrinking market because the service they provide are similar without characteristics. Therefore, enterprises engaged in geriatric medical and nursing industry in the future should pay more attention to the needs of the disabled elderly, provide high-quality and personalized services, thus enhancing their core competitiveness.

Different groups have different demands for service. For enterprises, a more accurate

definition of service groups and a determination of service orientation are prerequisites for overall planning of enterprise development and service content. At present, the geriatric nursing institutions in Chengdu have met the basic service needs of the moderately and severely disabled elderly, while they fail to provide personalized and tailored service to improve the quality of life. Insufficient attention is paid to humanistic care. The mode of people-oriented all-person medical treatment and nursing and rehabilitation care are currently in a blank or initial exploration stage.

In the questionnaire survey on satisfaction evaluation of the elderly with moderate to severe disability in Chengdu, it is found that the expenditure is not an independent factor affecting the elderly to stay in the geriatric nursing institutions, and there is a big potential of market of personalized service. Therefore, enterprises engaged in the geriatric nursing industry, while meeting the basic demands of the elderly, should endeavour to improve the quality of life and living standards of the moderately and severely disabled elderly. In this way the elderly will put greater trust in the institution, thus enabling enterprises to obtain more profit.

5.5 Summary of this chapter

In this chapter, through descriptive analysis and empirical analysis of the data collected from the questionnaire, it can be seen from the descriptive analysis that the number of moderately and severely disabled elderly in Chengdu's elderly geriatric nursing institutions is gradually increasing and the service demand is expanding. However, the current market cannot meet the demand and there is great market potential. In the empirical analysis, the data of environmental satisfaction, medical quality satisfaction, service satisfaction, administration satisfaction and trust perception is analyzed, and the path mechanism of DES model is verified. The hypothesis is effectively confirmed, which shows that this model has certain practical guiding significance. In addition, through regression analysis among various factors, it can be seen that different dimensions have different effects on the satisfaction evaluation of the elderly, providing reference for the supply reform of geriatric medical and nursing institutions.

Chapter 6: Conclusions and Prospects

6.1 Research conclusion

With the aging of the population, the medical treatment, rehabilitation and care of the elderly, the sick, the mentally retarded and the disabled have become hot issues in social and economic development. With the gradual development of social welfare in our country, per capita disposable income has greatly increased, and the basic medical conditions of the elderly have been effectively improved. This thesis conducts an empirical study on the satisfaction evaluation of the elderly with moderate and severe disability in Chengdu on their admission to geriatric medical and nursing institutions. Based on the data analysis and combined with the actual situation, the following conclusions are drawn:

(1) The contradiction between supply and demand in geriatric medical and nursing institutions is inadequate. In Chengdu's geriatric medical and nursing institutions, the proportion of the disabled elderly in the long-term residents is high, reaching 92%. With the development of an aging society and the increase of family income, more and more disabled elderly will choose to stay in the geriatric medical and nursing institutions for a long time in order to obtain more timely medical resources. However, in Chengdu's geriatric medical and nursing institutions, the overall scale is relatively small, the medical quality is low, and more disabled elderly still choose home care.

(2) The disabled elderly share some similarity and also are different. Based on the SWOT analysis of the current geriatric medical and nursing institutions and the fact that 98% of the disabled elderly in Chengdu are due to illness, the existing geriatric medical and nursing institutions are unable to provide high-quality care for the disabled elderly living in institutions for a long time due to the convergence of service contents and relatively low level of medical technology, thus unable to truly realize their supporting functions. For the geriatric medical and nursing institutions that can provide diversified, specialized and systematic long-term care services, they are easy to be favored by the moderately and severely disabled

elderly. However, due to the limited resources, exorbitant fees and imbalance in the supply and demand structure, these institutions cannot be taken as the main body of the long-term care mode for the moderately and severely disabled elderly.

(3) The current service of geriatric medical and nursing institutions needs to be further improved. According to the basic situation of 310 moderately and severely disabled elderly people surveyed in this survey, most of the moderately and severely disabled elderly people admitted to geriatric medical and nursing institutions are at high age, ill, female, with low educational level, long disability time, severe disability degree and severe limb atrophy. The vast majority needs assistance in daily life. Therefore, higher requirements are put forward for the service capability and the professional level of geriatric medical and nursing institutions. The elderly and their families are generally satisfied with the current nursing status of the geriatric medical and nursing institutions, and are basically satisfied with the current medical service status of the geriatric medical and nursing institutions, but the vast majority of them do not reach the expectations.

(4) Trust perception has a strong positive effect on satisfaction evaluation of the elderly with moderate and severe disability. As a social welfare institution in the early days, the geriatric medical and nursing institution has a relatively single function, mainly caring for the elderly in their daily life, and the care for the disabled elderly is relatively inadequate. With the development of an aging society, the geriatric market has become a new market. Obtaining the trust of the elderly in the market competition is conducive to the cultivation of brand reputation and loyalty of the elderly. In the evaluation of satisfaction, the stronger the trust perception is, the higher the satisfaction evaluation for the geriatric medical and nursing institutions is. From another perspective, the enhanced trust perception can relatively weaken the evaluation of other perceived factors by the elderly residents.

However, trust perception has a two-way correlation with other perception factors. If the disabled elderly suffer many setbacks in environment, medical quality, service, administration and other aspects, it will also reduce the elderly's trust perception of admission to geriatric medical and nursing institutions, thus leading to a decrease in satisfaction evaluation.

(5) Based on the path analysis of environmental satisfaction, medical quality satisfaction, service satisfaction and administration satisfaction, it is found that among the major demands for the elderly with moderate and severe disability in Chengdu, the demand for "treatment" is not as big as expected and the perception of satisfaction for "treatment" is relatively less sensitive to the elderly. First, it is because traditionally geriatric medical and nursing institutions still focus on geriatric nursing, which is similar to nursing homes in terms of the social image, so the elderly residents have higher expectations for the environment and service of institutions; Second, the development of medical institutions for the elderly started late and cannot be compared with hospitals in terms of medical conditions and treatment approaches. Therefore, this thesis concludes that Chengdu geriatric medical and nursing institutions can improve their environment and facilities as well as service quality and service level, and therefore can effectively improve the satisfaction evaluation of the elderly with moderate and severe disability.

6.2 Research innovation

The research innovation mainly involves three aspects:

First, the research theory. Based on the classic theoretical model of consumer behavior analysis and combining the characteristics of the research object, a theoretical model that can be applied to the research is established.

Second, research approach. Empirical analysis approach is used to analyze the satisfaction survey of disabled elderly people in Chengdu with the geriatric nursing institutions. The thesis combines qualitative and quantitative methods to understand the needs of consumers more scientifically, and to provide suggestions on scientific development for the geriatric health care industry in Chengdu.

Third, application of the research. The thesis uses the survey results as a realistic basis for government policy design, enterprise investment decision and the selection of family for nursing institutions.

6.3 Research prospect

The research on satisfaction evaluation of geriatric medical and nursing institutions is against the background of the gradual increase of moderately and severely disabled elderly with various geriatric syndromes. However, due to their limited scientific research ability, they cannot accurately grasp the objective situation, there are still deficiencies in this research. In view of the deficiencies in this research, the following are sorted out:

First, when conducting the questionnaire survey, due to the small number of team members, when selecting the survey site, they received greater restrictions and were unable to conduct a wider range of surveys. At the same time, due to the many privacy issues involved in the survey, disabled elderly and their families have more concerns, resulting in certain distortion in the evaluation of the questionnaire. In the course of the investigation, due to the difference of the recording personnel, the different understanding of the questionnaire items and the different inquiry methods, the final result may have some deviation from the objective structure, which to some extent leads to the insufficient interpretation of the research results.

Second, when analyzing the influencing factors of satisfaction of the elderly with moderate and severe disability, the path coefficient research and multiple regression validation analysis are mainly adopted, ignoring the multi-directional influence of independent variables. In the future, further research will continue to study this issue.

Third, the impact model of satisfaction evaluation involved in this thesis does not consider the market supervision and state supervision of the geriatric medical and nursing market. As this part of factors cannot be quantified or directly perceived, this part of impact factors is not included in the questionnaire design. In fact, moderator factors are very important to the geriatric medical and nursing care market, and also have a greater impact on the satisfaction evaluation of disabled elderly. In the follow-up research, the influence of this factor should be further studied.

With China's growing attention to the aging of the population and the continuous promotion of the policy of combining medical treatment with nursing, the research in the

fields of gerontology, geriatrics, geriatric nursing and services are continuously providing theoretical guidance to the geriatric medical and nursing industry. However, due to the variability of population characteristics, disabled elderly people need personalized services according to their disability reasons. In the subsequent research process, more accurate research is still needed on this issue.

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Appendix 1

A Survey of Consumer Satisfaction in Chengdu Elderly Health Care Market

Dear Mr./Ms.:

With the prominent aging social problems in our country. accompanied by the development of the geriatric medical and nursing care market. Chengdu. as one of the advanced regions in southwest China's economic development. has a large elderly population and the potential problems in the geriatric medical and nursing care market are gradually exposed. This survey is mainly to find out the satisfaction of the elderly and their families living in the geriatric medical and nursing care institutions with the services provided by the medical care institutions.The questionnaire is an anonymous survey. It is only used for data analysis and project research. The data is confidential and will be destroyed after the project is completed. It will not harm your interests. Please fill in the questionnaire according to the actual situation.

University of Electronic Science and Technology of China

Part 1: Basic Questions

1. What is your gender? ()

A. male B. female

2. What is your age? ()

A.60-64 B.65-69 C.70-74 D.75-79 E. over 80 years old

3 What is your education level? ()

A. primary school and below B. junior high school C. high school

D.universities and tertiary institutions E. postgraduate and above

4. What is your career? ()

A. employees of enterprises B. individual businesses

C. agricultural practitioners D. institutions and agencies E. unemployment

5. What is your marital status? ()

A. married B. divorced C. widowed D. single

6. How many children do you have? ()

A.0 B.1 C.2 D. 3 and above

7. Have you purchased medical insurance or not? () (if "no" is selected. question 8 will not be answered)

A. yes B. no

8. Which of the following types of insurances have you purchased? ()

A. urban medical insurance B. medical insurance for urban workers

C. new rural medical cooperative insurance D. commercial insurance E. other types of insurance

9. How much monthly medical expenses can you afford? ()

A. below 1000 yuan B. 1000-2000 yuan C. 2000-3000 yuan

D. 3000-4000 yuan E. more than 4000 yuan

10. What is your monthly income? ()

A. below 1000 yuan B. 1000-2000 yuan C. 2000-3000 yuan

D. 3000-4000 yuan E. more than 4000 yuan

11. How much is your children's monthly financial support for medical expenses? ()

A. below 1000 yuan B. 1000-2000 yuan C. 2000-3000 yuan

D. 3000-4000 yuan E. more than 4000 yuan

12. What is your family distance from the hospital? ()

A. within 5km B. 6-10 km C. 11-20km

D. 21-30 km E. more than 31 kilometers

13. Do you have a long-term stay in a geriatric medical and nursing institution? () (each stay lasts for 15 days or more)

A. yes B. no

14. How do you provide medical and nursing services? ()

A. family B. care workers C. family+nursing staff

15. Which of the following diseases do you suffer from? ()

A. heart disease B. cerebrovascular diseases C. osteoarthropathy

D. epilepsy E. senile dementia F. cataracts eye diseases G. paralysis

H. depression I. tumors J. disability

Part II: Satisfaction Survey

The items in this section are satisfaction surveys. Please score the following items according to your own feelings. The scores are divided into 5 grades: very dissatisfied, relatively dissatisfied, general, relatively satisfied and very satisfied. Use 1. 2. 3. 4 and 5 to rate and 1 indicates the lowest satisfaction and 5 indicates the highest satisfaction.

Serial Number	Questions	Degree (Satisfied-Not Satisfied)
1a	How do you evaluate the convenience of dining in the institution?	
1b	How do you evaluate the food nutrition in the institution?	
1c	How do you evaluate the convenience of using rehabilitation facilities in the institution?	
1d	How convenient is the access to the ward?	
2a	How do you evaluate the dining environment of the institution?	
2b	How do you evaluate the rest environment of the institution?	
2c	How do you evaluate the public environment of the institution?	
2d	How do you evaluate the transportation convenience of the institution?	
2e	How do you evaluate the comfort of the clinic in the institution?	
2f	How do you evaluate the auxiliary environment such as the road signs of the institution?	
2g	How do you evaluate the rehabilitation facilities in the institution?	
3a	How do you evaluate the medical equipment in the institution?	
3b	How do you evaluate the health care equipment in the institution?	
4a	How do you evaluate the service attitude of administration staff in the institution?	
4b	How do you evaluate the service attitude of doctors in the institution?	

4c	How do you evaluate the service attitude of nurses in the institution?	
4d	How do you evaluate the service attitude of assistant nursing workers in the institution?	
5a	How do you evaluate the payment process in the institution?	
5b	How do you evaluate the protection of privacy in the institution?	
5c	How do you evaluate the patience of medical staff in the institution?	
5d	How do you evaluate the integrity of medical staff in the institution?	
5e	How do you evaluate the transparency of the fees in the institution?	
5f	How do you evaluate the pricing strategy in the institution?	
5g	How do you evaluate the medical treatment process in the institution?	
5h	How do you evaluate the department layout of in the institution?	
5i	How do you evaluate the layout of wards in the institution?	
6a	How do you evaluate the treatment programs provided by the institution?	
6b	How do you evaluate the professional level of doctors in the institution?	
6c	How do you evaluate the professional level of nurses in the institution?	
6d	How do you evaluate the professional level of assisstant nursing workers in the institution?	
6e	How do you rate the frequency of visits by doctors and nurses in the institution?	
6f	How do you evaluate the health care services	

	provided in the institution?	
6g	How do you evaluate the treatment effect in the institution?	

Part III:

This part mainly investigates the service items provided by geriatric medical and nursing institutions. Please evaluate them according to your feelings and divide them into 5 grades: unnecessary, relatively unnecessary, general, relatively necessary and very necessary. Use 1. 2. 3. 4 and 5 to rate and 1 indicates the lowest level and 5 indicates the highest level.

Serial number	Questions	Degree (necessary-unnecessary)
7a	How do you evaluate the psychological counseling provided in the institution?	
7b	How do you evaluate the regular physical examination provided in the institution?	
7c	How do you evaluate the personalized medical services provided in the institution?	
7d	How do you evaluate social activities organized by the institution?	

If you think the above service is necessary. Please evaluate the following items according to your personal feelings. 1 means definitely not. 5 means definitely yes.

Serial number	Questions	Degree (Yes-No)
8a	Will the provision of mental health services affect my evaluation of the institution?	
8b	Will the provision of regular physical examination services affect my evaluation of the institution?	
8c	Will the provision of personalized medical services affect my evaluation of the institution?	
8d	Will the provision of social activities affect my evaluation of the institution?	

Part IV:

This part mainly investigates your overall feelings towards the geriatric medical and nursing institutions. Please evaluate them according to your feelings and divide them into 5 grades: very distrustful, relatively distrustful, general, relatively trusted and very trusted. Use 1. 2. 3. 4 and 5 to rate and 1 indicates the lowest level and 5 indicates the highest level.

Serial number	Questions	Degree (trust-distrust)
9a	How much trust do you have in the professional level of doctors in the institution?	
9b	How much trust do you have in the professional level of nurses in the institution?	
9c	How much trust do you have in the professional level of assistant nursing workers in the institution?	
9d	How much trust do you have in the mental health services of the institution?	
9e	How much trust do you have in the medical equipment and facilities of the	

	institution?	
9f	How much trust do you have in the medication plan proposed by the institution?	
9g	How much trust do you have in the institutions you are currently staying in?	

Part V:

This part mainly investigates your overall feelings towards the current geriatric medical and nursing institutions. Please evaluate them according to your feelings and divide them into 5 grades: very dissatisfied, relatively dissatisfied, general, relatively satisfied and very satisfied. Use 1. 2. 3. 4 and 5 to rate and 1 indicates the lowest level and 5 indicates the highest level.

Serial number	Questions	Degree (Satisfied-Not Satisfied)
10a	How satisfied are you with the medical treatment effects of the institution?	
10b	How satisfied are you with the environmental facilities of the institution?	
10c	How satisfied are you with the medical services provided by the institution?	
10d	How satisfied are you with the administration level of the institution?	
10e	Are you willing to recommend others to choose this institution?	

Thank you for your participation and wish you a happy life!

Appendix 2

Functional Independence Rating Measurement (FIM)

Item				Evaluation score						
				Indepe-ndence		Limited dependence			Complete dependence	
				7	6	5	4	3	2	1
Motor function	**Self-care ability**	1	Eating							
		2	Washing							
		3	Bathing							
		4	Wearing pants							
		5	Wearing a coat							
		6	Using toilet							
	Sphincter control	7	Urine control							
		8	Defecation control							
	Transfer	9	From/to beds chairs and wheelchairs							
		10	To the toilet							
		11	Bath or shower							
	Walking	12	Walking/wheelchairing							
		13	Up and down stairs							
	Motor function score									
Cognitive function	**Communication**	14	Comprehension							
		15	Expression							
	Social cognition	16	Social interaction							
		17	Solving the problem							

		18	Memory			
	Cognitive function score					
FIM total score						
Accessor					**Reviewer**	

Scoring criteria:

Independence: 1. Full independence (7 points) 2. Limited independence (6 points)

Dependence:

1. Limited dependence:

(1) Monitoring and preparation (5 points).

(2) Need assistance by a small amount of physical contact (4 points).

(3) Need assistance by moderate physical contact (3 points)

2. Total Dependence:

(1) A lot of help by physical contact (2 points).

(2) Total Dependence (1 point)

Functional level and scoring criteria

Independence - the patient needs no assitance to complete a task.

Complete independence (7 points) - task completed in a safe and standard manner within reasonable time;

Incomplete independence (6 points) - using auxiliary equipment or exceeding normal time to complete the task or completer the task in a risky way;

Dependence: in order to complete the task, the patient needs another person's monitoring or physical assistance, or the patient cannot complete the task complete the task.

1. Limited dependence - patients contribute 50% or more efforts to the completion of the task, and the level of assistance required is as follows:

(1) Monitoring and preparation (5 points) - the assistance needed by the patient is only limited to the provison of heads-up or notice. There is no physical contact between the assistant and the patient, or the assistant only needs to help prepare the necessary supplies, or help put on the orthosis.

(2) Assistance by a small amount of physical contact (4 points) - the help needed by the patient is limited to light physical contact, and he can contribute 75% or more efforts to the completion of the task.

(3) Assistance by moderate physical contact (3 points) - patients need moderate assistance and can contribute 50% - 75% efforts.

2. Complete dependence - the patient can only complete less than half of the task without assistance or depends on others completely, otherwise the activity cannot be carried out.

(1) The assistance by a large number of physical contacts (2 points) - the effort of the patient contibuted to the completion of the task is less than 50%, but more than 25%.

(2) Total dependence (1 point) - patients' efforts are less than 25%.

II. Dependence

5 points: limited dependence need monitoring (need guidance. help to prepare necessary supplies);

4 points. need a small amount of help (patient contribution > 75%);

3 points. need moderate amount of help (patient contribution > 50%).

III. Complete dependence.

2 points. need maximum help (patient contribution > 25%);

1 points. need full help (patient contribution < 25%).

According to FIM score. the full score is 126 points. including 91 points for motor function and 35 points for cognitive function. which can be used to classify the elderly into 7 grades: (see Table 2)

(1) 108 points to 125 points for independence;

(2) 90 points to 107 points for extremely light dependence and conditional independence;

(3) 72 to 89 points for mild dependence;

(4) 54 points to 71 points for moderate dependence;

(5) 36 to 53 points for severe dependence;

(6) 19 points to 35 points for extremely severe dependence;

(7) 18 points or less for complete dependence.

Appendix 3

Table 1 Monthly Income of Medical Staff in Geriatric Nursing Hospitals in Chengdu (Yuan)

Name of hospital	Practitioner	Assistant practitioner	Registered nurse	Clinical nutritionist	Assistant worker
A	6895	4015	3654	/	3250
B	7282	4670	3082	3847	2685
C	7039	4237	3247	3654	2498
D	6852	4218	3128	/	2345
E	7589	5100	3085	/	2610
F	7689	5400	3265	/	2500
G	6500	3800	3021	/	2100
Average	7120	4491	3212	3750	2570

Table 2 Training of Nursing Workers in Geriatric nursing Hospitals

Training qualification	Number of people	Proportion (%)
Nurse training	284	66.98
Other training	10	2.36
Without pre-job training	45	10.61
Junior nursing workers	53	12.5
Intermediate nursing workers	27	6.37
Senior nursing workers	5	1.21
Total	424	100

Table 3 Basic Equipment Configuration of Geriatric Nursing Hospital

Projects	Device name	Number of hospitals	Percentage%
Basic settings	Calling device	7	100
	Oxygen supply device	7	100
	Electric aspirator/sputum aspirator	6	85.71
	Air cushion bed/sore pad	7	100
	Treatment vehicle	7	100
	Morning and evening care car	7	100
	Medical record vehicle	7	100
	Medicine cabinet	7	100
	Ecg machine	7	100
	X-ray machine	6	85.71
	b ultra	7	100
	Hematuria analyzer	7	100
	Biochemical analyzer	7	100
	Incubator	7	100
	Disinfection supply equipment	4	57.14
	Refrigerator	7	100
	Washing machine	7	100
Emergency equipment	Cardiac defibrillator	4	57.14
	Ecg monitor	7	100

Rehabilitation treatment professional equipment	Tracheal intubation equipment	4	28.6
	Ventilator	7	42.86
	Oxygen supply equipment	7	100
	Rescue vehicle	7	100
	Exercise therapy equipment	5	71.14
	Physical therapy equipment	7	100
	Occupational therapy equipment	5	71.14
	Information equipment		
	Automation Office Equipment of Inpatient Department	7	100
	Automation Office Equipment of Information Section	7	100

Table 4 Operation of 7 Fixed Payment Geriatric Nursing Hospitals

Nursing Hospital	Policy-required beds	Actual number of beds	Patients	Beds occupancy rate (%)	Average hospitalization Days	Inpatient Average Cost
A	250	518	600	97.38	36.12	12263.68
B	299	299	393	82.54	40.2	9504.47
C	240	450	512	101.1	23.66	6506.8
D	104	104	162	89.68	21.72	3033.81
E	180	180	190	87.83	32.39	5808.06
F	89	89	187	92.38	17.48	4617.48
G	230	230	212	104.69	27.36	5974.52

Source: Chengdu Human Resources and Social Security Bureau (2017)

Table 5 Measurement Indicators of Various Variables and their Sources

Variables		Measuring Indicators	Literature Source
Independe-nt Variables	Environmental satisfaction	How do you evaluate the convenience of dining in the institution?	Wu (2013) Yan and Gao (2013) Prochet and Silva (2012) Furuya (2013) Qiu (2015) Dickinson et al. (2014) Borah (2017) Dickinson et al. (2014) Borah (2017)
		How do you evaluate the food nutrition in the institution?	
		How do you evaluate the convenience of using rehabilitation facilities in the institution?	
		How convenient is the access to the ward?	
		How do you evaluate the dining environment of the institution?	
		How do you evaluate the rest environment of the institution?	
		How do you evaluate the public environment of the institution?	
		How do you evaluate the transportation convenience of the institution?	
		How do you evaluate the comfort of the clinic in the institution?	
		How do you evaluate the auxiliary environment such as the road signs of the institution?	
		How do you evaluate the rehabilitation facilities in the institution?	
		How do you evaluate the medical equipment in the institution?	
		How do you evaluate the healthcare equipment in the institution?	
	Service Satisfaction	How do you evaluate the service attitude of administration staff in the institution?	Ding (2014) Caner and Cilasun (2019) Huang (2018)

	How do you evaluate the service attitude of doctors in the institution?	Zhang (2014) Wang et al. (2016) Kittelson et al. (2019)
	How do you evaluate the service attitude of nurses in the institution?	Hao (2016) Kwak, Lee, and Kim (2017)
	How do you evaluate the service attitude of assistant nursing workers in the institution?	Lin and Zeng (2011) Li, Liu, and Wu (2018) Andrade et al. (2019)
	How do you evaluate the payment process in the institution?	
	How do you evaluate the protection of privacy in the institution?	
	How do you evaluate the patience of medical staff in the institution?	Xia, Zhu, and Chen (2018)
	How do you evaluate the integrity of medical staff in the institution?	Luciana et al. (2019)
	How do you evaluate the transparency of the fees in the institution?	Arling et al. (2013) Zhou (2019)
Administration satisfaction	How do you evaluate the pricing strategy in the institution?	Hong, Fang, and Hong (2016) Wang (2014)
	How do you evaluate the medical treatment process in the institution?	Wang, Tan, and Zheng (2009)
	How do you evaluate the department layout of in the institution?	Andrade et al. (2019)
	How do you evaluate the layout of wards in the institution?	
	How do you evaluate the value-added service initiatives in the institution?	
Medical quality satisfaction	How do you evaluate the treatment programs provided by the institution?	Yang (2017) Leonardi et al. (2018)
	How do you evaluate the professional	

		level of doctors in the institution?	Deng (2016)
		How do you evaluate the professional level of nurses in the institution?	Gu, Cao, and Liu (2019)
		How do you evaluate the professional level of assisstant nursing workers in the institution?	Chen (2010) Zhang, Huang, and Yin (2011)
		How do you evaluate the frequency of visits by doctors and nurses in the institution?	Wang et al. (2016) Zhang (2018)
		How do you evaluate the healthcare services provided in the institution?	Wang et al. (2016) Chen (2010)
		How do you evaluate the treatment effect in the institution?	Gomes et al. (2018) Li et al. (2018)
Moderator Variable	Trust Perception	How much trust do you have in the professional level of doctors in the institution?	Liu (2013) Javier et al. (2007) Huang et al. (2019) Zhang (2016) Guo (2011) Sun (2010) Pang (2015)
		How much trust do you have in the professional level of nurses in the institution?	
		How much trust do you have in the professional level of assistant nursing workers in the institution?	
		How much trust do you have in the mental health services of the institution?	
		How much trust do you have in the medical equipment and facilities of the institution?	
		How much trust do you have in the medication plan proposed by the institution?	
		How much trust do you have in the institutions you are currently staying in?	

Independe-nt Variables	Satisfaction Evaluation	How satisfied are you with the medical treatment effects of the institution?	
		How satisfied are you with the environmental facilities of the institution?	
		How satisfied are you with the medical services provided by the institution?	
		How satisfied are you with the administration level of the institution?	

Table 6 Pre-adjusted Cronbach Index of Questionnaire

Variables	Serial Number	Total Correlation of Corrected Items	Cronbach's Alpha value	Variables	Serial Number	Total Correlation of Corrected Items	Cronbach's Alpha value
Environ-mental Satisfact-ion	1a	.801	.827	Medical Satisfaction	6a	.795	.874
	1b	.716			6b	.822	
	1c	.715			6c	.757	
	1d	.806			6d	.738	
	2a	.823			6e	.803	
	2b	.817			6f	.824	
	2c	.799			6g	.819	
	3a	.782		Trust Perception	9a	.751	.904

	3b	5	.76			9b	.817	
	4a	6	.80			9c	.805	
	4b	5	.87			9d	.743	
Service Satisfact-ion	4c	5	.81	.830		9e	.812	
	4d	2	.81			9f	.829	
	5a	7	.78			9g	.765	
	5b	3	.75			10a	.817	
	5c	9	.77			10b	.787	
					Satisfaction			.879
	5d	8	.78			10c	.809	
Adminis-tration Satisfact-ion	5e	1	.80	.811		10d	.821	
	5g	8	.83					
	5h	1	.82					
	5i	4	.82					
	5j	3	.81					

Table 7 FIM Rating Statistics for Moderate and Severe Disability Elderly

Projects	Classification	Quantity	Percentage
FIM classification	Moderate dependence	118	38.1
	Heavy dependence	102	32.9

Extremely heavy dependence	66	21.3
Complete dependence	24	7.7

Table 8 Descriptive Analysis Statistics of Independent Variables

Independent Variables	Topic	Max	Minimum	Average	Median	Standard deviation
Environmental satisfaction	How do you evaluate the convenience of dining in the institution?	5	1	3.87	4	0.288
	How do you evaluate the food nutrition in the institution?	5	1	2.64	3	0.006
	How do you evaluate the convenience of using rehabilitation facilities in the institution?	5	1	3.18	4	1.661
	How convenient is the access to the ward?	5	1	3.75	4	0.337
	How do you evaluate the dining environment of the institution?	5	1	2.2	3	0.415
	How do you evaluate the rest environment of the institution?	5	1	3.25	3	1.638
	How do you evaluate the public environment of the institution?	5	1	3.03	3	0.314
	How do you evaluate the transportation convenience of the institution?	5	1	2.60	3	0.854
	How do you evaluate the comfort of the clinic in the institution?	5	1	2.44	3	1.424
	How do you evaluate the auxiliary environment such as the road signs of the institution?	5	1	3.26	3	0.880

	How do you evaluate the rehabilitation facilities in the institution?	:	1	2.02	4	0.137
	How do you evaluate the medical equipment in the institution?	:	1	2.29	4	1.996
	How do you evaluate the healthcare equipment in the institution?	:	1	3.65	3	1.563
	How do you evaluate the service attitude of administration staff in the institution?	:	1	2.88	3	1.356
	How do you evaluate the service attitude of doctors in the institution?	:	1	3.58	4	0.206
Service satisfaction	How do you evaluate the service attitude of nurses in the institution?	:	1	2.62	4	1.413
	How do you evaluate the service attitude of assistant nursing workers in the institution?	:	1	2.06	3	0.225
	How do you evaluate the payment process in the institution?	:	1	3.13	4	1.599
	How do you evaluate the protection of privacy in the institution?	:	1	2.74	3	1.386
Administration satisfaction	How do you evaluate the patience of medical staff in the institution?	:	1	2.98	4	1.915
	How do you evaluate the integrity of medical staff in the institution?	:	1	3.67	3	1.068
	How do you evaluate the transparency of the fees in the	:	1	3.17	3	0.991

	institution?					
	How do you evaluate the pricing strategy in the institution?	:	1	3.84	3	0.853
	How do you evaluate the medical treatment process in the institution?	:	1	3.96	3	1.287
	How do you evaluate the department layout of in the institution?	:	1	2.50	3	1.738
	How do you evaluate the layout of wards in the institution?	:	1	2.70	3	0.449
	How do you evaluate the value-added service initiatives in the institutions?	:	1	4.01	4	0.487
	How do you evaluate the treatment programs provided by the institution?	:	1	2.90	3	1.430
	How do you evaluate the professional level of doctors in the institution?	:	1	3.43	3	0.413
	How do you evaluate the professional level of nurses in the institution?	:	1	2.58	3	0.810
Medical satisfaction	How do you evaluate the professional level of assistant nursing workers in the institution?	:	1	3.13	3	0.350
	How do you evaluate the frequency of visits by doctors and nurses in the institution?	:	1	2.53	3	0.515
	How do you evaluate the healthcare services provided in the institution?	:	1	2.58	4	1.722
	How do you evaluate the treatment effect in the	:	1	2.65	4	0.134

institution?

Table 9 Descriptive Analysis of Moderator variables

Moderator variables	Topic	Maximum	Minimum	Average	Median	Standard deviation
Trust perception	How much trust do you have in the professional level of doctors in the institution?	5	1	3.5	4	0.895
	How much trust do you have in the professional level of nurses in the institution?	5	1	3.29	3	0.233
	How much trust do you have in the professional level of assistant nursing workers in the institution?	5	1	3.3	4	0.812
	How much trust do you have in the mental health services of the institution?	5	1	3.13	4	0.478
	How much trust do you have in the medical equipment and facilities of the institution?	5	1	4.12	3	1.041
	How much trust do you have in the medication plan proposed by the institution?	5	1	3.98	3	1.628
	How much trust do you have in the institutions you are currently staying in?	5	1	3.86	4	0.131

Table 10 Descriptive Analysis of Dependent Variables

Dependent variables	Topic	Maximum	Minimum	Average	Median	Standard deviation
Satisfaction evaluation	How satisfied are you with the medical treatment effects of the institution?	5	1	3.7	4	1.838
	How satisfied are you with the environmental facilities of the institution?	5	1	3.42	4	1.921
	How satisfied are you with the medical services provided by the institution?	5	1	3.28	4	1.111
	How satisfied are you with the administration level of the institution?	5	1	3.33	4	1.416

Table 11 Statistical Table of Total Variance Results for Factor Interpretation of Moderator Variables

Initial eigenvalue			
Serial number	Total	Percentage	Cumulative percentage
1	5.271	75.300	75.300
2	.486	6.943	82.243
3	.395	5.643	87.886
4	.318	4.543	92.429
5	.235	3.357	95.786
6	.171	2.443	98.229
7	.124	1.771	100.000

Table 12 Statistical Table of Total Variance Results Explained by Factor of Dependent Variables

	Initial eigenvalue		
Serial number	Total	Percentage	Cumulative percentage
1	3.891	77.820	77.820
2	.421	8.420	86.240
3	.403	8.060	94.300
4	.285	5.070	100

Table 13 Partial Hypothesis Test Results of Independent and Moderator Variables

Code	Content	Results
H6	The trust of the elderly with moderate and severe disability in geriatric medical and nursing institutions is positively related to environmental satisfaction.	Confirmed
H7	The trust of the elderly with moderate and severe disability in geriatric medical and nursing institutions is positively related to their treatment satisfaction.	Confirmed
H8	The trust of the elderly with moderate and severe disability in geriatric medical and nursing institutions is positively related to service satisfaction.	Confirmed
H9	The trust of the elderly with moderate and severe disability in geriatric medical and nursing institutions is positively related to their administration satisfaction.	Confirmed

Table 14 Tests Results of Partial Hypothesis of Moderator Variables and Dependent Variables

Code	Content	Results
H5	The trust of the elderly with moderate and severe disability in geriatric medical and nursing institutions is positively correlated to satisfaction evaluation.	Confirmed

Table 15 Partial Hypothesis Tests Results of Independent and Dependent Variables

Code	Content	Results
H1	Environmental satisfaction with geriatric medical and nursing institutions is positively correlated to satisfaction evaluation by the elderly with moderate and severe disability.	Confirmed

H2	The medical quality of the geriatric medical and nursing institutions is positively correlated to the satisfaction evaluation by the elderly with moderate and severe disability.	Confirmed
H3	Service satisfaction of geriatric medical and nursing institutions is positively correlated to satisfaction evaluation by the elderly with moderate and severe disability.	Confirmed
H4	Administration satisfaction of geriatric medical and nursing institutions is positively correlated to satisfaction evaluation of the elderly with moderate to severe disability.	Confirmed

Table 16 Model Fitting Index Results

	Chi-square	GFI	AGFI	RMSEA
Standard value	P<0.05	>0.9	>0.9	<0.05
Test value	32.517**	0.928	0.907	0.041

Note: * * * Indicates significant at 0.05 level.

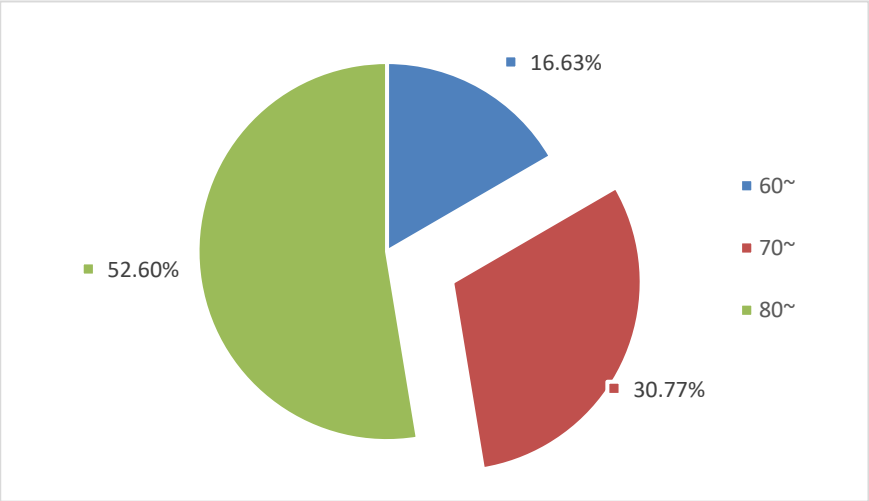

Figure 1 Age of Moderate and Severe Disability Elderly

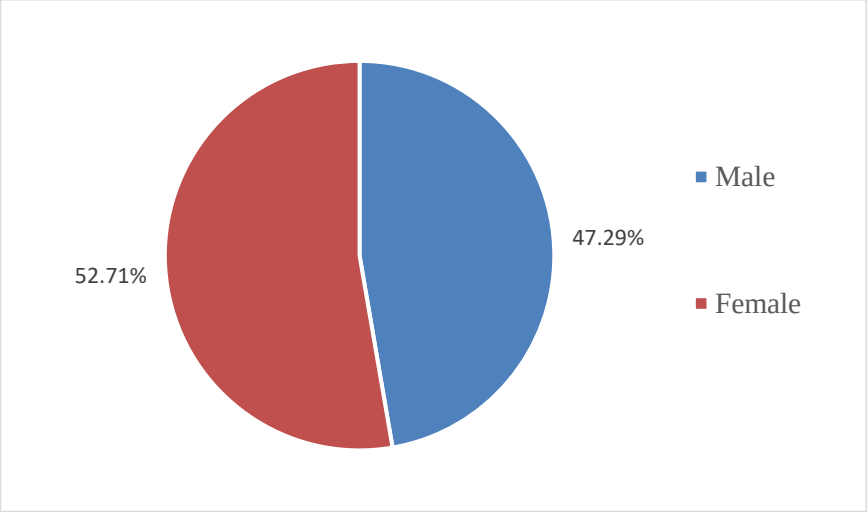

Figure 2 Gender Composition of Moderate and Severe Disability Elderly

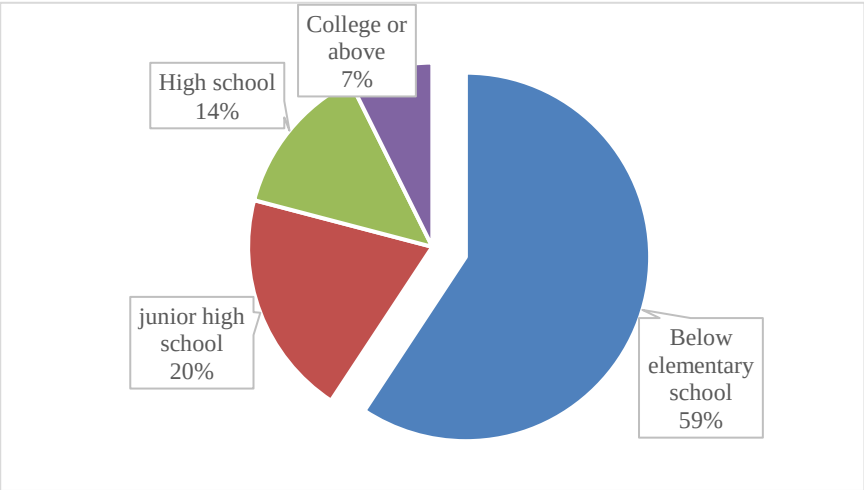

Figure 3 Educational Level of Elderly with Moderate and Severe Disability

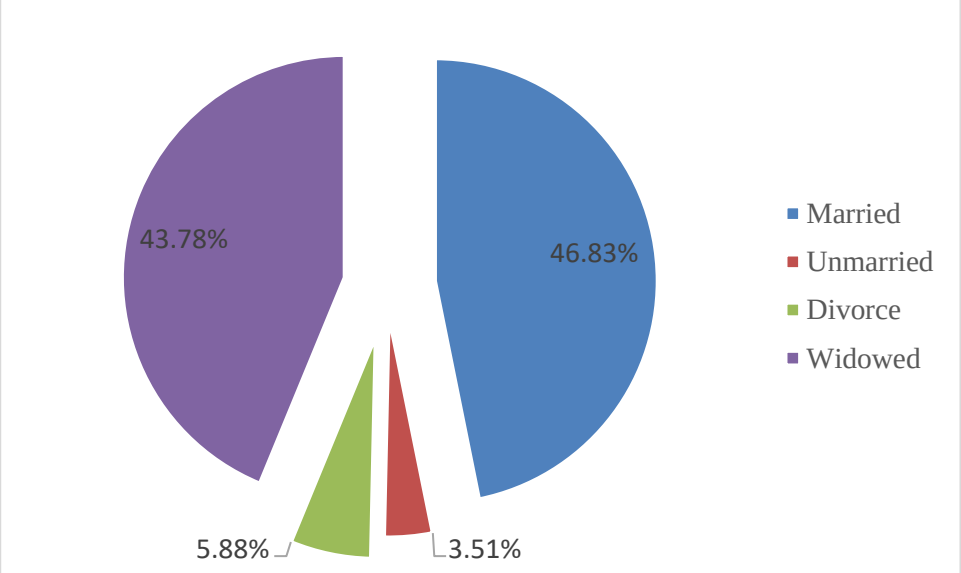

Figure 4 Marital Status of Moderate and Severe Disability Elderly

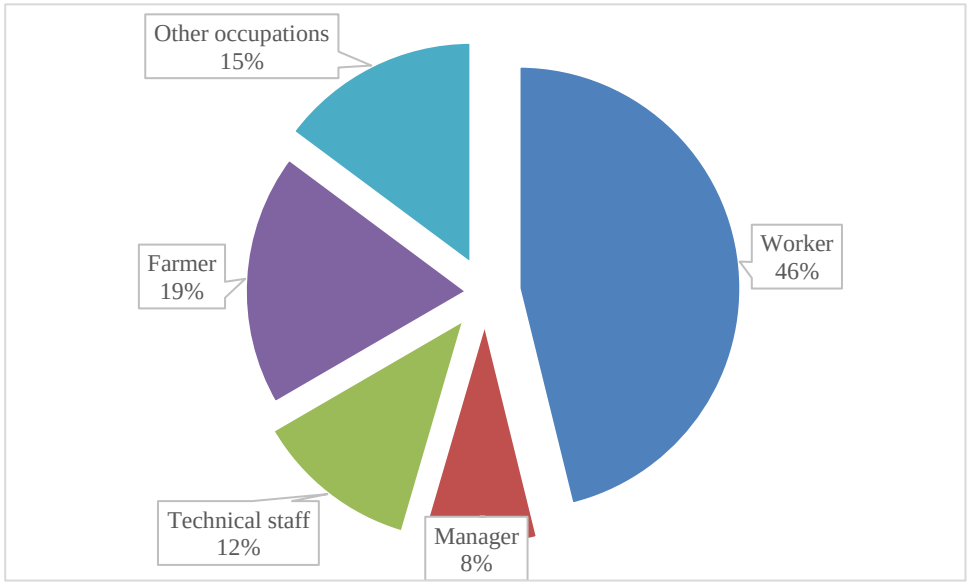

Figure 5 Occupational Structure of Moderate and Severe Disability Elderly

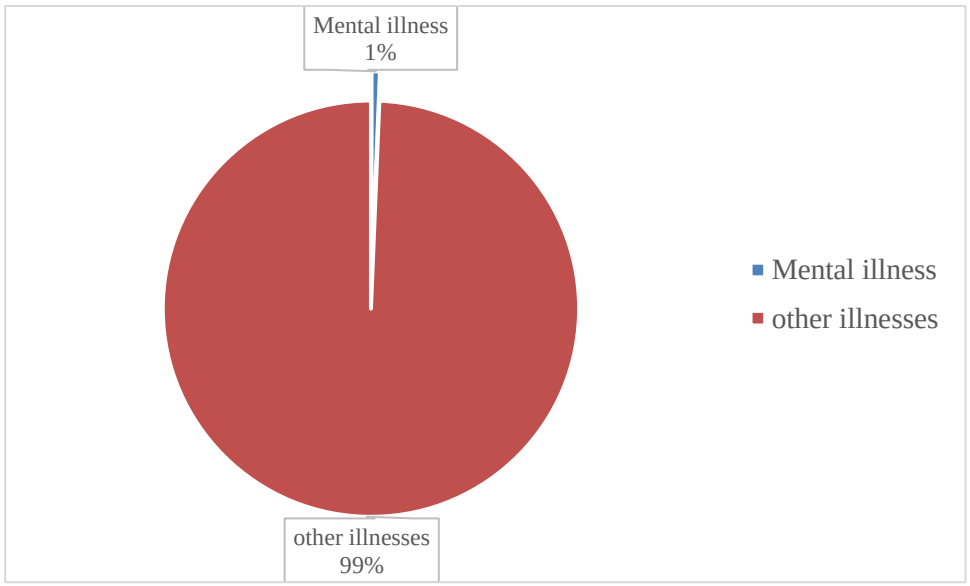

Figure 6 Prevalence of Moderate and Severe Disability Elderly

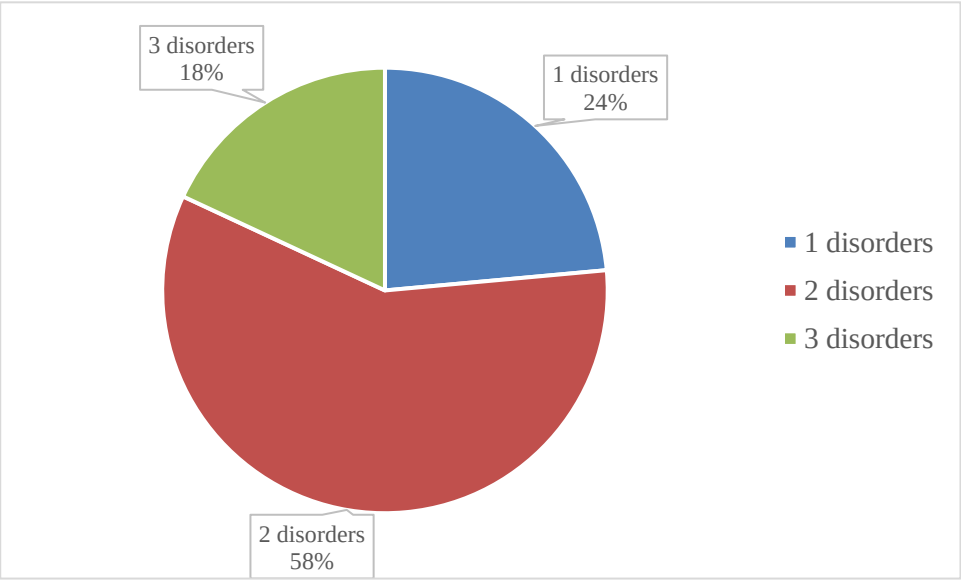

Figure 7 Disease Types of Elderly with Moderate and Severe Disability

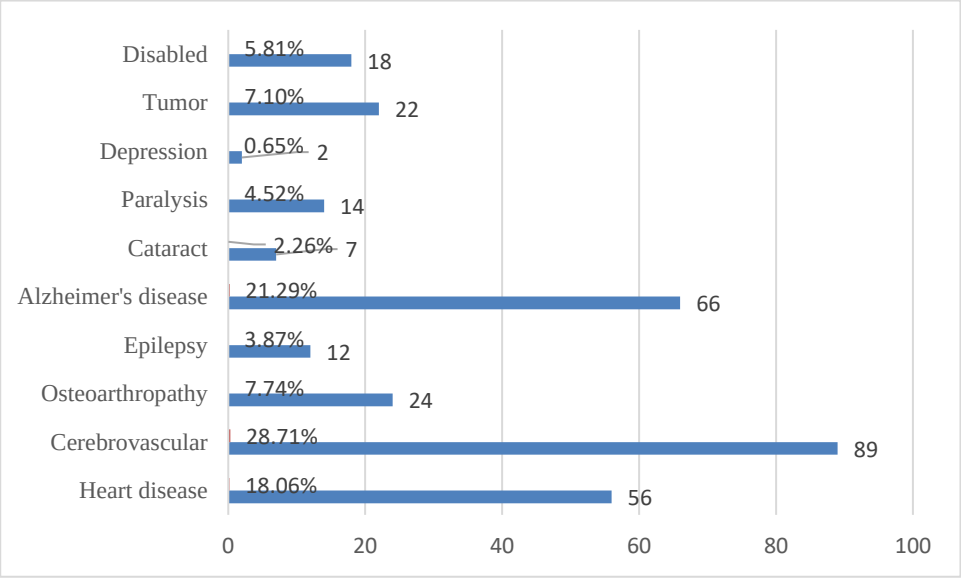

Figure 8 Number of Different Types of Common Diseases of Elderly with Moderate and Severe Disability