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Understanding the Factors Influencing Choice to Practice in Rural and Remote Communities in China: The Case of Liannan County in Guangdong

LUO Yibin

Doctor of Management

Supervisor:
PhD Maria Gabriela SILVA, Assistant Professor,
ISCTE University Institute of Lisbon

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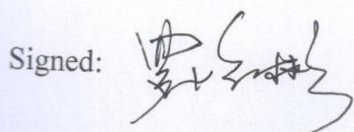
Signed: 

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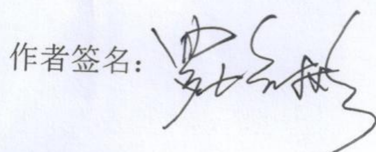
作者签名：

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Abstract

Past studies have found that there is a multiplicity of reasons that explain the shortage of health workers in rural and remote communities, including workplace conditions, professional development, and social and personal considerations. However, the motivations to practice in rural and underserved regions in China remains a crucial focus of research.

This research offers a new investigation about the factors influencing the decision to come, stay or leave a rural and ethnic minority area in China. Twenty-three semi-structured interviews were conducted with health professionals in Liannan County Hospital. The results suggest that, besides the rural exposure and rural habits, age-related changes in human needs fulfillment help to explain personal choices about where to practice. These insights contribute to the advancement of academic knowledge through the investigation of work motivation across the life span, as well as provide practical recommendations that may aid in the recruitment and retention of health workers in such regions.

Keywords: health professionals, rural ethnic minority regions, retention, turnover, China

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Resumo

Alguns estudos apontam para a existência de uma multiplicidade de razões que explicam a escassez de profissionais de saúde em comunidades rurais e periféricas, incluindo as condições de trabalho, desenvolvimento profissional, e considerações pessoais e sociais. Contudo, as motivações para exercer a profissão em regiões rurais e esquecidas na China permanece um ponto crucial de investigação.

Este estudo oferece uma nova investigação sobre os fatores que influenciam a decisão para trabalhar, permanecer ou abandonar uma área rural e de minoria étnica na China. Vinte e três entrevistas semi-estruturadas foram realizadas com profissionais de saúde no hospital do Município de Liannan. Os resultados sugerem que, para além da exposição rural e dos hábitos rurais, mudanças nas necessidades humanas a satisfazer relacionadas com a idade ajudam a explicar as escolhas pessoais sobre onde exercer a profissão. Esta visão contribui para o avanço do conhecimento académico através da investigação das motivações laborais ao longo da vida, assim como propõe algumas recomendações práticas que podem auxiliar no recrutamento e retenção de profissionais de saúde nessas regiões.

Palavras-chave: profissionais de saúde, regiões de minoria étnica rural, retenção, turnover, China

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摘 要

以往的研究发现，造成农村和偏远社区卫生工作者短缺的原因有很多种，包括工作场所条件、专业发展以及社会和个人考虑。然而，在中国农村和欠发达地区工作的动机仍然是研究的重点。

本研究对影响中国农村和少数民族地区留任或者离任决定的因素进行了新的调查。对连南县医院的卫生专业人员进行了 23 次半结构化访谈。结果表明，除了农村生活经验和适应农村习惯之外，满足各个年龄段不同的需求有助于解释卫生工作人员选择在哪里职业。此次研究结果有助于从整个生命周期的角度来解释工作动机，并提高该领域的学术科研知识，有助于为在这些地区招聘和留任卫生工作者提供实用的建议。

关键词：卫生专业人员，农村少数民族地区，留任率，离职率，中国

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Five years have passed since I planned to apply for the DMH programme, from the interview to the enrollment, from the intensive lectures to the empirical research, until the submission of the final draft of my thesis. Looking back on these years, I feel very emotional, like I am about to finish a 42km long marathon and seeing the finish line is a mixture of sadness and joy.

I would like to take this opportunity to express my endless and most sincere gratitude to all those who have helped and encouraged me over the past five years.

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从计划报名这个博士项目到面试录取，从集中授课到调查研究，直至论文定稿提交，转眼就过去了五年。回想起这些年，十分感慨，就像即将跑完一场 42 公里漫长的马拉松，看到终点，悲喜交集。

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首先我要感谢恩师席尔瓦教授这五年来为我所付出的心血。在我进入论文初期，对论文的写作还是处于无知和迷茫，不知道怎么开始，席尔瓦教授不断的引导和帮助，让我度过了迷茫阶段，尽早进入理论研究和写作的过程。当我在为无法找到相关文献而发愁的时候，教授为我发来一篇篇带有启发的文章。也是导师逐字逐句修改以及耐心指导，教会了我如何撰写定性研究的论文。正是这些珍贵的经历，让我逐步走上论文写作的正轨。在五年的写作中，118 封邮件的指导意见，让我感受到导师的辛勤付出。席尔瓦教授扎实严谨的治学方针、实事求是的科学精神，时时刻刻影响着我，导师平易近人的性格和严格治学的精神让我印象深刻。席尔瓦教授给予我最大的支持，极大地促进了论文工作的顺利完成。博士期间能得到席尔瓦教授的指导，是我最幸运的事情。

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回顾博士学习和论文写作的过程，是我人生最重要的一段学习经历。带给我的不仅

仅是知识上的收获，更多的是教会我严谨治学科研的精神和工作的方法。这些将是我毕生的财富，鼓励我今后在知识的道路上继续砥砺前行。最后，再次表示深深的谢意。

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List of Acronym

GPHC	Guangdong Provincial Health Commission
ICU	Intense Care Unit
JCM	Job Characteristic Model
NDRC	National Development and Reform Commission
NHC	National Health Commission
PRC	People's Republic of China
RCMS	Rural Cooperative Medical System
TCM	Traditional Chinese Medicine

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Chapter 1: Introduction

1.1 Research background

1.1.1 Evolution of medical system reform in China

China's medical service system was founded in 1949 after the founding of the People's Republic of China (PRC). In the earliest planned economy model, the public medical system only covered state employees on the civil service and the state-owned enterprises (Zou, 2018). Farmers, who accounted for the majority of the population, did not get public health insurance for medical treatment. And more than 80% of the population had to seek medical treatment at their own expense. This medical model had structural defects, resulting in a large amount of waste of health resources. At the same time, it had a low degree of socialization, small coverage and poor fairness. Public health services became the medical benefits of a minority of people, while the rural population and the working population were outside the national system and could not get effective medical services.

In order to solve the rural medical problems, China established the New Rural Cooperative Medical System (RCMS) in 1959. However, the health resources allocated to the rural areas were still very small and the gap between rural and urban medical resources proportion was very large (Liu, 1994). In fact, China could not satisfy the demands for medical services in urban areas and let alone those in the rural regions. It means that, for a long time, the allocation of health resources was extremely unfair (Zhou, 2001) and the population in rural areas could not get reasonable medical services.

In order to solve the problem of insufficient medical service capacity, in 1968 China started to train bare-foot doctors in the rural areas. That is, China started to train non-professional medical staff by means of short-term health knowledge training courses to provide effective basic medical and health services for the rural population. The bare-foot doctors' system was described as achieving maximum health benefits with minimum input by the World Health Organization (2010) and the World Bank (2010).

To put it in simple terms, in the first 30 years of PRC, the nature of the medical and health system was characterized by "low level and wide coverage". However, in the 1980s, with the rapid development of China's economy, this low-level medical service became increasingly

unsuitable for the development of society and people needs. Therefore, because of the low-level poor service, bare-foot doctors gradually faded and the original RCMS completely lost its function.

Since the inception of the reform and opening-up policy, the health care industry has registered remarkable developments, including the entrance of for-profit medical institutions into the market, the separation of the outpatient drug department from the hospital, and the creation of a multi-site physician practice system. However, under the background of the market economy, public healthcare and profitability have contradictions and conflicts, sometimes exacerbating inequalities between regions. For instance, with the marketization of public hospitals and the rise of private medical care, rural medical treatment changed from being inaccessible to being unaffordable. This led to a vicious circle of social contradictions, as the rural population were becoming poor or returning to poverty because of illness for medical services (Zhu, 2009). At the same time, in the 30 years since the reform and opening up policy, China's healthcare industry adopted the management system of state-owned enterprises to manage the workforce and the business. Therefore, the flow of medical professionals was limited. Excellent talents were concentrated in economically developed areas and cities, while rural medical staff were limited by the system and had to stay in their original working areas. Due to serious constraints imposed by the rural environment, which is made up of fragile and peripheral territories, the rural medical staff could not get reasonable salaries, good learning opportunities and working conditions. All of these make medical staff, in less developed areas including the rural, remote and minority areas, to flow to the developed and urban areas. Thus, even after 40 years of reform and opening up, this system has not been broken yet, although the state has introduced measures to change the status quo.

1.1.2 Characterization of the health care sector in China

In the 1980s, China started the hierarchical management of hospitals. With reference to foreign diagnosis and treatment system, hospitals are classified into two categories, general hospitals and specialized hospitals. They are also divided into three tiers, which includes the hospitals in provinces and cities (third-level hospitals), counties (second-level hospitals), towns and villages (first-level hospitals). Hierarchical diagnosis and treatment are based on the severity of the disease and the difficulty of treatment. Different diseases are diagnosed and treated by different levels of medical institutions, such that the first consultation is realized at the grassroots level and, when required, the disease is treated at a more equipped hospital (Zhang, 2017). The

hierarchical diagnosis and treatment system allows to optimize the allocation of medical resources and promotes the equalization of medical services (Jian, 2018).

The Ministry of Health of the People's Republic of China regulates provincial hospitals, municipal hospitals, and county hospitals. Provincial hospitals are mainly in several prefecture-level cities in the province, and municipal hospitals are in municipal regions, all of which provide high-level comprehensive and specialized medical services and undertake scientific research and emergency medical services in their own areas. The provincial hospitals and municipal hospitals belong to third-level hospitals. County hospitals are responsible for the diagnosis and treatment of common and frequently-occurring diseases among residents in the county, the emergency rescue of critical illness and referral of difficult diseases. County hospitals provide public health services and medical emergencies for the residents in the county. County hospitals are generally second-level hospitals, and the rural medical system below the county level is first-level hospitals. The main differences between different levels of hospitals are the service scope and region as well as the inconsistent professional level (Zhang, 2017).

Grassroots health institutions are below the county level and are composed of township hospitals, community health service stations and village clinics. These institutions, which refer patients beyond their own service capacity to higher hospitals, mainly provide prevention and health care, health education, diagnosis and treatment services for common diseases, as well as rehabilitation and welfare services for some diseases. Township hospitals have the ability of primary diagnosis and treatment and the ability to perform common surgery. Community health service stations and village clinics are the most basic medical and health institutions, which provide basic public health and medical services, conduct primary diagnosis and treatment and referral for common and frequently-occurring diseases, provide basic drugs for simple diagnosis and treatment, master the health records of residents and provide families doctor service (Zhang, 2017). Community health service stations and village clinics are often short of qualified general practitioners, most of which are primary medical personnel who received the training of health knowledge. They lack medical resources and equipment, and are not equipped to perform operations except for simple instruments for examination and treatment. Grassroots health institutions differ from county level hospitals in terms of area and number of people served, technical strength and facilities (China's State Council, 2015).

County hospitals have the comprehensive medical capacity and relatively complete large-scale inspection facilities and equipment. Their settings of specialized departments meet the standards of all kinds of diseases. Therefore, county hospitals can basically achieve the goal of treating serious diseases without having to leave the county, and they can treat common and

frequently occurring diseases as well. However, township hospitals can only perform common surgery, most of which do not have the ability to perform complex operations and lack large equipment.

On the top of the pyramid there are provincial hospitals and municipal hospitals. These hospitals provide high-level surgery and diagnosis and treat difficult and miscellaneous diseases. In the middle of the pyramid, the medical services include county hospitals. They cover the main population areas and provide common operations, medical treatment for common and frequently occurring diseases and emergencies. First-level hospitals provide only basic medical care and general surgery, and most of them do not have the capacity for integrated services. Accordingly, county hospitals are the most important component of China’s medical and health care. They are the window and bridge for undertaking medical services for the largest population and the intermediate link and hub of two-way referral between first-level and third-level hospitals. If the service capacity of second-level hospitals is upgraded to a suitable level, it can meet the medical needs of most people. In economically developed areas, second-level hospitals can fully reflect their functions as bridges and intermediate platforms. However, in underdeveloped rural areas and remote areas, the contradictions and problems of second-level hospitals are very prominent – for instance, the shortage of talents and high turnover rate of personnel are key reasons for the low medical service capacity.

In economically underdeveloped areas, under the hierarchical diagnosis and treatment system, public hospitals also face several challenges, including the decrease of the total number of patients and business income and the insufficient payment ability of medical care. In addition, county public hospitals have poor infrastructures, a shortage of equipment, weak specialist technology and professionalism, insufficient quantity and quality of medical personnel. The hospitals have difficulty in introducing excellent talents, have an old-fashioned personnel distribution system, and an inefficient information system. Consequently, these hospitals fail to meet residents’ multi-level and diversified medical service needs (Fang et al., 2018).

1.1.3 Loss of medical workers in rural areas in Guangdong

Guangdong has had a drastic development in its society, economy and industrialization. The province has obvious advantages as it boasts a coastal and urban economy. However, talents and capital are gathered in coastal areas and big cities, resulting in unbalanced development outside the central cities. Taking medical services as an example, when first-tier cities, such as Guangzhou and Shenzhen, recruit medical workers, people throng to apply. Therefore, these

cities have to raise the job requirements to control the number of applicants and to reduce the labour intensity and cost of recruitment. When tertiary hospitals recruit general resident doctors, a master's degree from prestigious universities is the basic requirement. The situation is similar in second- and third-tier cities. Although the job requirements are not so stringent, there are still a lot of applicants. By contrast, 57 counties in the east, north and west of Guangdong have difficulties recruiting staff. The vacancy rate of the posts of staffing of government affiliated institutions, which are extremely hard to get in central cities, reaches 40% (Yang, 2015). The proportion of medical workers with a bachelor's degree in many county hospitals is very low. Some hospitals have been unable to recruit or retain undergraduate medical workers for years. However, a bachelor's degree is the most basic requirement for medical practitioners. Medical undergraduates can only apply for the qualification of assistant medical practitioners and do not have the qualification of independent practice. They cannot apply for the qualification of medical practitioners until they have worked for five years. Some undergraduates cannot obtain practicsing license for decades or even until they retire. Some assistant medical practitioners, who work in rural areas, leave for developed areas after obtaining the license. Hence, it is very difficult for county hospitals to develop human resources because of the difficulties in recruiting and retaining staff and the shortage of qualified medical professionals.

There are 367 county hospitals in Guangdong, including 279 public hospitals and 88 private ones, serving a population of more than 40 million. According to the research report, by the end of 2017（Guangdong Provincial Health Commission [GPHC], 2017), there were 710,000 health technicians in Guangdong. Among them, there were only 74,000 in 57 counties in the western, eastern and northern parts of Guangdong, accounting for 10.4% of Guangdong's total medical personnel. Furthermore, only 17,000 of them have a bachelor's degree or above, accounting for only 6.7% of the total number of the province (256,500), and 5,034 health technicians have senior titles, accounting for 8.5% of the total number of the province (59,100). In March 2018, in underdeveloped areas in Guangdong, the number of practicing doctors and nurses per 1,000 residents, and the number of general practitioners per 10,000 permanent residents was 1.58, 1.61 and 1.77 respectively, significantly lower than the provincial average of 2.32, 2.76 and 2.12 (Government Service Center of GPHC, 2018). It shows that the total number of health technicians is insufficient. County hospitals lack not only medical workers, but also talent reserve. Hence, the talent reserve in county hospitals is very inadequate (Yang, 2015).

As the main providers of primary medical service, the hospitals in counties and towns are seriously understaffed. County and township hospitals find it hard to attract and recruit talents, particularly in the east, north and west of Guangdong. As a result, in underdeveloped areas in

Guangdong, the service capacity of primary medical and health institutions is generally not strong, which is not compatible with the economic development level of Guangdong. It also fails to meet the growing needs of society for health and medical care.

Taking Chenghai, a district in Guangdong as an example, there are 1,109 posts of staffing of government affiliated institutions. But, among them, only 688 posts are occupied, which means that the other 421 are vacant, accounting for 38% of the total. There are less than 50 technicians with sub-senior titles or above, and less than 200 attending physicians and other technicians at the intermediate level. More than 80% of the medics are junior health technicians (Yang, 2015). There is a serious shortage of technical personnel with intermediate titles or above and the structure is out of balance. County hospitals find it hard to provide medical services due to the desperate lack of staff, the uneven distribution of technical posts, and the long-term shortage of personnel in certain posts.

Located in the northwest of Guangdong, hospitals in Liannan County have a similar situation. Their clinical departments are short of doctors with intermediate and senior professional titles. So, they recruit doctors who have just graduated but have not yet obtained the qualification to practice. However, most of them choose to leave after obtaining the qualification. Taking the radiology department of Liannan County Hospital as an example, there are 7 doctors, among whom there are 3 assistant medical practitioners, 3 technicians, and only 1 qualified radiologist. Such a team cannot handle the work of taking and analyzing radiology images, diagnosing and writing reports round the clock. The situation is similar in other clinical and technical departments.

In addition to the inability to retain staff, there is serious structural imbalance in the professional technician team in county hospitals. For instances, the proportion of medical talents, who are highly educated and with high professional titles, is very low. There is also a serious shortage of specialized talents and scientific research talents, including specialized talents in inspection, imaging, general practice, pharmacy, nutrition and health care (Yang, 2015).

1.2 Research problem, research objectives and questions

1.2.1 Research problem

Asia accounts for about half of the world's population, but it only has 30 percent of the world's health professionals (Chen et al., 2016). The uneven distribution of health professionals in many

countries is also reflected within countries (Dussault & Franceschini, 2006). It means that there is a serious imbalance between the level of medical care and the urban population in most countries. In Bangladesh, for example, four metropolitan areas have 35% of doctors, yet only 14.5% of the national population (Zurn et al., 2004). In Ghana, 87.2% of 1,247 general doctors worked in urban areas in 1997, although 66% of the national population lived in rural areas. (Lehmann, Dieleman, & Martineau, 2008; Emmanuel et al., 2015)

The flow of health workers follows the distribution of wealth, so health workers often move from remote and low-income rural areas to cities (Padarath et al., 2003). Some healthcare workers also use local urban hospitals and/or private institutions in low-income countries as a springboard to move to the underserved areas in high-income countries.

At present, in remote areas and ethnic minority areas, in China, it is difficult to have access to primary health care. On the one hand, the poor medical conditions and incomplete medical facilities often block locals from accessing medical treatment, leading to a decline in the quality of medical care. For instance, the backward equipment makes it impossible to screen out some diseases. On the other hand, medical staff in rural areas have a high turnover rate. As a result, locals are unable to receive essential health services throughout their life, which make medical services more inaccessible and unaffordable. Without professional technical personnel, rural residents can only go to hospitals at or above the county level. However, going out to other places for medical treatment will impose a heavy economic burden on the rural population, which is also the main reason for people becoming poor or returning to poverty because of illness.

In an attempt to change the situation, in 2009, China started to provide locals with basic public health services for free. Community health centers were created, residents' health records were established, and the community was under health management. However, in rural areas, the shortage of medical staff, low quality of health management and nonstandard management were serious constraints to implement the residents' health preventive control, treatment and rehabilitation. Consequently, disease prevention and management have not been in place and the collaboration among departments is still poor. Furthermore, China's rural residents have had high morbidity, low health awareness, and low rates of diseases treatment.

For instance, regarding rural residents' morbidity and health awareness, a survey conducted among about 600,000 people in 155 urban and rural communities found that rural areas are the worst-hit areas of stroke, and the stroke morbidity and mortality of rural residents are significantly higher than those of urban residents. The high stroke morbidity in rural areas is closely related to the low awareness of stroke prevention knowledge among rural residents

(Kuang, 2017). China's Prospective Study on Chronic Diseases, which was conducted in 2017, published data on diabetes morbidity and mortality in urban and rural China. Although diabetes morbidity is higher in urban areas, mortality from diabetes is higher in rural areas (Jian, 2017).

In short, in remote and poor rural areas, due to the lack of resources and the serious loss of medical staff, the service capacity is severely inadequate and there is no professional medical staff, which contributes to the weak prevention and treatment of multiple diseases (He , 2018). Further, the loss of medical staff and the lack of management in grassroots health institutions have contributed to postponing initiatives to educate locals about diseases and the harm of diseases when they are not treated in an earlier stage, which seriously affect the quality of life and work ability.

Giving the disparity between the need for and supply of health services, the shortage of talents and brain drain in ethnic-minority areas and remote and poor areas is an important problem to address (Arora et al, 2017). In the past four decades, in poverty regions, the turnover rate of young and middle-aged medical workers is twice the rate of the inflow of talents (Bao, 2016; Sun, 2016). Statistics also show that more than 3 million medical workers from western China have left for developed regions since the 1980s (Sun, 2016). The anecdotal evidence suggests that medical talents generally do not choose to work in county hospitals, and even if they have registered permanent residence there, few choose to stay on. Township hospitals, which have worse conditions than county hospitals, find it harder to retain talents.

Thus, the intent of this research is to understand better the perceptions of health workers relating to their retention/turnover in the workforce. As a matter of fact, focusing on health workers attraction and retention factors is essential to address the shortage of rural medical talents and to help medical schools and hospital managers to develop mechanisms for promoting the flow of medical talents to poverty and remote areas in China.

1.2.2 Research objectives and questions

To balance the medical resources between urban hospitals and county hospitals, the National Health Commission, which is in charge of health care in China, has encouraged the growth of county hospitals. In the past decade, there was massive improvements in infrastructure and equipment in county hospitals. For instance, in 40 counties, in Guangdong, hospitals were upgraded with treatment environment and medical equipment (Health Commission of Guangdong Province, 2019).

Even though these improvements have helped county hospitals to become more attractive

to medical talents, losing staff is still a big headache. In the face of increasing demand for promoting stability and development of hospitals, state departments have introduced some regulations. For instances, in Guangdong, tertiary hospitals are required to send 5% of doctors with intermediate or higher titles to 100 county hospitals each year (Health Commission of Guangdong Province, 2019). However, such assistance has targeted the short-term imbalance in the supply and demand for health care services, but has not changed the long-term plight of county-level hospitals. Thus, it seems that the concurrent talent loss and talent inflow does not have abated signalling the need for a better understanding of the phenomenon and identifying interventions that may produce long-term effects.

Therefore, the main objective of this research is to understand the medical workers' motivations to work and live in or to leave poverty-stricken and remote areas and to present an accessible evidence-informed framework that addresses the challenges of rural practice that can be turned into rewards and the incentive to stay. The specific research objectives can be formulated as follows:

1. To describe the health workers who work at remote ethnic minority areas;
2. To uncover the health professional's reasons to come, stay or leave remote ethnic minority areas;
3. To identify the challenges of the rural health work and how they can be turned into rewards and the incentive to stay.

To achieve this purpose, it is important to investigate the actual experiences related to the work and life of medical workers in remote minority areas, as well as the career prospects and non-work factors that characterize life in these rural and remote communities.

Hence, in the context of a county hospital in remote and ethnic minority region (here labeled Liannan County Hospital), three research questions were used to direct this research:

1. What health professionals do work in Liannan County Hospital? Do their profiles differ by age and seniority, upbringing and sociocultural integration, or life trajectories and fulfillment of life goals?
2. What are the main reasons to come, stay or leave a position in Liannan County Hospital?
3. How challenges of rural practice can be turned into rewards and the incentive to stay in Liannan County Hospital?

1.1 Outline of the thesis

This thesis is divided into six chapters. Chapter One, Introduction, gives an idea of the research

background and sorts out the significance of this research. It briefly describes China's medical system reform, the hierarchical system of hospitals in China, and the shortage of health workers in rural areas in Guangdong. Then, it identifies the research problem and advance with research objectives and research questions. Finally, an outline of the thesis is provided.

Chapter Two, Literature review, reviews relevant theories, concepts and approaches that may provide insights about attitudes and behaviors related to decisions to locate, stay and leave the job.

Chapter Three, Methodology, describes the research strategies adopted in this research, the participants involved in the research, the type of data gathered, and the method used to interpret data.

Chapter Four, Data analysis, gives voice to the participants. Through an inductive analysis, it presents the main findings disclosed in the thematic analysis, organized by themes and subthemes.

Chapter Five, Discussion, provide the answers to the research questions initially identified, based on the findings.

Chapter Six, Conclusion, summarizes the main conclusions obtained in this research, identifies the deficiencies and puts forward suggestions for future research on the intention to come, stay and leave a job position in rural and underdeveloped areas.

Chapter 2: Literature Review

2.1 Health labor shortage

At present, an imbalance of health human resources, mainly in the quality and quantity of medical workers, is seen in all countries. The shortage of nurses has been a continuous problem facing the world in recent years. The World Health Organization (2020) predicted that by 2030, the world will face a shortage of 4.6 million nurses and midwives. Many countries in the world are facing the terrible consequences of a lack of nurses (World Health Organization [WHO], 2020). According to *China Health and Statistics Yearbook* (National Health Commission [NHC, 2020), China had 12.9283 million medical and technical personnel, 3.8669 million medical (assistant) practitioners, and 4.445 million registered nurses in 2019. Among them, 2.0457 million medical (assistant) practitioners and 2.6033 million registered nurses worked in cities, while 1.8212 million medical (assistant) practitioners and 1.8418 million registered nurses worked in rural areas. Statistics showed that, in 2018, China's total population was 1.39538 billion, including 831.37 million urban residents (59.58% of the total) and 564.01 million rural ones (40.42% of the total). Taking Guangdong Province as an example, the total population of Guangdong was 113.46 million, including 80.22 million urban residents (70.7% of the total) and 33.24 million rural ones (29.3% of the total). In Guangdong, 213,100 medical (assistant) practitioners and 270,000 registered nurses worked in cities, while 77,900 medical (assistant) practitioners and 86,300 registered nurses worked in rural Areas (NHC, 2020).

These data show that the ratio of medical workers in rural areas is obviously lower than that in cities. In cities, there are 26.5 practising doctors and 33.66 nurses among 10,000 people. In rural areas, however, there are 23.4 practising doctors and 25.96 nurses among 10,000 people. The above data indicate a significant gap in health human resources between cities and rural areas, and in different spatial criteria, medical and health resources are relatively inequitable in the configuration in China, particularly in health human resources (Dong, Fu, & Liu, 2020). As an economically developed region in China, Guangdong has a basically equal per capita health resource to the national level. Still, there are great regional differences in Guangdong, and such differences have a trend of gradual expansion (Wang et al., 2014).

In addition to the unbalanced distribution of medical workers within China, internationally,

there is also a great gap between China and developed countries. In 2018, the number of practising doctors and nurses per 10,000 people in China was 19.8 and 26.6, respectively. In Japan, the respective number was 24.1 and 121.5. In Singapore, the respective number was 22.9 and 62.4. In South Korea, the respective number was 23.6 and 73. In Germany, the respective number was 42.5 and 132.4. In the United Kingdoms, the respective number was 28.1 and 81.7. In Portugal, the respective number was 51.2 and 69.7. In the United States, the respective number was 26.1 and 145.5. In Canada, the respective number was 23.1 and 99.4. And in Australia, the respective number was 36.8 and 125.5 (NHC, 2020). The above ratio suggests that the number of China's medical workers is unmatched with the vast population in the country. The insufficient ratio of medical workers and unbalanced configuration of medical human resources between cities and rural areas lead to a shortage of medical workers in rural areas and the failure of rural residents to get access to suitable medical and health services (Zhang, 2015).

For the reason of historical development, feudal dynasties divided and ruled Yao people, Zhuang people and other ethnic minorities in Liannan and took measures to restrict their development; in addition, the ethnic monitories were deprived of a resourceful ploughland in flat areas and were forced to live in scattered remote and underdeveloped mountainous areas (Chen, 2009). The unbalanced configuration of health resources mainly results from the inconsistent economic development of all regions. Richer areas are greatly different from remote, poverty-stricken areas. In particular, inequity of medical security system and resource configuration causes the fact that rural residents have much higher medical expenses than their urban counterparts. The more underdeveloped a poverty-stricken area is, the more difficult it is to get access to medical welfare. It is very common in rural areas and poverty-stricken areas to be reduced to or return to poverty because of illness. Due to geological barrenness and lack of life resources, poverty not only brings about the scarcity of medical resources, low education level, little access to acquire health knowledge, but also leads to failure to meet medical service demands, growing work stress for medical workers, and conflict of cultural difference in minority areas and ethnic groups (Liu & Kang, 2019).

In remote ethnic minority areas, many phenomena are significant, such as insufficient medical service supply, outdated systems, lack of financial investment, shortage of health talents, poor infrastructure, expensive medical bills and difficult access to quality medical services for local residents (Luo et al., 2007). Some factors, such as regional economic backwardness and low education level, affect the medical services of ethnic minorities. In the case of per capita income lower than the poverty line, ethnic minorities are unable to pay for

emergency and severe cases and chronic diseases. Additionally, inadequate transportation in mountainous areas also severely hinders local residents' access to medical services. Inadequate transportation is a prevalent problem in minority areas. As a result, villagers' transportation fees and time costs are even higher than medical costs when they go out for medical services. For example, the distance between Daping Town and the county area as well as the distance between Woshui Town and the county area in Liannan is more than 60km away. Because of the distant journey, time cost and transportation fees are some of the major difficulties affecting the meeting of medical service (Chen & Liu, 2018; Yang, 2018;).

Pan (2019) proposed that lack of medical and health talents, difficulties in recruiting and retaining talents, and high turnover rate are common problems in hospitals in remote regions. Ageing and age interruption are prominent. Some doctors make practising without practising qualifications. Due to historical problems, in Liannan People's Hospital, there are still 14 doctors who do not have the practising qualification but still provide medical services for residents. The number of nurses is also insufficient there, which results in failure to carry out many businesses and seriously influences basic medical services and work.

In terms of the medical worker team, there is a large gap between remote and underdeveloped ethnic minority areas and economically developed cities. This is the most important influencing factor in the failure to meet medical and health service demands and backwardness in medical causes. The first reason is that local government gives priority to economic development and production improvement while paying insufficient attention to medical and health talents. Without a preferential policy, it is very difficult to attract talents to work and stay in ethnic minority areas. The second reason goes to inadequate cultivation efforts. Therefore, the ethnic minority areas not only fail to attract talents but are also unable to retain them. Existing talents are given insufficient care, and their salary is less attractive, without more opportunities for training and development. Ethnic minority areas are short of medical and health talents, and talents' overall quality is not improved. Due to the lack of health personnel, local residents' medical demands are not met. Besides, the composition and structure of medical talent teams are unreasonable. There is no targeted plan for the attraction and use of talents. What is worse, existing talents are neither trained according to needs nor distributed based on their advantages, leading to commonly seen person-post mismatching. Ethnic minority areas suffer financial difficulties, and welfare security systems for medical workers are not put into practice, which is not beneficial to improving medical workers' work enthusiasm (Nong, 2016). In 2017, the fiscal revenue of Liannan County was only RMB 125 million. In 2019, the figure was 155 million RMB, which was the same as the operating revenue of Liannan People's

Hospital in 2017. The government's budget deficit was extremely high, which was RMB 579 million in 2019 (Liannan County Statistics Bureau, 2020). Under such a budget deficit level, even civil servants' salary is not paid in full, let alone the security for medical workers.

2.2 Knowledge workers

From the perspective of human resources, medical workers as talents are hospitals' core resources and belong to knowledge workers. Therefore, in order to analyze the reasons for difficult recruitment, retention and turnover motivations, and high turnover rate of medical workers, "knowledge worker" should be the first concept to be discussed.

In terms of hospital operation, a hospital's workers include knowledge workers and technical workers. Technical workers refer to employees who mainly provide manual labour and simple skills for hospital operation. Medical workers, who provide medical services for patients, are primarily engaged in brainwork. Knowledge workers are those who use their professional knowledge to provide patients with judgment, evaluation and other diagnosis and treatment behaviours. As hospitals are an organization providing health and medical services, knowledge workers are major core resources of hospitals to provide medical services and products.

Therefore, the outflow of knowledge workers, if any, will have a remarkable negative effect on the hospital's normal operation and order.

Knowledge workers refer to those who master important technology and knowledge and engage in business administration or technical work. They are one of the sources of core competence for corporate development. Domestic and overseas scholars have started research on such a special group since the 1950s. The term "knowledge worker" was first coined by Drucker (1959) that knowledge workers as workers who are good at applying symbols and concepts and using knowledge and information to work. The concept of knowledge workers has a wide range. Middle and senior managers and technicians are all knowledge workers. With the development of research, the connotation of knowledge workers is gradually evolving. Scholars at home and abroad have defined knowledge workers from multiple perspectives.

Wang defined knowledge workers as workers who create, expand and apply knowledge and bring added knowledge and capital value for organizations (Wang, Lu, & Xu, 1998). Many medical workers create innovative technology and methods during their work process and bring added knowledge value for the organizations, which is the core meaning of the term "knowledge worker" proposed by Wang, Lu, and Xu, (1998).

In conclusion, we define knowledge workers as the ones who master and apply symbols and concepts, utilize knowledge or information to work and bring added knowledge and capital value for enterprises. Knowledge workers should include workers who are equipped with much-specialized knowledge in respects of management and technology and who have rich experience in their industry.

Pollock and Cruz (1999) believed that knowledge workers are relative to technical workers, with the difference in utilization of knowledge and skills. After systematically learning medical knowledge, medical workers will provide different skills and services for patients based on their knowledge and experience, in which lie the diversity and value of medical services hands when creating value, and they bring added value through creativity, judgment, evaluate. Horibe (2000) considered that knowledge workers are those who use the brain more than their ion, integration and design. When providing medical services, medical workers have a complete work guideline. During the course of diagnosis and treatment, however, many situations are not specified in the guideline. Therefore, medical workers, based on their own judgment and evaluation, need to come up with integrated solutions to address problems. As a result, the flexible citation of knowledge indicates that medical workers are typical knowledge workers.

The literature shows that there is a large degree of ambiguity in the characteristics of knowledge workers. This ambiguity can be attributed to the different natures of the work environment and many other phenomena (Donnelly, 2006).

Knowledge workers have a higher professional level, so their value in the labour market is relatively high, which makes knowledge workers' bargaining power and salary levels higher than that of ordinary labour (Donnelly, 2006). Knowledge workers with high added value have high bargaining power, so they have a low degree of dependence on the organization and focus on finding employment opportunities elsewhere. If health workers in rural areas can have such bargaining power, they can easily get employment opportunities elsewhere. When these knowledge workers leave, they take away the knowledge and skills acquired in the organization, which makes hospital managers quite passive (Fong et al., 2011).

Opinions of Chinese scholars Ren (2011) proposed that the increase in the turnover rate of knowledge-based employees has led to the decline of internal cohesion and poor corporate reputation, which is not conducive to the survival and development of the company. Zhang (2018) believed that knowledge workers have become a key factor affecting the competitiveness of a company's industry. Enhancing the attractiveness of enterprises to talents and preventing the loss of employees, especially knowledge-based employees, has become an important topic for state-owned enterprise managers to study carefully. Yao, Zhang, and Feng

(2020) pointed out that the contribution of nurses as knowledge workers in the medical process cannot be ignored. The shortage of nurses caused by the high turnover rate has reached a crisis level in recent years.

In summary, the author believes that health workers share the typical characteristics of knowledge workers. This research studies the health workers' work motivation, willingness to stay and leave, working conditions, career development, learning opportunities, and the practice of knowledge and experience have all become the main factors that affect their choices and decision-making. At the same time, the personal and professional characteristics of knowledge workers are consistent with those of medical staff. Therefore, knowledge-based workers are the dominant feature of health workers, and it also explains the mental state and behavioural tendencies of health workers. Jayasingam, Govindasamy, and Singh (2016) argued that the behaviours and attitudes of knowledge workers are very different from those of ordinary workers, so their decision-making is also very different. This is also the reason why this research positions health workers as knowledge workers and conducts research according to their characteristics.

2.3 Motivation theory

Originated in Latin, Hasihuan (2011) believed that the term "motivation" is defined as pushing or moving. Based on motivation theory, the concept of motivation is defined as motivation is the cause of action.

Peterson considered that work motivation reflects how people understand their work and what their work means, how they work according to these meanings, and why they work in the first place (Peterson et al., 2009).

Yu (2014) identified motivation as motivation is the psychological process of continuously stimulating personal motivation. Individuals receive incentives in the social environment, and the incentives generate needs accordingly. Needs cause the inner driving force, which is motivation. Therefore, the theory related to motivation is also called incentive theory.

Huang (1996) identified motivation as the psychological tendency or motivation that stimulates and maintains an individual's activity and leads the activity to a certain goal. Robbin (1998) believed that work motivation is the willingness to achieve organizational goals through high-level efforts, and this effort is conditional on satisfying certain needs of individuals. Zhao (2004) argued that work motivation is the internal drive of employees to work hard to achieve organizational goals in order to meet their own needs and proposed a behaviour-driven model

that emphasizes three levels of needs, motivation and goals.

Modern work motivation theory explains the reasons for people's actions and the factors that affect work activities (Kanfer, Frese, & Johnson, 2017). In the past few decades, the work motivation theory mainly centred on performance, which believed that performance was the determinant of motivation.

2.3.1 Structure of work motivation

(1) Two-dimensional theory of work motivation (intrinsic motivation)

Most psychologists said that work motivation is divided into internal and external dimensions. Representatives of the two-dimensional theory are Hackman and Oldham (1976), Deci and Ryan (1985), and Amabile (1994).

Deci (2005) believed that work motivation is divided into two parts: internal motivation and external motivation as shown in Figure 2.1. Internal motivation triggers two kinds of behaviors, one is the behavior of looking for a challenge, and the other is the behavior of inspiring to win the challenge. The whole process is to seek challenges and win them. Deci and Ryan (1985) argued that intrinsic motivation is mainly composed of two main factors: cognition and emotion. The cognitive part is mainly self-determination and competence; the emotional part is the emotional experience brought about by the behavioral process triggered by intrinsic motivation such as interest, curiosity, and satisfaction as shown in Figure 2.2.

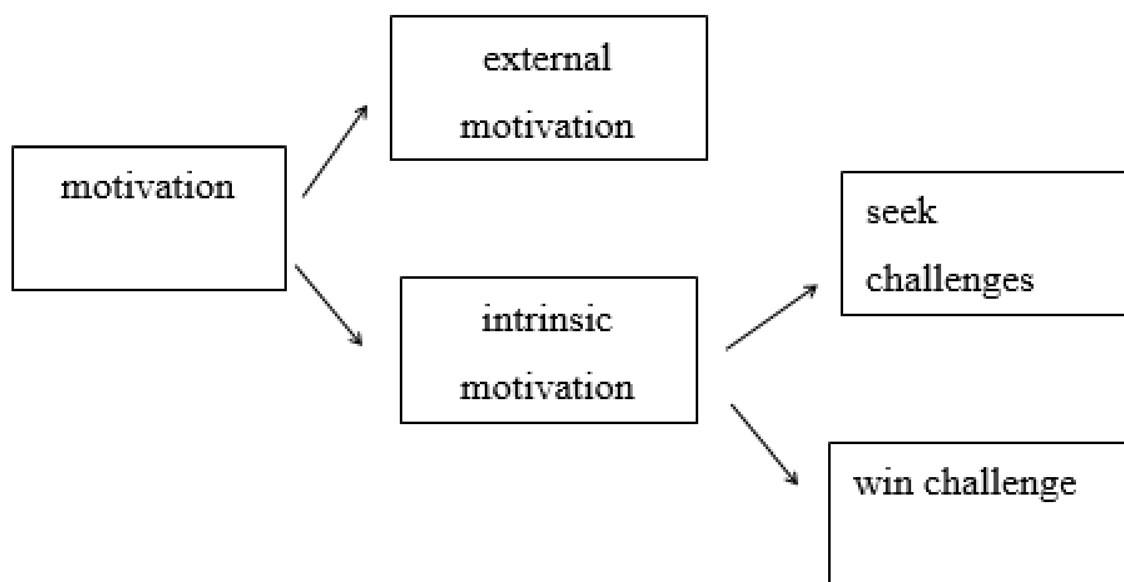

Figure 2.1 Deci's (2005) theoretical structure diagram of the two-dimensional theory of motivation

Medical and health work in rural and remote mountainous areas is a challenge compared to

urban and economically developed areas. Under such circumstances, if health workers are interested or curious about rural lifestyles and work styles, they will be willing to meet the challenge of working and living in rural areas and will actively participate in work practices. The motivation for this work is in line with the relevant research of Australian scholars on the willingness of rural health workers (Cosgrave, Hussain, & Maple, 2018). Chinese scholars have found that medical staff under the age of 24 are more passionate, have a stronger sense of mission, and are willing to seek new challenges and accept work challenges than colleagues over that age, which is consistent with research at home and abroad (Ding, 2011). Research by Australian scholar (Cosgrave, 2020a) has shown that rural health workers in the early stages of their careers are more adventurous and intriguing, and are more motivated to in work.

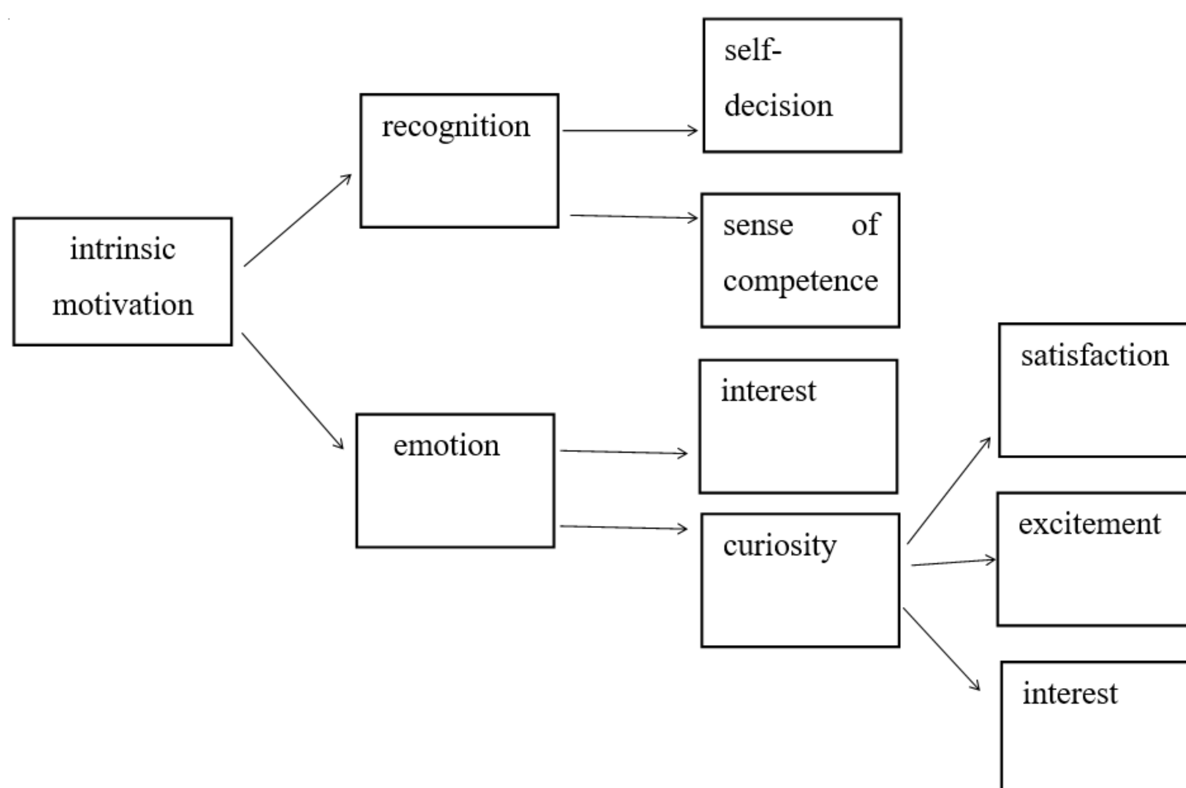

Figure 2.2 Deci and Ryan’s (1985) theoretical structure diagram of the two-dimensional theory of intrinsic motivation

Both White’s (1959) sense of competence to complete the work and Berlyne’s (1954) human curiosity were developed on the basis of the two-dimensional theory of motivation. Lesser and Madabhushi (2001) proposed the theoretical basis, support the two-dimensional theory of intrinsic motivation. Lesser and Madabhushi (2001) argued that the process of exploration and curiosity satisfaction is the emotional part of satisfying intrinsic motivation (White, 1959; Berlyne, 1954; Lesser & Madabhushi, 2001).

(2) Three dimensions of intrinsic motivation

Vallerand et al. (1992) put forward the three-dimensional theory of intrinsic motivation of self-determinism based on his research. Vallerand (1997) proposed that intrinsic motivation is composed of three dimensions: understanding stimulation, achievement and experience stimulation as shown in Figure 2.3.

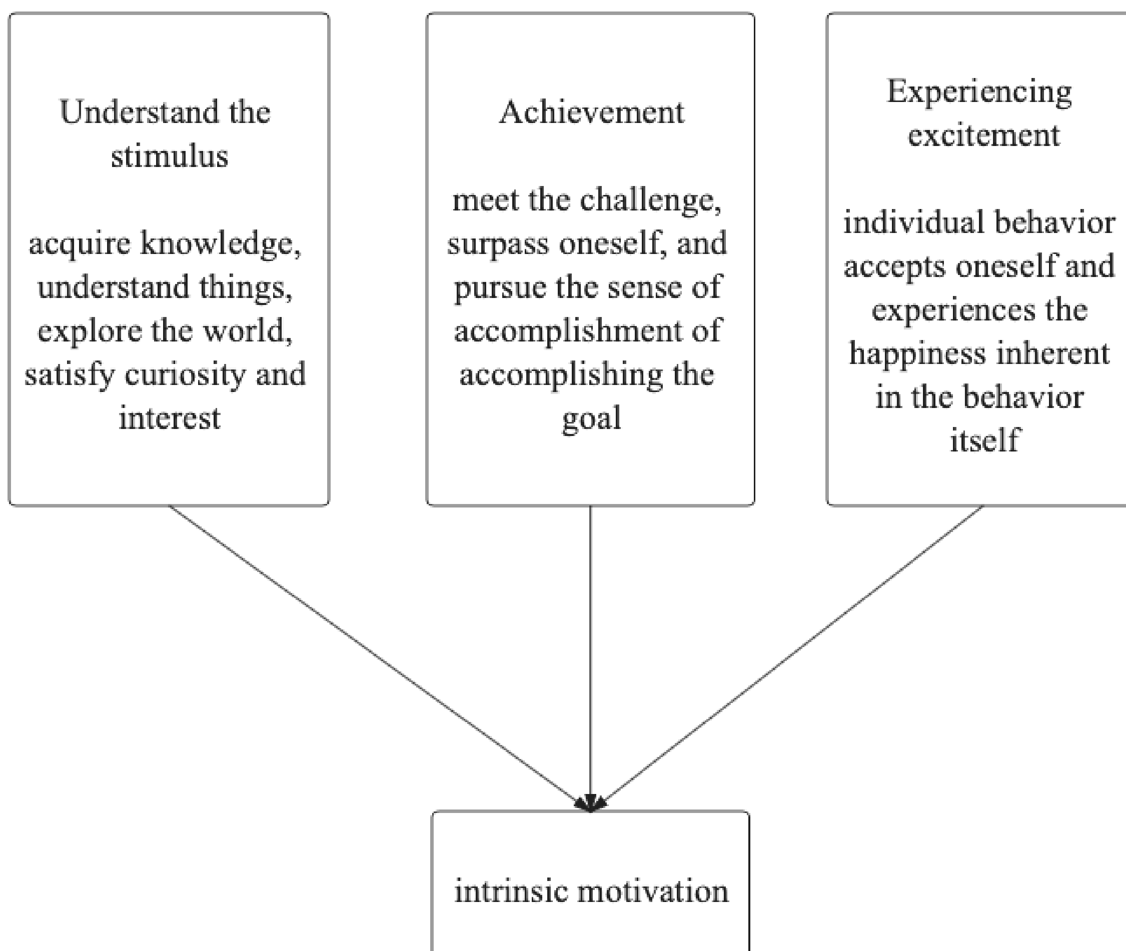

Figure 2.3 Vallerand's (1997) three-dimensional theory of intrinsic motivation

(3) Five dimensions of intrinsic motivation

Amabile et al. (1994) proposed the five dimensions of intrinsic motivation. The five dimensions include self-determination, competence, task involvement, curiosity and interest as shown in Figure 2.4.

Vallerand (1997) put forward the three-dimensional theory of self-determination on the basis of Deci and Ryan (1985). He argued that it is not only interest and curiosity, self-efficacy, but self-determination is the process of personality development, enrichment and integration. In the process, corresponding to these three different stages, understand the stimulus type: the desire for knowledge, the achievement type: the sense of accomplishment, and the enjoyment type: the excitement.

In the daily work and training of medical staff, the project-based learning teaching method is adopted to stimulate the interest and curiosity of medical staff in learning through situational teaching, improve core business ability, and have a good effect on providing professional satisfaction and job satisfaction (Ding, Guo, & Bao, 2019; Yang, Yin, & Ma, 2020).

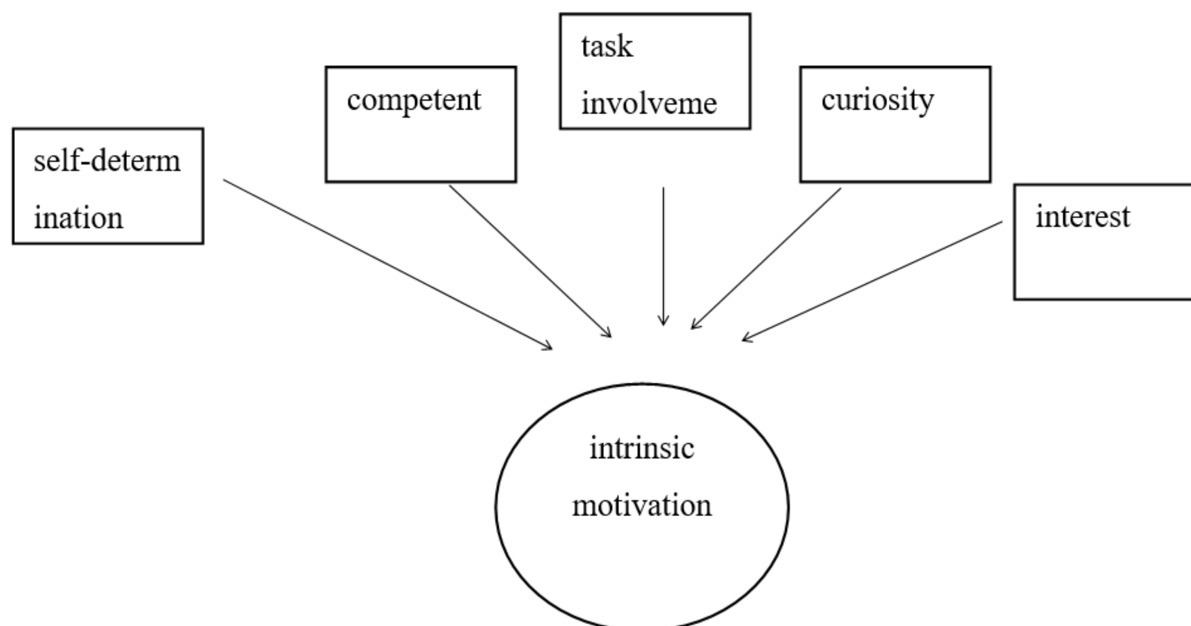

Figure 2.4 Amabile's (1994) five-dimensional theoretical structure of intrinsic motivation theory

(4) Ten dimensions of intrinsic motivation

Wherry and South (1977) divided the theory of work motivation into ten dimensions, and they are autonomous responsibility (Wherry & South, 1977), challenge, high mobility, goal orientation, future orientation, emphasis on skills and abilities, competition with standards, conquering danger, alertness and creativity of concentration. as shown in Figure 2.5. In January 2020, there was a sudden outbreak of the COVID-19 in Wuhan, China. This is a brand-new unknown virus. In this context, the Chinese government organized 40,000 medical staff across China to go to Wuhan for medical assistance operations. This action reflected the ten dimensions of work motivation and achieved great success (Luo, 2020; Chen, 2021).

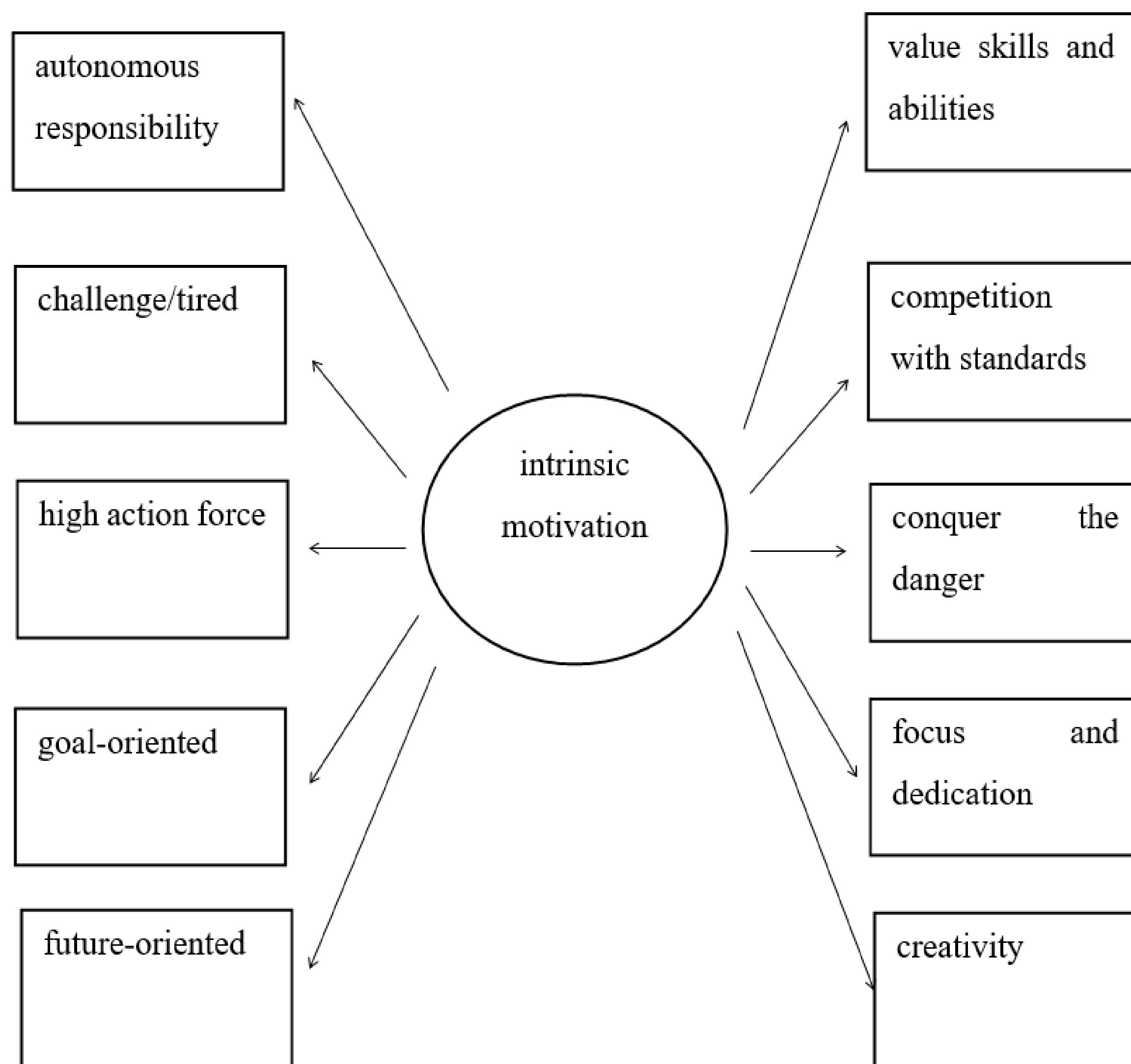

Figure 2.5 Wherry and South (1977) work motivation 10-dimensional theory

2.3.2 Sources of influence of work motivation

The influence sources of intrinsic motivation are mainly divided into individual characteristics, attitude characteristics, work characteristics, and social characteristics.

(1) Individual characteristics

Deci and Ryan (1985b) and Lesser and Madabhushi (2001) pointed out that the individual characteristics that affect intrinsic motivation mainly include: age, individual needs, interests and emotional factors (Deci, 1985; Lesser & Madabhushi, 2001).

(2) Attitude characteristics

According to previous theoretical research results, attitude characteristics are manifested as

employees' subjective feelings and feedback related to job characteristics. Attitude and motivation are mainly composed of self-efficacy, goal setting, organizational support, organizational justice, and external evaluation of expectations.

(3) Work characteristics

The job characteristic is the characteristic of the job task itself. This research adopts the job characteristic model (JCM) proposed by Hackman and Oldham (1980) as shown in Figure 2.6.

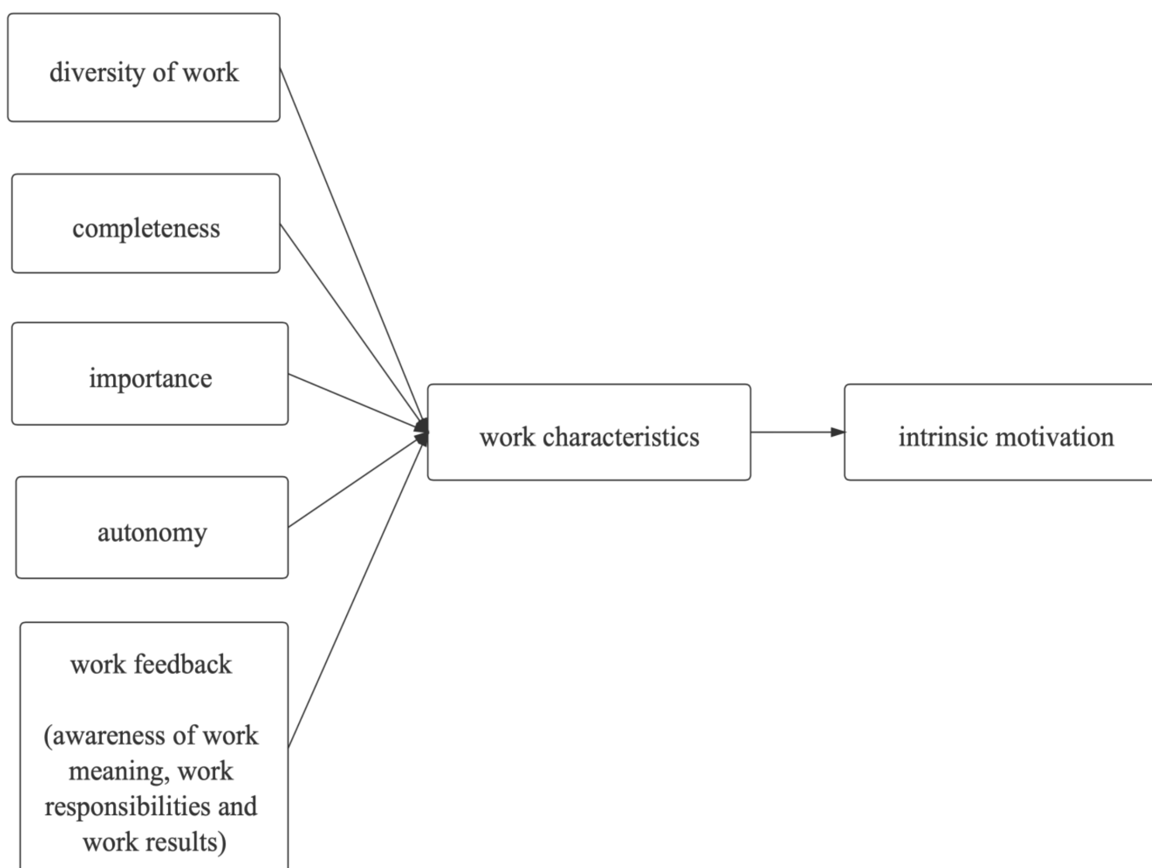

Figure 2.6 Hackman and Oldham (1980) five-dimensional model of work characteristics

JCM is widely used in the evaluation and measurement of job characteristics. When employees and tasks match, the job characteristics model can explain the job description and employee performance. Some of the work characteristics can stimulate employees' motivation, regulate their enthusiasm for work, and improve employees' job satisfaction through feedback, so it often serves as a management tool.

(4) Social characteristics

Scholars (Deci, Koestner, & Ryan, 2001; Peterson et al., 2003; Iyengar & De Voe, 2003) believed that social characteristics refer to family background, understanding of achievement,

internal needs and work experience, social atmosphere, local social development level, cultural model (social ideology, social culture, value shaping, work ethics) as shown in Figure 2.7.

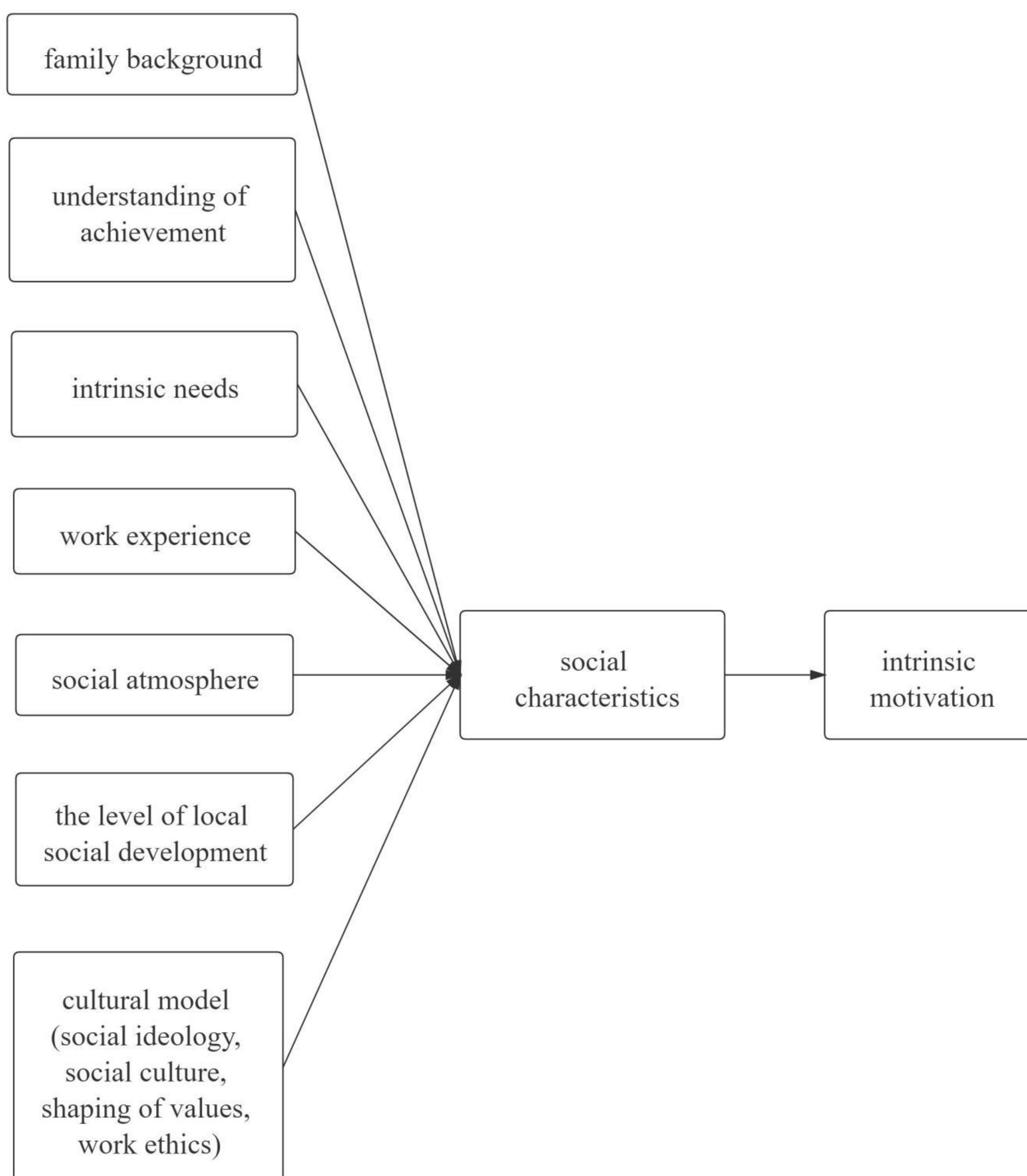

Figure 2.7 Social characteristics influencing factors

2.3.3 Results of intrinsic motivation

The results of intrinsic motivation are mainly in job performance, job satisfaction, organizational commitment, organizational citizenship behavior and creativity, and emotional commitment (identification commitment, internalization commitment) (Eby et al., 2011) as

shown in Figure 2.8.

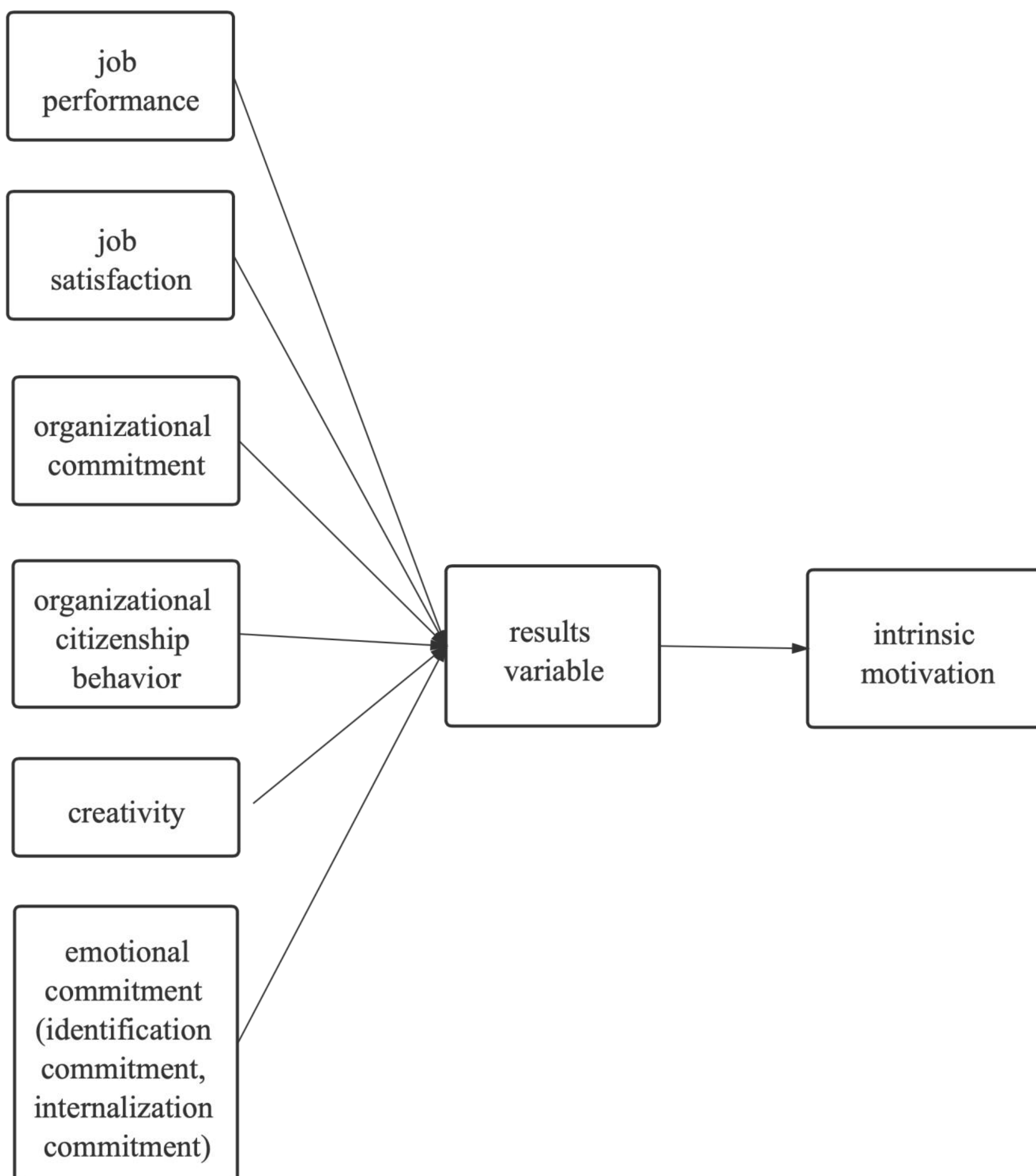

Figure 2.8 Intrinsic motivation outcome variables influencing factors

The current work motivation theory (Kanfer & Chen, 2016; Kanfer, Frese, & Johnson, 2017) believes that the research viewpoints are mainly divided into three aspects: (1) Motivation-based theory, emphasizing the reasons for motivation and action (2) Context-based work role Influence (3) Personal context (goal selection) and the self-regulation process of achieving goals (goal pursuit).

2.3.4 Self-determination

Self-determination theory believes that motivation is a process of practice from inside to outside, a process of personality growth and integration. In the process of perceiving external information, a motivational process of self-consciousness and self-determination is formed. These motives ultimately lead to human behavior. In self-determination theory, motivation is internal to external and consists of five parts: internal motivation, identity motivation, introverted motivation, external motivation and no motivation as shown in Figure 2.9 (Deci & Ryan, 1985a).

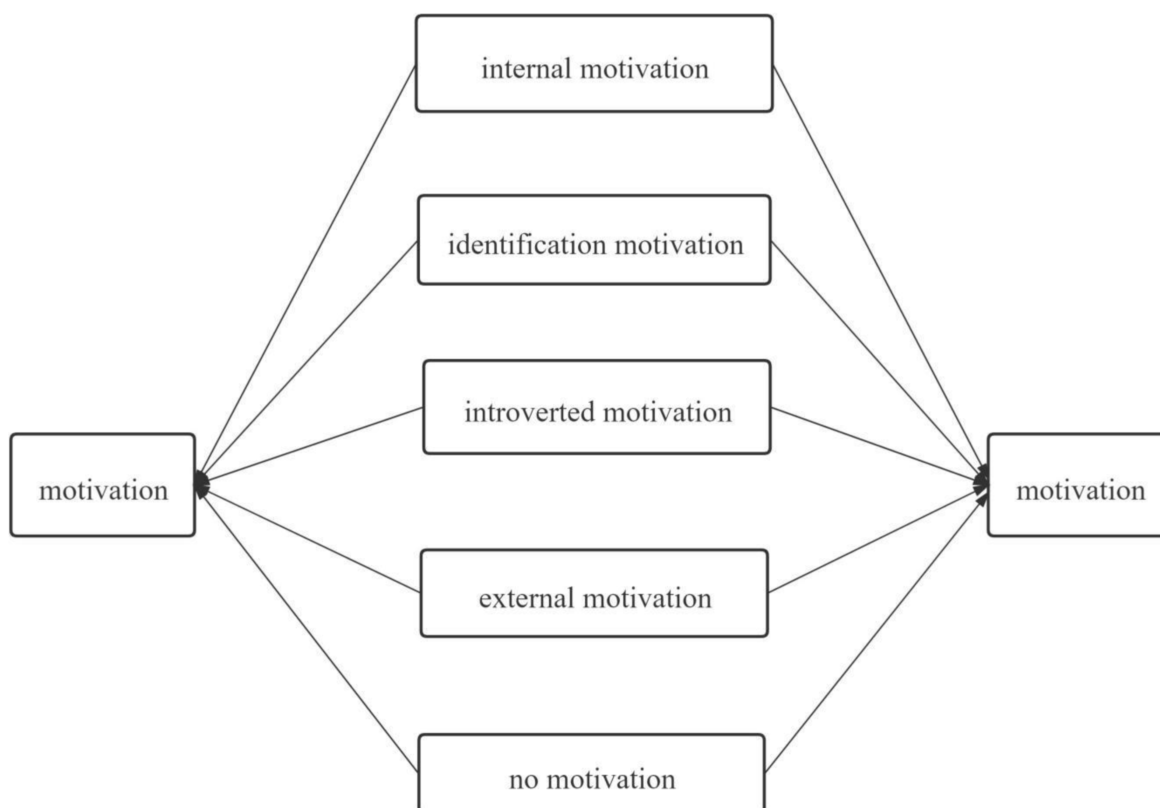

Figure 2.9 Five-dimensional structure of motivation

(1) Identification motivation

Identity motivation is the identity and sense of value that people have internalized and integrated into their work tasks and self. Common ones include value recognition, role recognition, and professional recognition as shown in Figure 2.10.

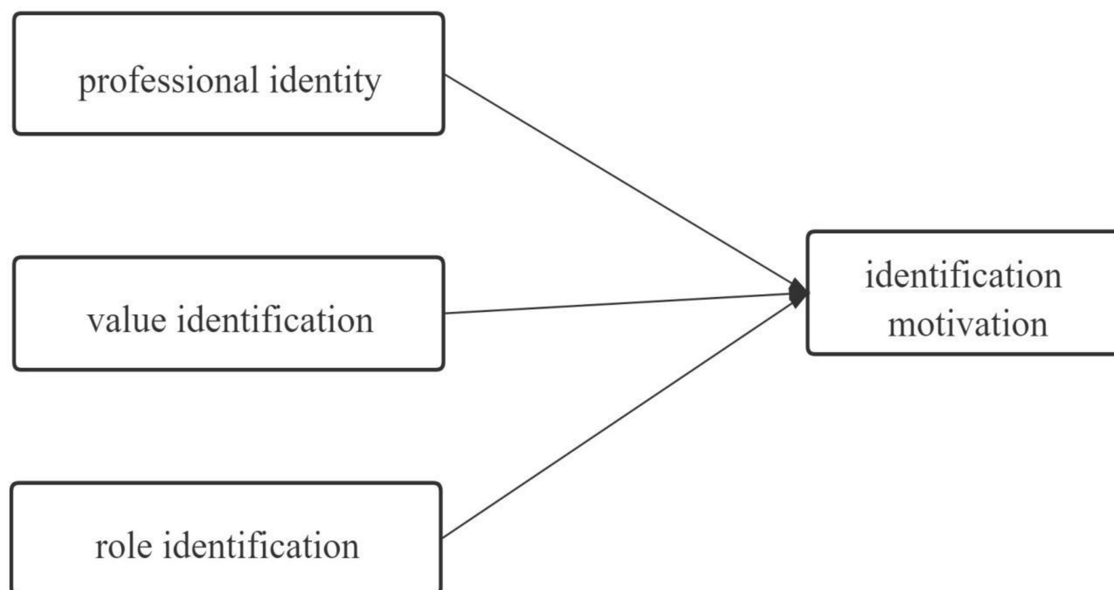

Figure 2.10 Identity motivation structure

(2) Value recognition

If the personal values and the organizational values are highly consistent, the individual will identify with the organizational values and internally guide their own behaviors, forming organizational commitments and psychological contracts as shown in Figure 2.11.

Li (2011) concluded by distributing 450 questionnaires that the degree of matching between personal and organizational values corresponds to the level of employee loyalty. Knowledge-based employee value recognition cannot only increase employee loyalty and work enthusiasm, but also increase organizational commitment and job satisfaction. It has a significant effect on improving employee retention in the hospital and reducing turnover rate (Ren, 2011).

Research has found that the satisfaction of employees' values is positively correlated with organizational commitment (Liu, 2016). Mao (2016) conducted a research on knowledge workers in the IT industry and found that the matching of employee values and corporate values can make employees have a strong sense of belonging and increase employees' recognition of their work.

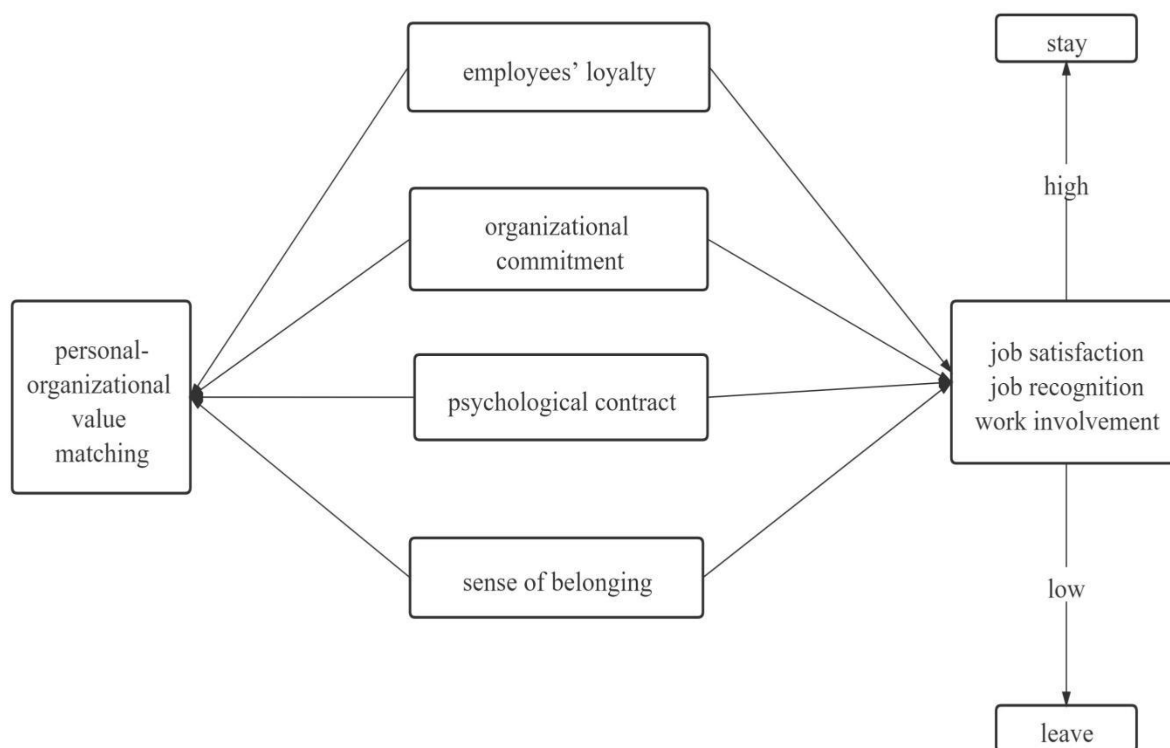

Figure 2.11 Value identification structure

(3) Role identification

Role identification refers to whether a person's role, attitudes and behaviors are consistent with oneself as shown in Figure 2.12.

Chinese scholars conducted a survey of 100 newly recruited nurses and found that new nurses have low job satisfaction and recognition. They believe that their contribution is not proportional to their income, their work is under pressure, and they cannot get positive feedback from the surrounding environment, so they do not agree with their roles and have low job satisfaction (Xiong, Yang, & Liu, 2020). In the process of China's reform of the medical reform system, doctors have different levels of identification dilemmas with regard to their own status, psychology and values.

Especially now that Chinese society is facing acute conflicts between doctors and patients, and the external environment in which doctors work is harsh. The doctor's identity crisis leads to job burnout and low job satisfaction. Role identification is not only the self-adjustment of doctors, but also the help and care of society and organizations (Liu, Lei, & Xiao, 2017). Wang (2018) conducted a sample survey of 212 doctors in Shaanxi Province, China. 81.2% of the doctors believed that the doctor-patient relationship was not harmonious, which caused the doctors to have a negative emotional experience and reduced their sense of identity.

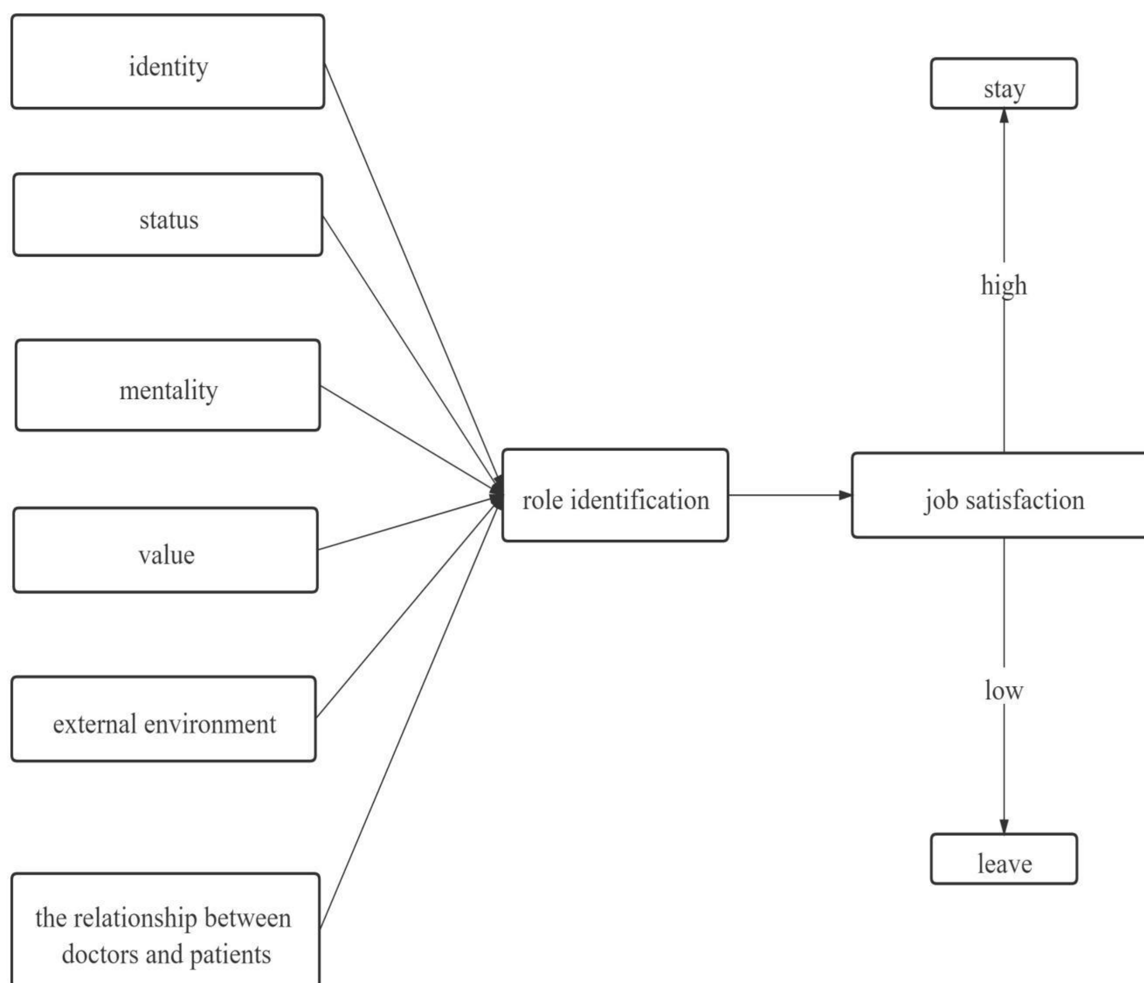

Figure 2.12 Role identification structure

(4) Professional identity

Relative to role identification, role is an individual's role to oneself, and occupation is relative to a certain field or profession. In other words, the degree of personal identification with the organization or group corresponds to professional satisfaction with its structure shown in Figure 2.13 (Hatfield, Cacioppo, & Rapson, 1993).

Yang et al. (2021) conducted a career satisfaction survey on 14 Anning care centers in Shanghai, China. The results showed that salary and benefits, career planning and development, role recognition, willingness to leave, colleague relations, and job satisfaction all affect career recognition, and have varying degrees of impact on career satisfaction. Yan, Yao, and Wu's (2021) survey results of medical intern students in hospitals from medical schools in Central China show that the positive role model of medical workers can improve the professional identity of medical students, and that professional identity is positively correlated with the perception of role model behavior Relationship. Li, Wang, and Gao (2021) conducted a survey

of 10 public hospitals in Shanghai, China, and found that medical workers have a high professional self-identity. And they have relatively low organizational and social identity. Organizational identity is highly correlated with external factors (respect, self-realization, professional identity).

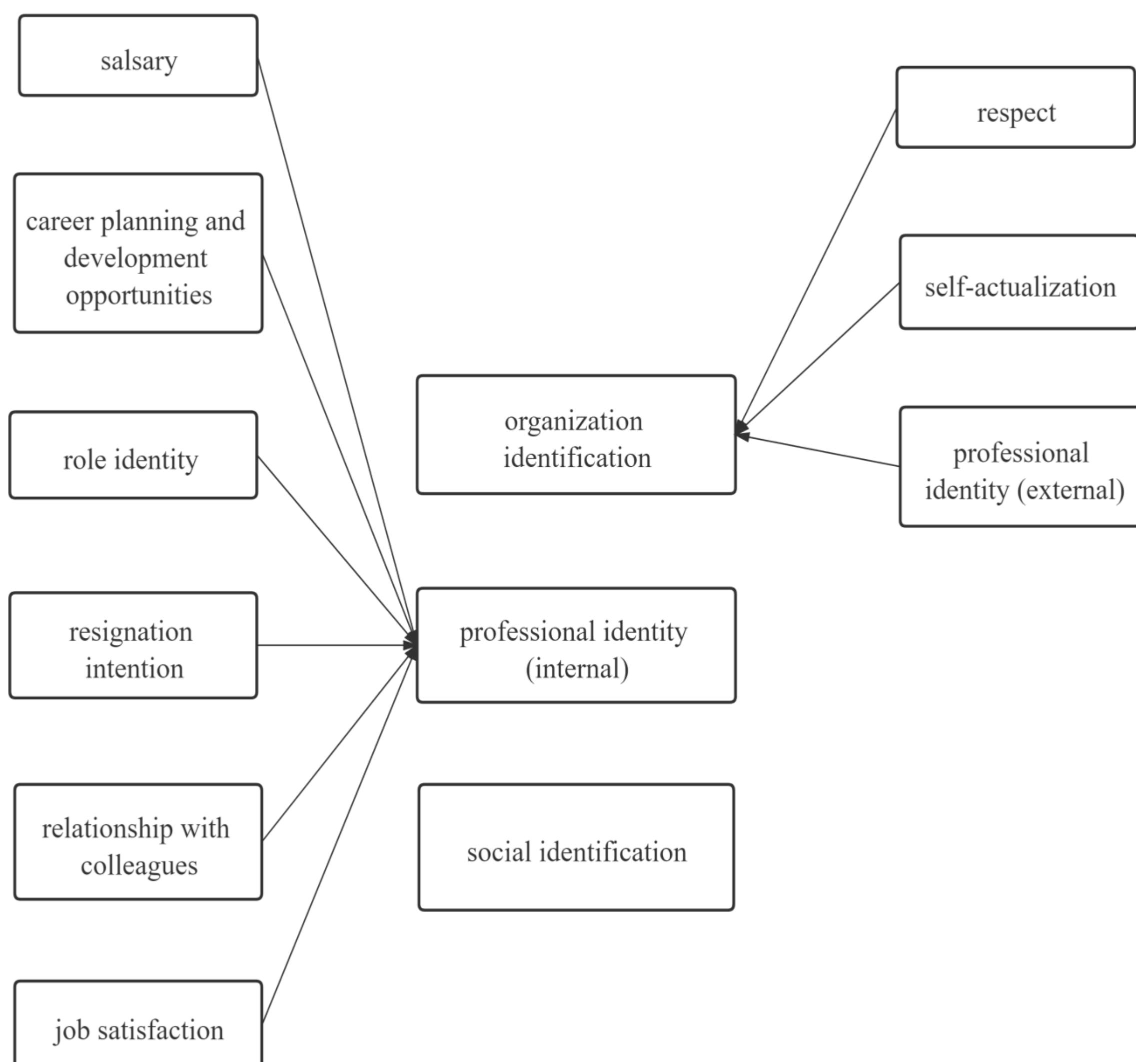

Figure 2.13 Professional identification structure

(5) Introverted motivation

Introverted motivation is mainly if the individual's behavior comes from psychological pressure, such as guilt or anxiety, depression, rather than the individual's autonomous emotions. Introverted motivation is the behavior that has to be taken because of the sense of control caused by the environment or external pressure with its structure shown in Figure 2.14 (Ryan & Deci, 2000).

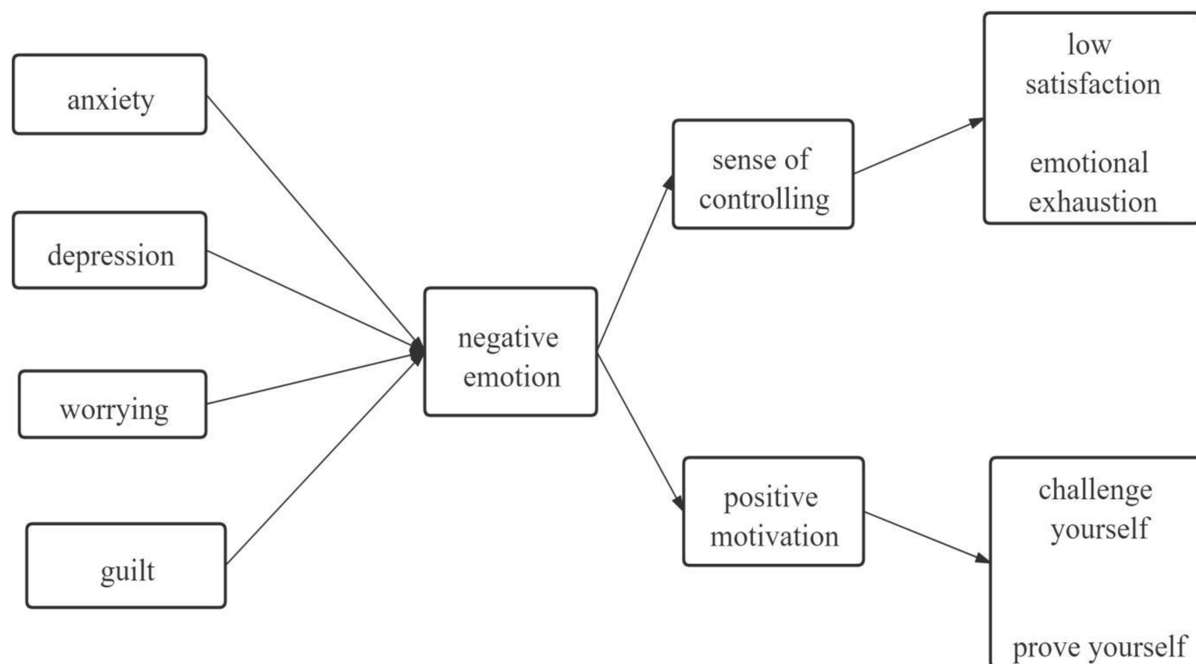

Figure 2.14 Introverted motivation theory structure

Introverted motivations are often divided into two types: positive emotions and negative emotions. Positive emotion is to challenge oneself and to generate internal pressure in order to prove oneself. Negative emotions come from the external environment, fierce social competition, organizational management requirements as shown in Figure 2.15. Negative emotions will cause medical staff to produce negative pressure and bad emotional experience. The nature of the work of medical staff is knowledge workers, so they need continuous learning and growth.

A qualitative study of pediatricians shows that the occupational pressure of medical staff often comes from introverted pressure, such as unskilled professional skills, career stagnation and inability to develop, and high pressure on pediatric nursing (Yin & Guo, 2020).

Chen et al. (2020) surveyed clinical medical staff in Chongqing, China. The results of the survey found that the stressful working environment and high work pressure caused medical staff to have bad emotional perception, which had a negative impact on job satisfaction. Huang et al. (2020) conducted a stress source survey on 23 doctors and 51 nurses in Nanning, Guangxi. The results show that because of the obvious gaps in the salary and benefits of training and examinations organized by the hospital, medical staff with different professional titles are under pressure, which leads to job burnout.

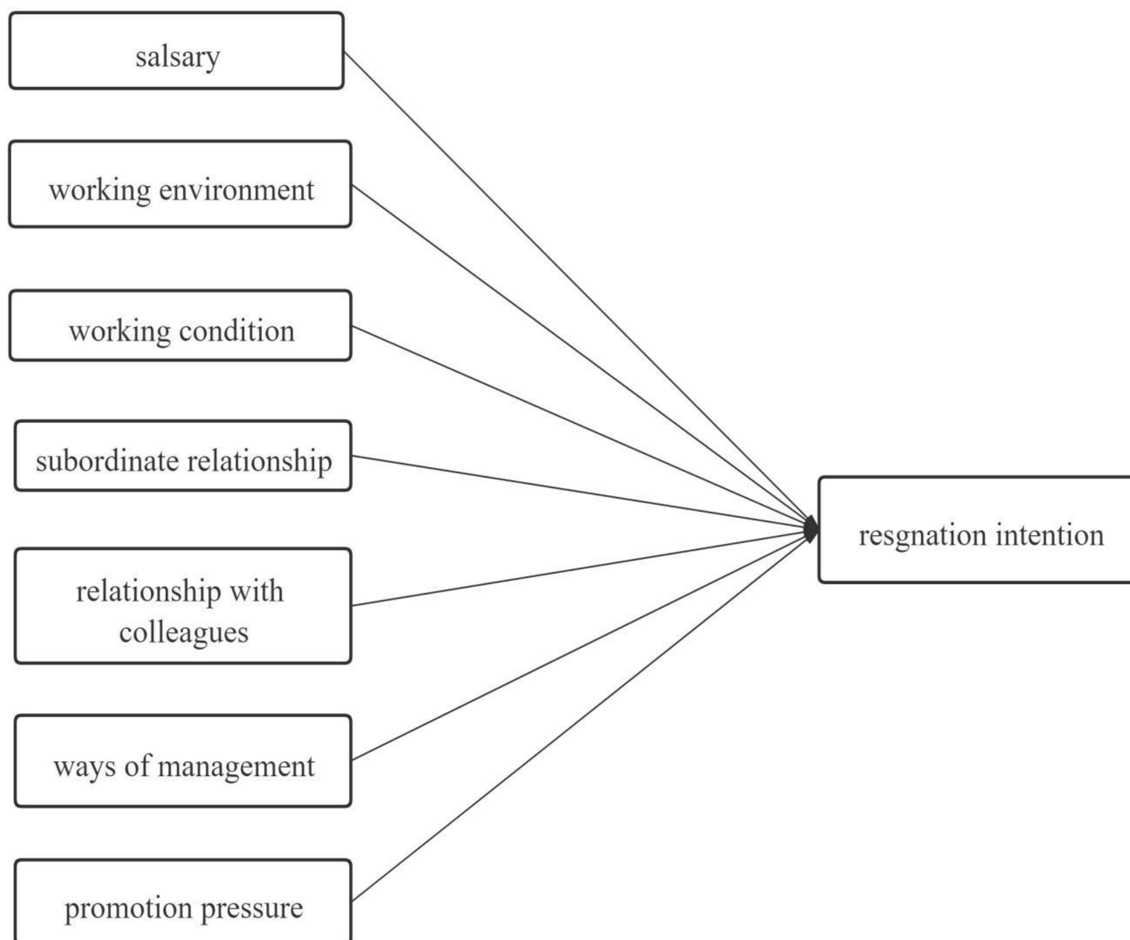

Figure 2.15 Structure of the influence of external motivation on turnover intention

(6) External motivation

Previous studies on medical staff mainly focused on external motivations, such as working conditions, working environment, job performance and salary, management systems, and so on. External motives are often materialism or organizational behavior, either through incentives created by material conditions, or pressure from the organization or the environment. The motives generated by these short-term behaviors will damage internal motives (Deci, Koestner & Ryan, 1999).

Li et al. (2021) conducted a survey of 198 rural health centers in 6 provinces and 12 counties in China. The results show that the level of wages and benefits is low, the salary structure is unreasonable, and the salary gap between medical staff at different levels is not obvious. Dissatisfaction with the salary and bonus distribution system is a key factor in the low satisfaction of medical staff (only 31.9%). In Li et al.'s (2020) research on the reasons for the turnover of personnel in a public hospital for five years from 2015 to 2019, it was found that

nursing staff accounted for a larger proportion of the turnover personnel. In addition, the majority of employees leave their jobs in the 18-35 age group, and the number of non-local household registration employees leave their jobs. The conclusion is that these people are more sensitive to external motives. Xu, Zhao, and Liang (2020) conducted a survey on the resignation intentions of 3226 medical staff with high professional titles in Xinjiang, China, and the results showed that 829 people had resignation intentions. Among them, promotion pressure, working environment, colleague relationship, superior-subordinate relationship, management style, etc. have an impact on turnover intention.

(7) No motivation

No motivation means lack of motivation, that is, purposeless behavior or no behavior at all. The lack of motivation is mainly because the individual feels that the behavior itself is meaningless, without self-efficacy, and worthless. In Taiwan and South Korea, unmotivated behavior has also appeared in the education process of students, which is the phenomenon that educators are least willing to see (Nie & Zhang, 2017).

In the process of this research, the main manifestation of unmotivated is the motivation of employment. When many medical staff talk about why they want to become doctors or nurses, it is often because of the choice of their parents or the needs of family labor for employment. The employment rate and stability of medical staff are the reasons that attract the elders of the interviewees to choose this industry. Individuals who follow this choice are partly due to the fact that their behavior is not autonomous and controlled, but after completing their studies in medical schools and starting this profession, they tend to be confused and become unmotivated at the beginning of their careers. They are at a loss as to how to choose in the future. The helplessness and confusion of newly recruited nurses is a manifestation of the unsuitability of most students entering the society. They deny their past and choices, and they cannot see the future. These learned helplessness, part of the characteristics is consistent with unmotivated behavior.

2.3.5 Motivation-based theory

Maslow's (1943) Hierarchy of Needs divided human needs into five tiers within a pyramid. From the bottom of the hierarchy upwards, the needs are physiological need, safety need, love and belonging need, esteem need, and self-actualization need.

Maslow (1943) thought that the primary work motivations are physiological need and safety need. After the two basic needs are met, people further pursue love and belonging need,

esteem need, and ultimately, self-actualization need. In the interview, we notice that medical workers' motivations for career choice include physiological need and safety need, as well as love and belonging need, esteem need, and self-actualization need. These needs are influencing factors of recruitment, retention, voluntary turnover, and high turnover rate.

In addition to work motivations, how to treat workers' work? McGregor and Cutcher-Gershenfeld (1960) considered that hypotheses about human nature and human acts are quite important to determine managers' working mode. Based on their hypotheses about human nature, all kinds of managers are able to use different ways to organize, control and motivate. For the purpose of better performance and higher work satisfaction of knowledge workers, organizations usually encourage workers through motivations. According to McGregor and Cutcher-Gershenfeld's (1960) argued Theory X and Theory Y, Theory X believes that none of the people like work and they may avoid work whenever possible. People are generally willing to be commanded and hope to escape responsibility. Theory Y believes that hypotheses about human nature are positive. It is assumed that human is kind by nature and people generally do not hate work by nature. Through patient and systematic guidance, employees can work fervently and try their most to complete production tasks even without strict supervision. Under proper conditions, in addition, people are generally willing to shoulder the responsibility and proactively seek a sense of responsibility. Under the hypotheses of Theory Y, managers' crucial task is to create a work environment where workers can play their talents and tap their potential and realize their goals when contributing to achieving organizational goals.

Hawthorne Experiment showed that workers' need to be accepted and liked by partners may be more important than economic incentives provided by organizations. Emery and Trist's (1960) research on coal miners also proves this phenomenon. In-hospital management, in both doctors' diagnosis and treatment teams and nurse teams, interpersonal relationship affects performance. Hawthorne Effect, which displays that workers work harder when they feel they are going to participate in the development of new projects or new technologies, illustrates not only the hypothesis of rational economic man but also motivations and hypotheses of social man

Love and belonging need should be met. Herzberg, Mausner, and Snyderman (1959) proposed Two-Factor Theory, which is also called Motivation-Hygiene Theory. According to this theory, firstly, even all needs are met, people's enthusiasm may not be motivated. Only by meeting the needs called motivation factors can we arouse people's enthusiasm. Secondly, not having hygiene factors will cause strong dissatisfaction, but hygiene factors do not always arouse enthusiasm. Thirdly, motivation factors are centred on work and mainly occur when

working. Hygiene factors refer to factors leading to workers' dissatisfaction. Motivation factors are factors that make workers satisfied.

During the management process, we need to make hypotheses about workers' motivations and human nature. What are the work motivations of knowledge workers? In-hospital management, it is found that incentives about knowledge workers' salary and welfare will become saturated to some level. In other words, when salary incentive reaches the threshold value, the effect of a greater investment may be unsatisfactory. This shows that salary mainly meets hygiene factors while motivation factors require incentives about interpersonal relationships, organizational culture and other intangible components. Therefore, in measuring work satisfaction, hygiene factors and motivation factors result in different positive and negative effects of retention intention and turnover intention.

In the 1980s, American scholars put forward Self-Determination Theory (Deci & Crittenden, 1980; Deci & Ryan, 1985a). Self-Determination Theory is about the process of psychological motivation. According to this theory, people' decisions about behaviours are based on the unconscious response from their own experience and are made after knowing their personal needs and environmental information. The theory emphasizes subjective initiative. In the motivational process, people should have self-determined behaviours. Intrinsic needs, self-motivation and emotional perception are the behavioural factors that influence self-determination motivations. According to the Self-Determination Theory, there are two kinds of motivational behaviours. The first kind refers to the behaviours that are chosen consciously to meet the intrinsic or extrinsic needs, that is, they are the self-determined behaviours. The other kind refers to those that are unconsciously chosen. They are unconscious or automatic behaviours that do not involve higher brain functions. Medical workers' motivations to leave or stay involve self-determined behaviours. If the experience of working in ethnic-minority areas satisfies the intrinsic or extrinsic needs of medical workers, they tend to stay on. Otherwise, they tend to resign.

Dweck (1986) and Higgins and Boone (1997) proposed to adopt promotion-focused or learning-oriented in order to achieve goals. This motivation runs through the early and mid-adult careers of medical staff. Payne, Youngcourt, and Beaubien's (2007) research showed that under the same conditions, employees with more prominent learning and achievement motivations are more inclined to be promoted as the centre of motivation, maintaining a high level of effort and persistence in their career goals.

Deci and Ryan's (1985a) self-determination theory pointed out that individuals make free choices for their actions, emphasizing the active role of the self in the process of motivation

and assuming a series of states of motivation. According to the life cycle theory, combined with the motivational theory of organizational psychology, it can be understood that the motivation of work changes with age. In the early adult years of their careers, young people focus on the process of learning new abilities, choosing a career, and adapting to work. In mid-adulthood, people's focus is on improving work experience, career development, and career stability (Bal, Kooij, & Rousseau, 2015).

Zhang (2019) believed that research on self-determination theory should pay more attention to the controlling characteristics in the work environment, such as destructive leadership, paternal leadership with Chinese cultural characteristics, and interpersonal relationships such as workplace exclusion and interpersonal conflict.

Work motivation is understood in organizational behaviour and management psychology as a strategy for motivating and stimulating internal driving forces. Therefore, it can be regarded as work motivation and knowing the strength of people's struggle for it. Therefore, many work motivation theories are regarded as motivation theories. Pan (2020) pointed out that tangible materialistic rewards often have a substantial negative impact on intrinsic motivation.

2.3.6 Motivation theories in situations (context-based work role influence)

The motivation of medical staff is often affected by the situation. The most famous theory in the field of situations is the work characteristic proposed by Hackman and Oldham (1976) that there are five dimensions of job characteristics, skill diversity, task integrity, task importance, autonomy, and feedback. These characteristics lead to the key mentality of employees: the meaning of the work, the responsibility for the results and the understanding of the results. For a long time, job characteristics have been regarded as an important determinant of job motivation. The five-dimensional model of job characteristics is basically consistent with the theory of self-determination, and both illustrate the influence of task and meaning of job characteristics on job motivation (Humphrey, Nahrgang, & Morgeson, 2007)

As hospitals' core human resources, medical workers need to experience a process from probation period/internship to regular workers and from immature workers to mature ones. During this process, various means need to be utilized to fully develop workers' potential. Hospitals need to establish a complete set of training and motivation systems, such as pre-job training and on-the-job study, as well as study and test of basic knowledge and operation. *Organizational Psychology* (Schein, 2009) noted that an organization was founded to realize a certain common and specified goal and to designedly coordinate some people's activities

through labour division, function division, authority and responsibility hierarchies. As a consequence, organizations, based on organizational needs, will divide and integrate the work of new employees and coordinate relevant work after the entry of the new employees.

Schein (2009) believed that there are two management strategies for the arrangement and effective use of human resources. The first is a proper worker for a proper post. The second is to re-design work and the physical environment. In the work process, hospitals, according to their needs for posts, usually recruit knowledge workers who conform to the hospital development and who possess suitable personal characteristics to the posts. This is in line with Schein's (2009) principle of person-post matching. During the management process, in the meantime, the hospitals often re-design work and physical environment based on changes in knowledge workers' career development to improve the efficiency of knowledge workers' career development. Therefore, the two strategies are not in conflict with each other.

2.3.7 Occupational motivation theory

Career motivation is the application of the Motivation Theory in the workplace (London, 1983). This concept was put forward based on the research of evaluation and tracking of manager performance in AT&T company. London believed that individual factors, including identity to the profession, personal perception, and decisions on career behaviours and goals, are the manifestation of career motivation. Doctors and nurses have a strong sense of honour in their professions, so career motivation plays an important role in their intention to stay. In the interview, the interviewees who have the motivation to leave, especially those who want to quit their jobs as doctors or nurses, tend to make a living or have stable jobs and lack the sense of mission and honour for their professions.

London's theoretical model (1983) of career motivation includes three parts: situational conditions, individual characteristics, and career decisions and behaviours. Individual factors include personality, the influence of past experiences, hobbies, and growth needs. Situational conditions refer to an individual's perception of a different environment, such as living environment, working environment, external social environment, and internal organizational environment. Career decisions affect career choices and career development plans. Buchan and Thompson (2008) pointed out that non-economic incentives include training and learning opportunities, vacations, supporting facilities, work intensity and workload, management methods, department autonomy and participation in decision-making, work autonomy, working conditions, living environment, career development opportunities and promotion, social

recognition, work-life balance, as shown. Providing housing for families and solving children's education issues are incentive measures (see Figure 2.16) from the perspective of professional motivation theory and based on the social environment, working conditions and personal characteristics.

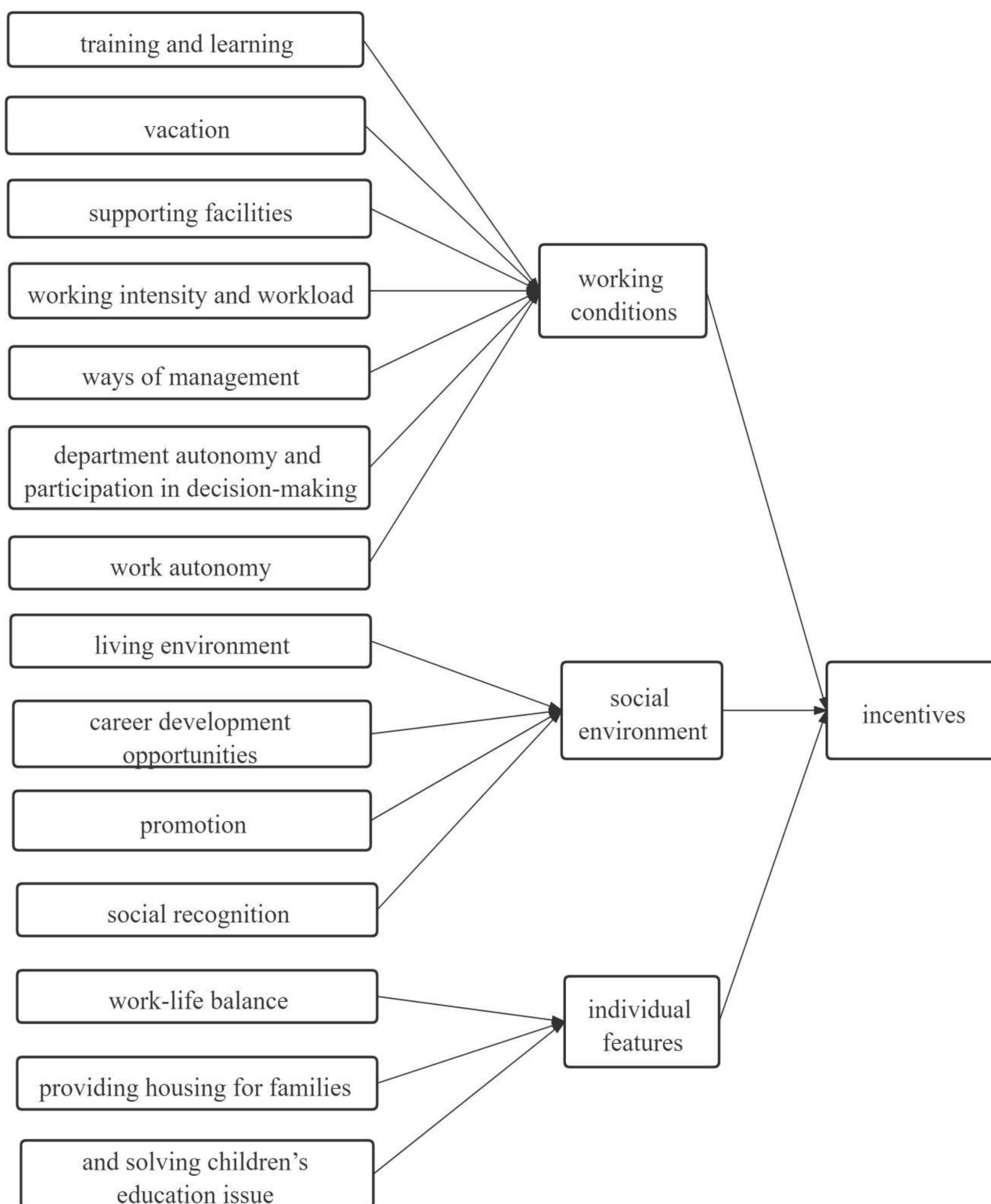

Figure 2.16 Incentive structure by Buchan and Thompson (2008)

2.3.8 Process motivation theory

The process-based motivation or incentive theory mainly focuses on the psychological process of the individual from the generation of motivation to the implementation of behaviour and mainly studies and interprets the influencing factors of behaviour choice, behaviour direction and motivation level.

Work motivation theory emphasizes the importance of cognitive-affective state, and expected value theory (Vroom, 1964) is used to predict goal selection and motivation. By satisfying the motivation of autonomy, ability and belonging, has an impact on the motivation of work. The process-based motivation theory is to explain how people need to cause motivation, and motivation triggers behaviour, goal guides behaviour, and ultimately the process of achieving goals. Vroom's (1964) expectation theory, Adams' fairness theory (1965), and Emerson's social exchange theory (1976) are all. It is a process-based motivational theory.

In addition to needing motivations and love and belonging need, how to arouse knowledge workers' enthusiasm? Vroom (1964), a prestigious North American psychologist and behavioural scientist, proposed Expectancy Theory. In order to encourage workers, workers must understand that work can provide what they really need; what they pursue is related to performance; they can improve performance as long as they work hard. Vroom (1964) proposed the human expectancy mode: individual efforts → individual results (performance) → organizational rewards (remuneration) → individual needs.

In ethnic minority areas, however, researchers found that even performance plans have been formulated, it is easy to have negative effects caused by unfair organizational distribution because, in setting hospitals' performance standards, it is uneasy about quantifying performance indicators as it is in industrial production lines. In establishing motivation systems, as a result, fairness should be taken into consideration. This involves Equity Theory, or Social Comparison Theory, which was elaborated by Adams and Rosenbaum (1962), Adams and Jacobsen (1964), and Adams (1965). This theory places particular emphasis on the research of wage distribution's rationality and unfairness and its effects on workers' production enthusiasm and points out that workers' motivation degree sources from the subjective comparison of wage and input between themselves and referents. Fairness implies that the ratio of their returns and efforts is equal or nearly equal to that of the referents.

Social Exchange Theory has been put forward and improved by Homans (1958), Blau (1964), and Emerson (1976). Standing in an economic perspective, the theory evolved from the idea of reciprocal exchange.

The exchange relationship is the exchange between costs and rewards. The costs can be tangible or intangible. The goals of the exchange relationship are to maximize rewards and minimize costs.

Whether in China or abroad, the cost of training and education of medical staff is high and the cycle is long, and it takes a lot of money and time. Therefore, the weighing between cost and return of medical staff in their careers is a reflection of this theory.

First of all, the exchange is a social behaviour, and it should pursue the greatest rewards and lowest costs. Practical feedback should be given in the process of obtaining rewards. In this process, both organizational commitment and psychological contract embody social exchange. The relationship between employees and the organization is also an exchange relationship. Organizational commitment, psychological contract, salary, training and learning opportunities, and organizational culture all affect social exchange. Social exchange is not only the contractual relationship in human resource management but also the embodiment of professional ethics and code of conduct (Coleman, 1990; Zaheer & Venkatraman, 1995). Organizational commitment to employees is based on trust and reciprocity. Employees' sense of reciprocity in the exchange process affects their productivity and loyalty to the organization (Wasko & Faraj, 2005). Expected reciprocity has a significant impact on individuals' attitudes towards their tasks, performance and behaviours (Bock et al., 2005). Therefore, it is feasible and referential to use Social Exchange Theory to discuss the influencing factors of medics' retention intention. There is a psychological contract between the medical workers and the hospital, and the reciprocal relationship between the two may make the medical workers choose to stay. However, if the reciprocal relationship is damaged and the contract is broken, the medical workers may be inclined to resign.

2.3.9 Self-determination and motivation of life cycle development

In addition to analyzing work motivation from the perspectives of motivation, context and process, although previous studies have different views, they have reached a consensus on the key determinants of continuous resource allocation or work motivation: (1) personal goals, (2) personal A sense of self-efficacy that can achieve the desired goal. For example, Dweck (1986) and Higgins and Boone (1997) proposed that work objectives can be explained from the perspective of method or avoidance or protection as shown in Figure 2.17.

They adopt a goal-oriented approach and results showed that promotion-oriented or learning-oriented, usually related to higher levels of motivation, learning and performance. In

contrast, adopting avoidance, prevention-centric, or performance-proven directions has often been shown to have an adverse effect on motivation and its results (Payne, Youngcourt, & Beaubien, 2007).

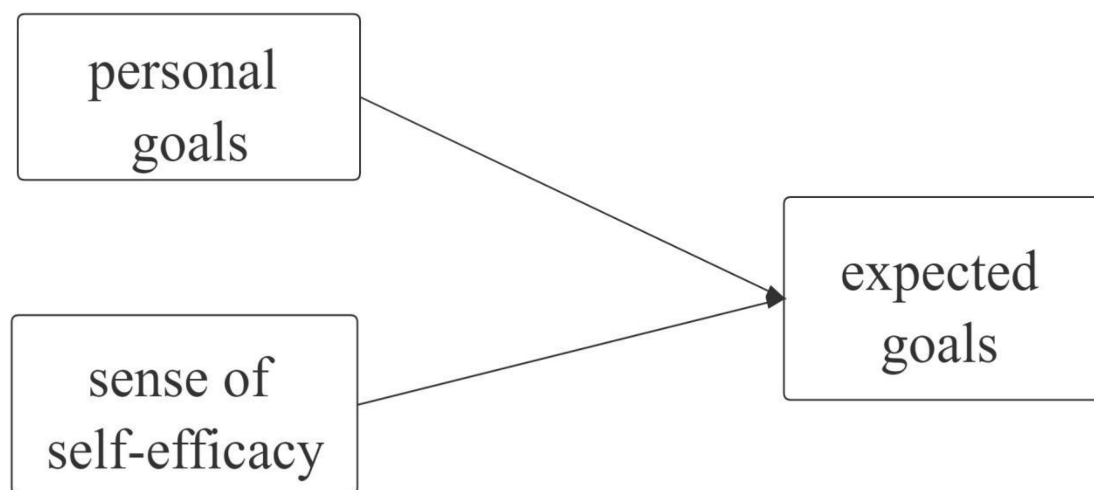

Figure 2.17 Structure diagram of key determinants of work objectives proposed by Dweck (1986) and Higgins (1997)

The life cycle development theory believes that life cycle incentives and work results are related to and change with age. Bandura’s (1977) considered mutual determinism considers the comprehensive influence of emotion, behaviour and cognition on the transformation of work motivation in the life cycle.

Baltes and Baltes (1993) proposed that the basic principle of selecting, optimizing and compensating models is that the target focus changes with age. People who face the exhaustion of resources such as time and energy in the later stages of adulthood will adjust resource allocation according to their own goals. Fewer resources are allocated to growth or even stop growth, while more resources are used to maintain, restore and regulate losses (Baltes, Staudinger, & Lindenberger 1999).

Socio-emotional choice theory (Carstensen, 1995) proposed that young people will prioritize instrumental goals to maximize future results. In the early stages of growth, medical staff will pay more attention to how to obtain knowledge and information, and in the later stages of adulthood, they will give priority to the goal of maximizing the current emotional results and feeling positive emotional experiences and goals.

The life cycle development motivation theory of Heckhausen, Wrosch, and Schulz (2010) assumed that people will adopt a two-level control strategy in order to maintain a high level of control. The main control mainly shapes the environment that meets their needs. When the

primary control strategy cannot be achieved, the secondary control strategy will be adopted (Heckhausen & Schulz, 1995). In the later stages of adulthood, middle-aged and elderly people face resource depletion. They will use more secondary control strategies, such as target adjustment, getting rid of unachievable goals, and re-participate in new or adjusted goals that can still be achieved. The motivational theory of life-long development can identify challenges with different motivations for career development and work life cycle.

Life psychology theory believes that age factors affect self-efficacy (Kanfer & Ackerman, 2004; Kooij et al., 2008). Physical health and intellectual loss may have a negative impact on self-efficacy at work (Fisher et al., 2017). Similarly, people think that they are not likely to achieve their goals at their age, and psychosocial age may harm work self-efficacy (Kooij et al., 2008). Maurer (2001) argued that the self-efficacy of career-related learning and skill development decreases with age. Older employees may think that certain key competencies required for learning will decline with age (Salthouse, 2012). Older employees find it difficult to promote or develop opportunities, reduce self-efficacy, and lose the motivation to pursue work goals. In a qualitative study on the recruitment and retention of medical personnel in rural Australia, Cosgrave (2020b) considered that age and career development have a significant impact on recruitment and retention.

2.4 Organizational commitment

People within an organization not only work for the organization but also become part of it. After employees sign the contract to enter the post, the hospital will provide pre-job training to let them know about their duties as well as the system and policies of the hospital. Besides, benefits on leave, performance and others in the welfare systems formulated by the hospital indicate the commitment of the hospital (the organization) to employees. At the same time, after being socialized by the organization, staff have experienced obedience, recognition, and internalization and have formed organizational commitment with the hospital.

Organizational commitment is the main manifestation of the professional attitude of organization members, which includes employees' behaviours within the organization, such as self-discipline at work, loyalty, satisfaction, job performance, and interpersonal relationship. A team with high organizational commitment can help improve the core competitiveness of the organization, which is of great significance to the future development of the organization (Wang, 2008).

Whyte (1956) mentioned that employees in an organization are members of the

organization, not just the labourers. Organizational commitment is an influential factor of work motivation and behaviour tendency within an organization. It is also a psychological contract that employees are willing to stay in the organization. Becker (1960) thought that with the growth of time and feelings, the strength of such a contract will gradually increase. Mobley et al. (1979) pointed out organizational commitment can serve as employees' acceptance and identification of the values and goals of the organization and transform into the driving force of the employees so that they are willing to keep contributing their energy to the organization. Wiener (1982) argued that organizational commitment results from the organizational culture and features a process in which employees identify and accept the visions and values of the organization and internalize them into their own values.

Organizational commitment is a key element in understanding employee work behaviours within the organization. Becker (1960) first proposed the concept of organizational commitment. It refers to the psychological phenomenon that employees wish to stay in the organization with the increase of their time, energy, and affection for the organization, and it is the psychological contract that encourages employees to continue their work behaviours (Schein, 2009). According to the concept of organizational psychology (Schein, 2009), the staff of Argyris have subjective initiative and can manage themselves. When the pressure of work and unemployment increases and the quality of work and life decreases, employees will have serious psychological pressure and choose to resign, which will affect the development of the organization. Because employee satisfaction and engagement affect organization performance, this situation will harm the development of the enterprise.

Organizational commitment is not only the psychological contract between employees and the organization but also the mediating variable of job satisfaction. Many factors are influencing the establishment and breakdown of the psychological contract between an organization and knowledge-based employees. The empirical study of Robinson, Kraatz, and Rousseau (1994) showed that employees believe that the obligations of an organization mainly fall into seven aspects: enriched work, fair salaries, opportunities for growth, promotion, adequate tools and resources, supportive work environment and attractive benefits; they also believe that their obligations mainly focus on eight aspects: loyalty to the organization, working overtime, volunteering to do extra work, accepting job transfer, refusing to support competitors, keeping secrets for the organization, informing before leaving, and working in the organization for at least two years. That an organization fails to meet employees' expectations in its obligations will directly result in a decline in incentive effect, job satisfaction, and employees' loyalty to the organization, which further boosts the employees' intention to leave (Robinson, Kraatz, &

Rousseau, 1994).

Chinese scholar Guo (2018) put forward three-dimensional variables of organizational commitment, among which emotional commitment and continuous commitment have obvious negative effects on turnover intention. Zhang, Fang, and Ling (2000) believed that the organizational commitment structure in the Chinese context may be inconsistent with that of the West. Therefore, on the basis of emotional commitment, normative commitment, and opportunity commitment, two dimensions of ideal commitment and economic commitment have been added.

2.5 Intention to leave

Price proposed resignation as the behaviour of resignation after employees join the organization, and their motives and interactions cannot match each other. Resignation refers to the movement of workers from inside the organization to outside the organization (Price, 1977). Mobley et al. (1979) defined resignation as the process by which individuals who receive material benefits from the organization terminate their membership of the organization. This research focuses on the narrow concept of resignation. Resignation is divided into voluntary resignation and involuntary resignation. This research focuses on voluntary and active resignation.

2.5.1 Resignation intention

Porter and Steers (1973) pointed out that when employees are dissatisfied, they will have a mental state of resignation tendency. Miller, Katerberg, and Hulin (1979) thought that resignation intention is a combination of the intention to leave and the tendency to find other job opportunities.

Zheng and Zhu (2007) defined resignation intention as an employee’s psychological tendency to leave the existing unit or job position. It is a behavioural tendency that may trigger resignation. Zhou (2008) defined resignation intention as the employee’s idea and tendency to leave or change jobs in a certain period of time.

Xu (2009) divided them into two categories: direct driving factors and cognitive regulating factors. The direct driving factors include salaries, the matching degree between employees and the organization, costs of changing jobs, employment opportunities in the labour market, job satisfaction, and organizational commitment. Among them, job satisfaction and organizational commitment are the mediating variables between the resignation intention and salaries and the matching degree between employees and the organization. Cognitive regulating factors include

work experience, relevant benefits, resignation conformity, and psychological account effect, and cognitive variables play a moderating role in the formation of the flow of knowledge-based employees. Besides, the scholar also found that different ages, educational backgrounds, and working years may differently affect the resignation intention of such kinds of employees.

Wei (2009) took 71 high-tech enterprises in Jiangsu province as samples and classified the influencing factors of the resignation intention of knowledge-based employees into organizational factors and personal characteristics factors. Organizational factors include compensation and benefits, fairness, interpersonal relationship, sense of fulfilment at work, organizational commitment, the openness of organizational culture, personnel information communication, and promotion opportunities. In contrast, personal characteristics include gender, age, marriage, education background, position, continuous length of the time employed, number of resignations and working hours.

Guo (2018) argued that the willingness to leave is an idea that has not worked. Under the long-term effect of the organizational environment, dissatisfaction or even the attitude of wanting to leave is generated, which can be used to predict turnover behaviour. Chinese studies on resignation take the willingness to resign as the dependent variable. Many factors will affect the resignation intention of knowledge-based employees. Many scholars in and outside China have classified these factors.

2.5.2 Personal factors (age, family, educational background) and resignation intention

Zeffane (1994) divided the influential factors into four dimensions: external factors, individual characteristics, institutional factors, and employees' response to work.

Arnold and Feldman (1982) proposed that most studies related to resignation believe that demographic variables (age, marriage and length of the time employed) and work attitudes (job satisfaction and organizational commitment) could be used to predict whether an employee tends to leave the organization. Igbaria and Greenhaus (1992) pointed out that age, gender, education background and tenure can be used to predict employees' intention to leave. The research of Somers (1996) also showed that age, education background and length of the time employed have indirect influences. Young, inexperienced, highly educated employees who have lower job satisfaction and weaker organizational commitment will be more likely to quit their jobs.

Iverson (1999) believed that the greater the individual's family responsibilities are (for example, a single father or mother and the main source of family income), the less likely s/he

will quit the job. Iverson (1999) also found an interaction between age and family relationships and pointed out that for employees over 30, their family responsibilities are an important factor preventing them from leaving the companies they are working with.

2.5.3 Organizational commitment and resignation intention

Personal factors include demographic variables, psychological variables such as job satisfaction and organizational commitment, and individual characteristics. Becker (1960) researched that when employees became more committed to the company, their organizational commitment will be strengthened over time, and thus the turnover rate will be lower. The empirical study of Kraut (1975) showed that there was a significant negative correlation between employees' intention to stay, organizational commitment and the turnover rate. Kraut (1975) found in an empirical study that organizational commitment was a better predictor of employees' intention to leave than job satisfaction. Morris and Sherman (1981) discovered that organizational commitment could be used to predict employees' performance and resignation behaviours. Also, the empirical study of Michaels and Spector (1982) showed that organizational commitment has a negative impact on the turnover rate. Quarles (1994) found that organizational commitment and job satisfaction have a negative impact on employees' resignation intention. Research on Igbaria and Greenhaus (1992) also confirmed this and pointed out that other variables are mostly acted on by these two attitude variables.

2.5.4 Emotional commitment and resignation intention

The turnover of employees will bring losses to the enterprises and increase the cost of the enterprises. The direct cost is obvious. However, indirect costs are hidden and not easy to be spotted, such as emotional infection after the resignation of any one of the employees (Charles, 1999). Therefore, the turnover rate and the turnover rate of talents should be considered in the process of human resource planning.

Wang, Wang, and Wang (2000) found that when the individual's achievement needs are high, the relationship between the feeling of over-qualification and the willingness to leave is stronger; when the individual's achievement needs are low, the feeling of over-qualification and resignation The relationship between wills is weak. Yuan, Wang, and Chen (2007) thought that emotional commitment has the most significant impact on turnover intention, and Li and Li (2019) believed that job recognition, work pressure and salary are significantly related to turnover intention. Huangfu (2020) collected data of emergency nurses in Changchun, which

indicated that psychological toughness and work stress are important factors affecting nurses' turnover.

2.5.5 Job satisfaction and resignation intention

Job satisfaction was first proposed by Hoppock and Spiegler (1935). Hoppock and Spiegler's (1935) view is that job satisfaction is the satisfaction and experience of environmental factors in both physical and mental aspects.

Mobley, Horner, and Hollingsworth (1978) believed that there is a progressive relationship between low satisfaction and resignation intention, and the latter is the behavioural tendency after psychological motivations such as resignation intention, and it indicates the final process of resignation behaviour. Also, Wang, Lu, and Chen (1998) proposed that resignation intention is a combination of various factors such as low job satisfaction, motivation and process. Sager et al. (1998) believed that resignation intention can be a predictor of resignation behaviour.

In addition, Lee (2000), through his research on computer science professionals, proposed that personal needs for growth, challenges and sense of achievement interact with job satisfaction, and they jointly determine the employees' resignation intention. This not only provides a new variable to explain employees' intention to leave but also implies that employees in the computer science industry still tend to quit their jobs even they are satisfied with them. Li (2019) analyzed the analysis turnover intention of clinical nurses in three tertiary hospitals in Jilin and the results showed that job satisfaction and social support are significantly negatively correlated with turnover. Peng's (2020) research has shown that job satisfaction is an important antecedent variable of nurses' turnover intention, and there is a negative correlation between career commitment and turnover intention. The higher the job satisfaction, the lower the willingness to leave.

The measurement dimensions of job satisfaction have a single dimension as well as multiple dimensions. The single dimension is to measure whether employees are satisfied with their work, whether they like their current position and work, etc. The multi-dimensional job satisfaction measurement includes working conditions, working environment, and working atmosphere. Common divisions are endogenous job satisfaction and exogenous job satisfaction.

Intrinsic job satisfaction refers to how employees feel about their work tasks, and exogenous job satisfaction refers to their perceptions of various external work situations (Herzberg, Mausner, & Snyderman, 1959).

The components of endogenous satisfaction are a sense of accomplishment, recognition of

others, own work tasks, understanding of work responsibilities and meaning, personal achievement and development as shown in Figure 2.18. This is consistent with the five elements of the working characteristics of the job characteristic model (JCM).

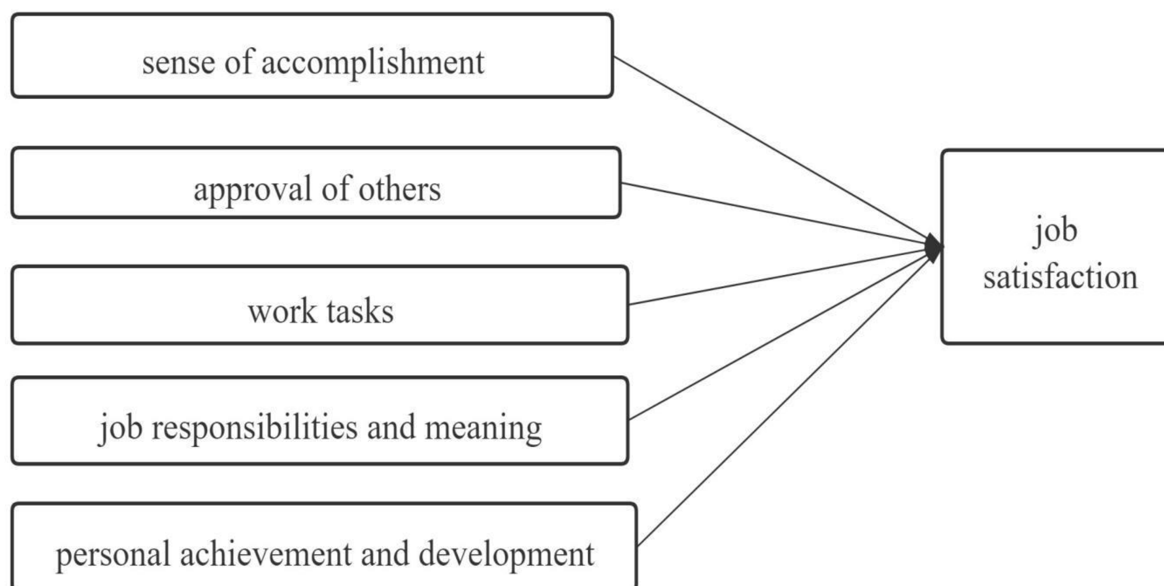

Figure 2.18 Structure of endogenous job satisfaction proposed by Herzberg, Mausner, and Snyderman (1959)

Exogenous job satisfaction includes management methods, superior guidance, interpersonal relationships, working conditions, salary, workplace, and occupational safety as shown in Figure 2.19.

Zhang and Han (2007) pointed out in their study on resignation factors that personal, organizational and environmental factors will affect employees' intention to leave.

Both Chinese and Western scholars agree that studying turnover intention is more meaningful than studying turnover behaviour. Although the turnover intention is only an antecedent variable of turnover, it can provide accurate predictions of turnover behaviour. It is the last stage of the employee's idea of leaving and trying to find another job. It has a high reference value for predicting turnover behaviour. Therefore, it can provide good help for managers to make decisions (Cai, 2000).

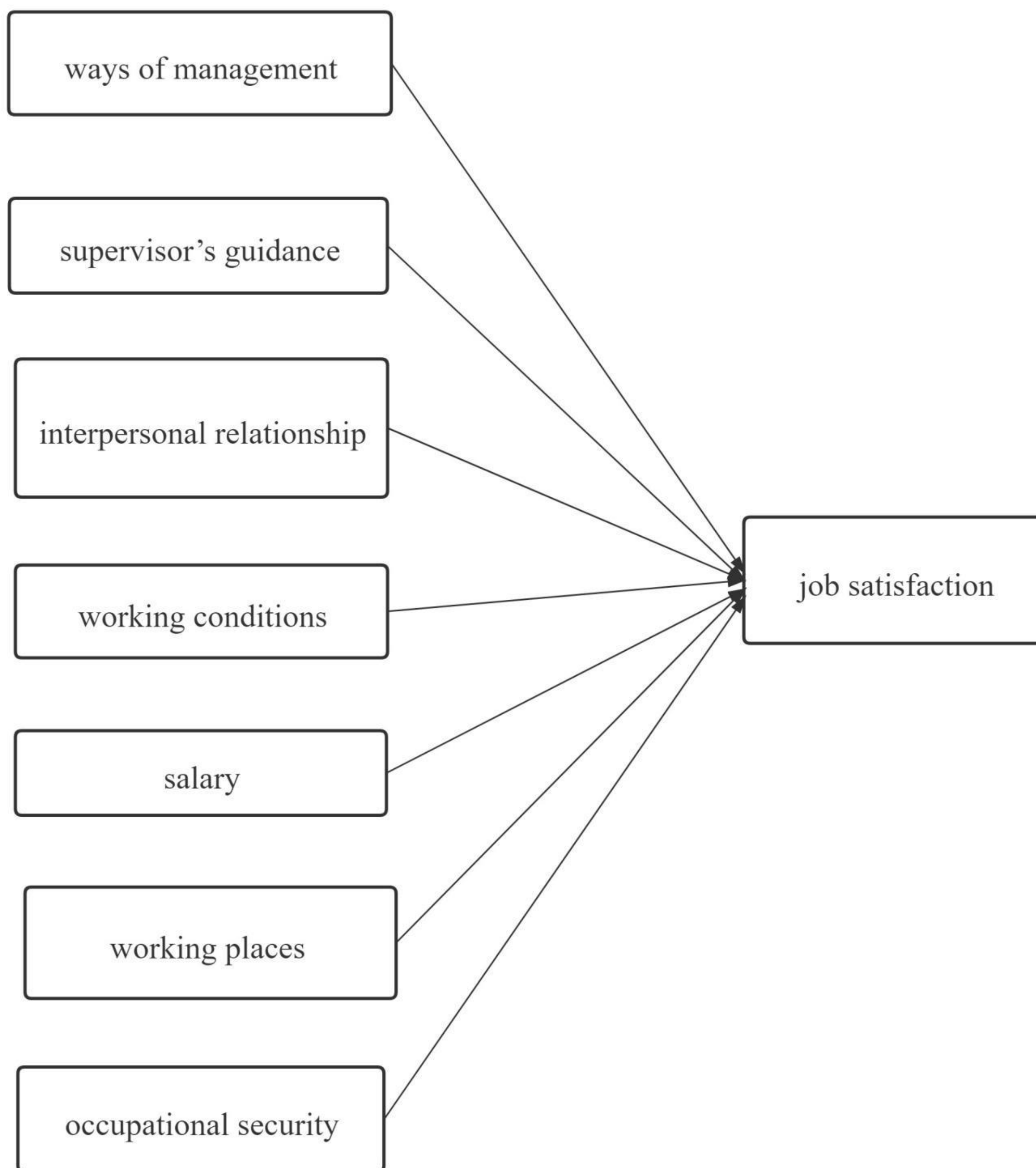

Figure 2.19 Structure of exogenous job satisfaction proposed by Herzberg, Mausner, and Snyderman (1959)

2.6 Willingness to stay

2.6.1 The concept of retention

According to the literature review, the current domestic and foreign research on willingness to leave is mainly based on the relative relationship between job satisfaction and turnover intention, and the research on motivation based on psychology is relatively insufficient. Willingness is a

psychological concept. From the individual's perspective, it is the individual's will that determines the individual's behaviour, the change of the mental state, and the intrinsic motivation. From the perspective of organizational behaviour, it is the external motivation of the individual to decide whether to act in the organization.

Tett and Meyer (1993) thought that the willingness to stay is an employee's decision to stay in the company after being aware of and after careful consideration. Ke (2007) argued that the willingness to leave is used as the opposite of turnover tendency for research in a certain sense.

2.6.2 Foreign studies of the factors of retention intention

(1) Organizational factors

Sheridan (1992) proposed that organizational culture can affect employee retention, and it is positively correlated. Iverson and Roy (1994) pointed out that attitudinal commitment (organizational commitment), physical condition and job security increase employees' willingness to stay, while work hazards reduce willingness to stay. Mak and Soekel (2001) used employees' organizational commitment, job burnout and turnover intention to measure the willingness of employees. Employees with lower organizational commitment, severe job burnout and high turnover intention will have less willingness to leave. Organizational and personal factors influence employees' willingness to stay (Birt, Wallis & Winternitz,2004). The factors that influence the core employees' willingness to stay include training opportunities, self-development conditions, managers' impressions and the significance and challenges of work.

Buchan (2010) thought that factors such as salary, career development and job satisfaction interact with each other to influence the willingness to stay. Warburton et al. (2014) believed that the organization's concern, the support of colleagues, and the flexibility of work improve the retention rate of elderly rural medical staff. Research by Cosgrave (2020a) in Australia found that workplaces, career development, and learning opportunities all have a positive effect on the retention and recruitment of health workers. Cosgrave (2020a) proposed that strengthening work and improving personal satisfaction in the three domains of workplace/organization, role and occupation, and community or place can increase the retention rate of rural health workers. Arora (2017) believed that addressing the living and working environment can increase the retention rate of doctors in the most needed and underserved areas.

(2) Interpersonal factors

Cowden, Cummings, and Profetto-McGrath (2011) found that if employees respect and

recognize the management style of their superiors, recognize the authorization from their superiors, and receive desirable support from their organizations, they will be more willing to stay. Curtis, Hefley, and Miller (2011) held that the influencing factors consist of the perception of the performance system and employees' participation in management. Research by Cosgrave (2020a) in Australia pointed out that community connections, community participation and satisfaction can be the social determinants of rural labour retention.

(3) Job or occupation characteristics

Mone (1994) pointed out that caring about employees' career development can reduce work pressure and increase their willingness to stay. Kuto et al. (2006) pointed out that a good working environment increases the willingness to stay. The study of Hytter (2007) demenstrated that under the guidance of the people-oriented concept, the subjectivity of individuals in thinking and behaviours, as well as the sense of control over work, have a significant impact on the employees' willingness to stay. In terms of personal characteristics, the study showed that age, marriage and gender can also influence employees' willingness to stay and that unmarried and male employees are less likely to stay (Hrebiniak, 1972; Rose & Gordon, 2010). Arora (2017) believed that the Thai government has adopted a strategy of improving a friendly working environment in rural areas with insufficient labour, which has improved the retention rate in remote and rural areas. Cosgrave, Malatzky and Gillespie, (2019) conducted a study on medical personnel in rural and remote areas of Australia, and the results showed that fulfilling life aspirations have an important impact on staying in hospitals.

2.6.3 Chinese studies of the factors of retention intention

(1) Organizational factors

Shen (2007) found through a questionnaire survey that the perception of organizational support has a significant effect on employees' willingness to stay. Ke (2007) thought that salary fairness and a sense of organizational support have an important influence on willingness to stay. Liu (2011) argued that the sense of organizational support has a significant positive correlation with the willingness to leave. Ma (2017) believed that salary fairness, emotional dedication and job performance have a positive role in promoting a willingness to stay. Wang (2017) pointed out that the leadership style, organizational commitment, and work meaning make employees feel satisfied in their spiritual and psychological state, and they are willing to stay for the organization. Jiang, Xie, and Su (2017) indicated that work adaptation and organization adaptation can strengthen nurses' willingness to stay. Su (2020) said that managerial leadership

can encourage employees to stay on the job.

(2) Interpersonal factors

Liu (2011) conducted an empirical analysis of knowledge workers and found that employees' turnover intention and willingness to stay are significantly negatively correlated, but not completely negatively correlated, and cannot be regarded as a complete negative relationship. The investigation and analysis by Wang et al. (2014) showed that the factors influencing the willingness of 298 nurses to stay in the hospitals include the sense of justice and trust within the organizations. In a questionnaire survey of 2,054 nursing staff, it was found that nursing staff with high social capital are more willing to stay in the hospitals than those with low social capital, and social capital is negatively correlated with wore pressure (Zhu et al., 2015). As for the willingness to stay, Chen, Fan, and Li (2018) believed that employees are willing to stay in the organization because of their identity. Chen, Fan, and Li (2018) proposed that through the increase of developmental investment in employee organization investment, the long-term co-relationship between employees and organization can be strengthened, and continuous commitment and emotional commitment can be promoted. Xu (2019) believed that nurses' sense of self-benefit is positively correlated with self-efficacy and willingness to stay.

(3) Job or occupation characteristics

Liu (2017) said that job stability, training and learning opportunities, and career development are important factors for medical students to stay, so management departments should pay more attention to factors such as on-the-job medical staff, professional environment and economic returns, and living conditions. Qin and Song (2018) proposed that factors such as economic incentives, working environment and conditions, career development management systems, and social recognition affect the willingness of health professionals.

Huang (2019) thought that the professional expectations and working environment of health workers have a strong influence on retention. Xu (2014) argued that the promotion mechanism, training opportunities and career development opportunities brought about by the organization's career management can increase the degree of willingness to stay. Cheng (2019) thought that among the control variables, other job opportunities have a significant negative influence on the organization's willingness to stay and the professional's willingness to stay.

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Chapter 3: Methodology

3.1 Research strategy

Governments at all levels and health supervisors are working hard to make the job more attractive and increase the retention rate in remote and poverty-stricken areas. The Guangdong Provincial Government of China has proposed that a balance of medical services between urban and rural areas should be achieved to enable residents in remote and poverty-stricken areas to access medical services as their urban counterparts do and that policies to retain medical workers in these areas are to be formulated in this regard (Guang, 2012). Developing retention strategies requires the understanding of factors that influence the decision to stay in or leave the position, especially in remote and impoverished areas where ethnic minorities live (Lu, 2020). Hence, the purposes of this research are two-fold: (1) to explore the factors that influence medical workers' willingness to stay or leave poverty-stricken and remote areas and (2) to reveal the challenges of rural practice that can be turned into rewards and the incentive to stay.

There are plenty of quantitative studies on the loss and high turnover of medical workers, with particular emphasis on factors, such as salary, job satisfaction, career prospects and personal traits (Lehmann, Dieleman, & Martineau, 2008; Campbell, Eley, & Mcallister, 2016)). However, a review of the literature shows that there is no defined explanation of how to retain and motivate medical workers (Buchan, 2010). To answer this gap, this study is to analyze not only the motivations of health workers to leave poverty-stricken and remote areas but also their motivations to stay in these areas.

One important methodological viewpoint in qualitative research indicates that there are no so-called "facts" in the social world. For example, some researchers point out that facts are historically and socially constructed, rather than the inevitable consequences of human nature (Robson, 2011). Quantitative research lays emphasis on "facts", while qualitative research focuses more on interpreting "meanings" constructed by the social actors. As this research explores medical workers' motivations to leave or stay in remote areas, qualitative research methods are employed to understand how the medical workers give meaning to social behaviors, social events and social affairs and to investigate the perception they have about their own experience and explanation of their own behaviors. Hence, the purpose of this research is to

understand their behavior and experience as well as how meaning is constructed and interpreted (Bogdan & Biklen, 2008).

Naturalistic inquiry is an approach in qualitative research to understand the social world in which people live and work through direct observation, participant observation, interviews, and other sources of descriptive data. Qualitative research has a tradition of a naturalistic approach, with the belief that the thoughts and behaviors of individuals and the operation of social organizations are inseparable from the social and cultural context in which they live (Chen, 1997). Because the author lived and worked in Liannan County Hospital, he was able to bring to this research his observations and subjective experiences, to create rich, evocative descriptions and interpretations of the experiences and actions of health workers in the social and cultural context that characterizes a remote and mountainous area, in China.

This research adopted the thematic analysis, a qualitative research method widely used in psychology. With great flexibility, it is regarded as the analytical method essential to identify themes (patterns of the meaning). The thematic analysis allows the researcher to describe experiences and to explore the meanings people ascribe to the reality they live. It is a constructionist method, which examines how factors such as events, realities, meanings, and experiences affect the behaviors of participants (Holloway & Todres, 2003). Thematic analysis is a method, which works both to reflect reality and to unpick or unravel the surface of "reality" (Braun & Clarke, 2006).

This research adopts a bottom-up approach of induction based on the data collected. As the researcher conducts a field investigation in a remote ethnic minority area, initially he approaches health workers. The acquired knowledge in the field allows the researcher to identify the pattern of meaning and to conduct an in-depth discussion on the people and their stories, so as to encapsulate the experiences and meanings in a complete narrative (Moustakes, 1990).

3.2 Institutional details

For this research, the People's Hospital of Liannan Yao Autonomous County has been chosen, because the researcher had the invaluable opportunity of working and interacting with the participants, who provided rich insights for conducting this research.

The People's Hospital of Liannan Yao Autonomous County was founded in 1954, covering an area of 14,700 square meters with a construction area of 1,870 square meters. It has a structure of 260 beds, but only 200 beds were opened to patients. In 2019, on average, only

61.1% of beds were used. The hospital employs 323 people, including 261 medical staff and 62 non-medical staff. Among the medical staff, there are 90 doctors (54 are qualified doctors and 36 are still conducting their studies), 93 nurses, and 78 health technicians (such as laboratory technicians, pharmacists, rehabilitation technicians and traditional Chinese medicine [TCM] therapists). One health worker has a senior professional title (corresponding to 0,4% of the medical staff), 79 (30.3%) have an intermediate professional title, 154 (59,0%) have a junior professional title, and 27 (10,4%) do not have professional titles. Regarding their educational background, one health worker has a master's degree (corresponding to 0,4% of the medical staff), 27 (10,4%) have a bachelor's degree, 108 (41,4%) have some college, and 125 (47.9%) are graduated from technical secondary schools or high schools (Liannan County People's Hospital, 2020).

In the period 2016-2019, the People's Hospital of Liannan County was not able to replace the health workers who left the institution. In fact, it recruited 40 medical staff, but 45 health staff resigned. This kind of talent structure and the high turnover rate has existed for a long time. However, more and more core employees are leaving the hospital, which has negative impacts on the operation and the supply of medical services of the hospital.

3.3 Interview participant

The original plan was to interview 20 people (ten doctors and ten nurses). After sorting out 20 interviews, the author found that there was a lack of both single and senior health workers among the interviewees. Hence, the author contacted more health professionals. Three single people were interviewed, but no one at age 50 or more was willing to be interviewed.

According to theoretical saturation, when there are no new insights, the data can be seen as saturated. After interviewing the 18th subject, no new insights were revealed. However, five new medical workers were interviewed. The saturation was confirmed, and the author stopped collecting new materials (Gee, 2011).

The 23 interviewees are all medical workers who have worked in People's Hospital of Liannan Yao Autonomous County for at least one year, and who are of different age groups, ethnicities, and gender. Detailed information can be found in Table 3.1.

Participants are between 23–47 years old, among whom there are 13 aged 23–29, four aged 30–39, and six aged 40–47. In terms of gender composition, given the inherent feature of the medical industry, ten nurses are all women; among the 11 doctors, five are men and six are women; there are in total 18 female and 5 male interviewees. Age and gender compositions

ensure a balanced distribution of different groups of subjects. Eighteen people are of the Han ethnic group, while five are of the Yao ethnic group (local ethnic group). Thirteen people are married while ten are not. Twelve people have not borne any child, four have one child, while seven have two. Sixteen people are locals while seven are non-locals. Nine people have less than five years of service, six have five to ten years, and eight have over ten years. Eleven people are willing to have a permanent stay in Liannan, five to work temporarily, while six want to leave soon, one left a few months after the researcher interviewed him.

Table 3.1 Participant demographic information

Participant	Job title	Age	Gender	Married or not	Children	Ethnicity	Local worker	Working years	Intention to leave (No; Yes, in the middle term; Yes, in the short term; left)
D1	Physician assistant	24	Male	No	0	Yao	Yes	2	Yes, in the middle term
D2	Physician assistant	25	Male	No	0	Han	No	2	Yes, in the middle term
D3	Physician assistant	24	Female	No	0	Yao	No	2	Yes, in the middle term
D4	Physician assistant	23	Female	No	0	Yao	Yes	2	Yes, in the middle term
N5	Chief nurse	47	Female	Yes	2	Han	Yes	28	No
D6	Physician assistant	25	Female	No	2	Han	Yes	2	Yes, in the middle term
D7	Deputy chief physician	40	Male	Yes	2	Han	No	17	Left
D8	Physician assistant	24	Female	No	0	Han	Yes	2	Yes, in the middle term
N9	Nurse	30	Female	Yes	2	Han	Yes	10	No
N10	Chief nurse	32	Female	Yes	2	Han	Yes	11	No
N11	Chief nurse	47	Female	Yes	1	Han	Yes	28	No
N12	Chief nurse	42	Female	Yes	1	Han	Yes	23	No
D13	Physician assistant	41	Male	Yes	2	Han	Yes	20	No
N14	Nurse	30	Female	Yes	2	Yao	Yes	10	No
D15	Resident doctor	27	Female	No	0	Han	No	5	Yes, in the short term
N16	Chief nurse	39	Female	Yes	2	Han	Yes	20	No
D17	Chief physician	27	Male	Yes	0	Han	No	3	Yes, in the short term
N18	Nurse	25	Female	Yes	0	Han	No	4	Yes, in the short term

N19	Nurse	27	Female	No	0	Han	Yes	4	No
N20	Nurse	26	Female	Yes	0	Han	No	5	Yes, in the short term
D21	Chief physician	40	Female	Yes	1	Han	Yes	21	No
N22	Nurse	25	Female	No	0	Yao	Yes	7	No
N23	Nurse	26	Female	No	0	Han	Yes	6	Yes, in the short term

Legend: Physician assistants have a bachelor's degree; but, as their training is not complete, they may only practice medicine under the guidance and supervision of experienced physicians. A resident doctor is a qualified physician (i.e., one who has completed postgraduate training) and may practice independently as a general practitioner. A deputy chief physician is a senior physician ranking below the chief physician. A Chief physician is the head doctor on staff in Liannan County Hospital.

3.4 The nature of individual interviews

The research adopts an in-depth interview format, in which the researcher and the participants had free conversations. The researcher prepared guidelines for the interviews, and, with the consent of the participants, the interviews were audio-recorded, to avoid deviation and help the researcher focus on the interviews.

3.4.1 Interview guideline

(1) Procedures

Preparation: a recorder, a pen

Lead-in: The researcher specifies the purpose of the study and procedures of the interview and promises that interviewees' personal information will be kept strictly confidential and will not be divulged in the thesis.

Interview: The researcher conducts the interview according to the outline and asks interviewees for permission to record the whole interview.

End: The researcher once again expresses gratitude to the interviewees.

(2) Potential questions for interview

Questions related to the background: the experience and motivation to be a doctor/nurse

Q1: How do you feel about being a doctor/nurse?

Q2: Why do you want to be a doctor/nurse?

Can you tell me about your life experience? Your childhood? Your study? Your family?

Q3: Was being a doctor/nurse your original intention? Was it your first choice in the entrance exam/high school entrance exam? What were you thinking when you applied for the first choice of major? Can you recall your story about the college entrance exam?

Q4: Is medical major your first choice? What is your first occupation/job? And, if none, why not?

Q5: What medical schools did you attend? What unforgettable activities did you do at school?

Q6: In which hospital did you work as an intern? What is the difference between that hospital and the current one? What are the most unforgettable things during your internship?

Main questions related to interpersonal support (social support), ongoing events, direct events that motivate medical workers to stay (or to leave) remote areas. Interviewees are

allowed to discuss the details of their living conditions within the scope of this research project.

Q1: What do you think of your work recently?

Q2: Did you like it when you first arrived here? Do you like the fun of this occupation? What do you like/dislike? Is this the life you want working here? Why? (Attitude of medical service providers themselves)

Q3: What is the difference between the hospital where you are working and other hospitals where you once interned, where you received continuing education, where you received further study and training, or where your parents, friends and classmates once visited? Please, can you recall an example of why this event is unforgettable to you? What benefits and effects vehave it brought to you?

Q4: Can you describe your leaders and bosses? How is the communication with leaders and bosses? For example, why is this event unforgettable to you? What benefits and effects vehave it brought to you?

Q5: Can you describe your relationship with colleagues, the relationship between subordinates and superiors, and the working atmosphere? What differences are there between this hospital and other hospitals where you used to work? Provide an example.

Q6: What do you think of the teamwork between doctors and nurses? How do you feel like working with your colleagues? How is this relationship?

Q7: Is there any atmosphere for active social contact among the teams? Provide an example.

Q8: Is the organization autonomous/authorized? Is it respected and recognized? How do employees engage in organizational activities? Is there administrative/personal support at work? Provide an example.

Q9: In your opinion, what has happened to your organization since you started working here? What is the working environment? How is the supply of hospital infrastructure and equipment? What events do impress you the most? (experience of the working environment)

Q10: What do you think about working in the hospital, system and organizational culture? What events do impress you the most? Do you feel that the organization encourages work-life balance?

Q11: In your work and life, what events or experiences do impress you the most? For example: Why is this event unforgettable to you? What benefits and effects have it brought to you?

Q12: Do you think your work will help you develop yourself? Is the pace and amount of your work moderate? What is your career development? Do you have enough space? Provide

an example? (Profession and professional development)

Q13: What do you think of the living conditions (housing, education, medical services) of the area where you work? What kind of experience, or events has influenced you a lot? (Living conditions)

Q14: In your opinion, is your work patient-centered or doctor-centered? Why is this event unforgettable to you? What benefits and effects vehave it brought to you?

Q15: Do you think you have established an effective relationship with patients? Are there any memorable examples? Why is this event unforgettable to you? What benefits and effects vehave it brought to you?

Q16: In your opinion, how do the history, culture, social environment and political background of the minority groups affect your work?

Q17: Is working in remote indigenous areas affected by shortages of suppliers, laboratories or materials, and structural defects? (Supporting facilities and utensils)

Q18: Is there a knowledge or cultural gap among patients and medical workers? Are there any special and unforgettable examples? Why is this event unforgettable to you? What benefits and effects vehave it brought to you?

Q19: Are there any negative setbacks in work due to system constraints, staff shortage and turnover, insufficient training and community isolation? (Learning and growth)

Q20: Do you feel regret if residents receive treatments passively, and are subject to short-term discontinuous treatments and fail to see expected results? Provide an example.

Q21: Have you ever been distrusted by patients? For example? Why is this event unforgettable to you? What benefits and effects have it brought to you?

Q22: Do you have full contact with and a stereotyped understanding towards residents of indigenous communities? For example, what are the experiences of these residents? Has it affected your future work?

Q23: Have you encountered special and unforgettable working situations here? For example, is there an extremely urgent situation? Or what makes you feel under great pressure?

Q24: Does working here help you gain experience? Or do you have any chance to learn? What challenges and obstacles do you face? (Learning and growth)

Exploring significance: for example, emotions, perceptions, and motivations in various working situations to enable interviewees to reflect on the significance of their experiences

Q1: What do you think of your future?

Q2: What do you care most about this job/occupation? If you had a second chance, would you still choose to study medicine? If not, what would you want to do?

If you had a second chance, would you still choose to work here? If yes, why? If not, where would you want to go? Why?

Q4: What makes you want to leave / what do you want to stay away from? (Exploring influential factors)

Q5: Is there anything here that needs to be improved? For example, how do I improve myself?

Q6: If you want to go to another hospital, what will be different/similar? What makes things better/worse there?

Q7: In your opinion, how can we make everyone more energetic? Or how can we recruit more energetic people?

Q8: What do you think of the indigenous culture here? Culture of the minority group living in mountainous areas? Language barriers? Drinking culture, or others? What events impress you the most? What experiences do you have? What are your gains? What influences does it have on you?

3.5 Interpretation of the empirical material

3.51 Data collection

All interviews were conducted from August 2019 to January 2020. All interviewees were informed of the purpose of the interviews and that their identities would be kept confidential. The interviews were conducted in Chinese and took an average of 90 minutes. Some interviews were interrupted for special reasons and then rescheduled for another day). All interviews were recorded and transcribed.

The interviews were semi-structured with open-ended questions, giving the interviewees more flexibility and freedom to talk about their experiences. The guidelines for the interviews ensured that the interviewees were given enough chance to talk and give relevant information related to the topic.

All interviews were recorded with a voice recorder and mobile recording equipment. Interviews were conducted in different places. They were normally in a doctor's office or a conference room, because such places are more suitable for in-depth interviews. Some were done in a private dining room of a restaurant. Based on the preferences of the interviewees, some special things in this industry were made clear after the researcher explained the interviews. Meanwhile, the interviewees' emotions were also marked in notes, especially when

they were answering some sensitive questions, such as future development direction and professional orientation (Seidman, 2009).

Since there are two groups of interviewees, the questions differed among subjects. The first group are doctors, and all questions focused on their views on their posts, and their work and life experiences (Lofland, 2009). Given the speciality of this occupation, the questions aim to explore their views towards their career choices, their working environment, most impressive events, their career and their future in their careers. The second group are nurses. The focus of the interview was to understand their attitude towards their jobs, career development, and their views on work and life situations, special events and the environment.

The purpose of this research is to understand their real thoughts on retention motivation. If medical workers have intentions to leave, the reasons were also explored. To some extent, throughout the interview, the questions were explained, some questions were further elaborated by the interviewees, and some questions were avoided. The interviewees' answers are made up of texts, which are used to describe the real-life and work experience of the participants (Rubin, 2010).

The author transcribed every word uttered in the interviews. The transcription was facilitated by the online transcription tool provided by the voice recording equipment supplier (labelled Soaiy), and was subject to proofreading through the researcher's repetitive listening to the recordings. The transcription continued until the data were sorted out. After re-reading and proofreading of the transcribed texts, they were documented on the computer hard disk. The stored data lasted for 36 hours and a length of 191,000 Chinese characters were obtained. The transcriptions were uploaded into NVIVO. Then, the interview analysis was carried out using the thematic analysis technique (Braun & Clarke, 2006).

3.52 Interpretation of the empirical material

During the interviews, the interviewer and the interviewees interpreted the questions in their talks and gave preliminary answers. The further interpretation was involved in transcribing interviews and text compilation. The interpretation of the textual data continued through a recursive process of data interrogation and engagement, with movement forward and backwards between stages toward answering the research questions being addressed.

Braun and Clarke's (2006) stages of thematic analysis were followed. These stages are presented here in a linear way. However, they were performed in an iterative and reflective process that developed over a period of several months.

In this research, initial codes were generated inductively from single-case data set and a coding framework was developed on an ongoing interactive basis during a detailed analysis of the data the researcher was most interested in exploring. The NVivo software program was used to assist this process.

The codes covered a wide variety of ideas, thoughts, and events recalled in the interviews. These codes formed the main repeated patterns (themes) and helped to organize data. Subthemes were created within themes, if necessary. Throughout this process, detailed notes about the development of themes and subthemes were written in memos. Memos were also created to record ideas, insights, interpretations, or growing understanding of the textual data. The researcher also used visual representations to sort the different codes into themes or subthemes, and to make sense of the relationships between themes and between themes and subthemes within them.

Furthermore, in an ongoing process, the researcher reviewed the coded data extracts for each theme and subtheme to determine if coherent patterns were apparent. This process emerged when the researcher analyzed the entire data set and conducted the cross-case analysis. In these reviews, it became evident that some themes had to be broken down into separate themes – e.g., the initial candidate theme 'social factors' included too diverse data extracts, so it needed to be split into two main themes, 'social factors' and 'understanding the surroundings of Liannan County Hospital'. Other themes and subthemes needed to be collapsed into each other – e.g., the candidate subthemes 'doctor-patient relationship' and 'differences on ethnic cultures' were brought together to form one meaningful and coherent subtheme 'doctor-patient relationship'. In the same vein, some themes and subthemes were also discarded because they did not have enough data to support them – e.g., 'organizational culture' and 'organizational structured'.

To ensure that the themes told a convincing story of the data, the researcher also returned to the raw data and further reviewed and refined the coding. This process ended up when the researcher was not able to add anything interesting, relevant, and substantial to the existing thematic map. Then, the researcher wrote a detailed analysis for each theme, identifying the story that each theme told and how each theme fit into the overall story about the entire data set, in relation to the research questions addressed in this research.

This process was then scrutinized by a second researcher to ensure the plausibility, credibility, and relevance of the results. At this stage, it was required to refine some themes that were not sufficiently clear and comprehensive. Finally, themes and subthemes were organized to be presented in a meaningful and useful theme map. Informative names were given to themes

and subthemes. The finalized themes, subthemes, and exemplar quotes are presented in Table 3.2.

The final stage included a clear communication of the findings, supported by direct quotes from informants, and an attempt to theorize the significance of the findings and their broader meanings and implications. The first part gave voice for the informants to create an overall story about what the themes reveal about medical workers' motivations to work and live in or to leave poverty-stricken and remote areas (see chapter 4). The second part aimed to provide the researcher's representation of the medical workers' motivations to stay or leave remote areas, and research questions were answered by interweaving literature with finding (see chapter 5).

Table 3.2 Themes overview

Theme	Subthemes	Description	Example verbatim
Understanding the surroundings of Liannan County Hospital	Accessibilities in a remote and rural region	Limited infrastructures available in Liannan County	"There are still a large number of ethnic minorities who live in the mountains. Relatively remote areas are not accessible by vehicle, so the transportation is not convenient" (D8)
	Rurality and access to care	Limited access to healthcare services in Liannan County	"The poverty in this county has restricted the hospital's development. No matter how the hospital grows, if the environment doesn't change, it can't be improved" (D2)
	Rurality and education	High levels of illiteracy among the ethnic minority locals	"There are many ethnic minority residents who have barely received education or received little education before getting out to work in society" (N23)
	Rurality and economy	Poor economic development of Liannan County	"The economy in ethnic minority areas is relatively backward, and local economic development is slow" (D15)
	Yao customs and traditions	The local culture from the perspective of local and non-local workers	"The minority culture here is very attractive to me, especially their costumes. Men and women, young and old wear silver jewellery, which is full of ethnic features" (N20)
	Superstition among patients	The mismatch between ancestral traditions and the medicine that is practiced in the Liannan County Hospital	"In the emergency department, some patients wear something or be covered with certain plants to drive out the evil according to the customs of the Yao nationality, but these grasses will cause some problems such as pressure ulcers to the patients" (N12)
	Lack of health knowledge	Illiteracy on promoting health habits among inhabitants in ethnic minority	"Many people here don't pay much attention to their health. They lack health knowledge and don't have the consciousness of seeking medical treatment actively" (N10)

Individual factors	Motivation to engage in the medical industry	Motivations arising from childhood experiences and family's influence	"My mother is of the Yao ethnic group. She often cured diseases with some Chinese herbal medicine… I have admired her since childhood, and she kindled guided my interest in traditional Chinese medicine" (D3)
	Rural self-identity	Person's heritage and sense of belonging to Yao culture and traditions	"Because I was born and grew up here, returning here to work means returning home. After all, I have lived here since my childhood and have developed feelings in it, so I like to be here" (N11)
	Limited professional experience	Health workers with little or no work experience in Liannan County Hospital	"I still want to learn the professional knowledge well first. So, I will still learn professional knowledge here first, and think about the future after having a certain ability" (D8)
	Being a medical worker	Learning to be a medical worker through the daily working experiences and increased awareness of frustrations and difficulties	"The patient died of a sudden myocardial infarction when I was there. My thought was that we must keep trying to save him with CPR. But we failed. As a doctor, I desperately wanted to save my life, but I failed. That's the feeling" (D7)
	Opportunity for service	The opportunity to help others, to serve the community	"I think it is quite fulfilling to bring bright hope to patients as an ophthalmologist. I think this is the value of being a doctor. This may be the only reason that I think it is good to be a doctor" (D17)
Organizational factors	Workforce Issues	Staff shortage and high turnover results	"It is the shortage of doctors that makes us experience work overload. So, we can't fall sick or ask for leave. Because once we do it, other people will have to fight alone at the department" (D2)
	Infrastructures, equipment and medicine	Difficulties encountered due to lack of equipment and medicine. Acknowledgement of some improvements on infrastructures and organizational structure	"There are too few medical devices. We do not have enough ambulances for an emergency. Sputum aspirators and oxygen tubes are insufficient, and it will be too late to borrow them in an emergency" (N18) "I feel the hospital has changed a lot. When I first came to work here, the hospital only had a three-floor building with many departments. It was crowded and the space was limited" (N14)
	Collegial support and supervision	Positive interactions with colleagues and superiors. Receiving advice and mentoring. Friendship at work.	"When I finished my maternity leave and went back to work, I was anxious. My superior taught me patiently and tolerated my mistakes. She helped me be back on track." (N9) "The colleagues at our department get along well with each other. We tolerate, understand and support each other" (D17) "We have lovely colleagues. We often hold leisure-time activities such as visiting old people's homes, local tourist attractions and museums" (N22)

	Management and leadership	Inefficient organization management. Empowering health workers	"The schedule of our department is not reasonable ... I think firstly it is necessary to properly schedule the staff. They should have enough rest. Only in this way they can work with energy" (N19) "The superior will assign tasks to everyone, and each of us takes charge of the department tasks, such as equipment control, drug control and clinic mentoring" (N14)
	Workload	Different perceptions on health workers' workload	"The work rhythm is slow and the pressure is gentle" (D15) "I feel tired because of the high working intensity in the emergency department" (N10)
	Organizational support	Support for implementing new projects. Psychological support.	"When I started the venipuncture project in 2016, our director was very supportive of it and helped me declare a new technology project. The nursing department also promoted the technology" (N12) "The hospital has provided some convenience when I need to take care of the family. In this regard, the hospital has given me a lot of help ... Doctors are always busy with work, but we also have to take care of our family" (D13)
	Remuneration package	Different perceptions on a realistic and competitive remuneration	"It's quite comfortable here. The workload here is proportional to my salary" (N20) "I think to recruit more talents, a hospital must first have a better remuneration package, so that everyone feels that their work can be rewarded accordingly" (N5)
Career factors	Learning opportunities	Availability of in-service training. Lack of opportunities for advanced skills and scholarly pursuits	"The launch of a new project is a great learning opportunity for our pediatric nurses. I can learn a lot every time I participate in training." (N23) "My current job does not make me feel greatly improved. I meet patients with common diseases, and I do nothing else except some acupuncture and moxibustion every day. I do not have access to other things, so I may grow relatively slowly" (D4)
	Career aspiration	Career planning and pathways for advancement	"I will strive to pass the examination of Medical Practitioner Certificate within two years. After that, I hope to work at a better hospital and learn more" (D1)
	Being respected and recognized	Acknowledging the opportunity to fulfil the need for prestige	"In remote places like here, especially in rural areas, patients are actually very respectful of doctors" (D13)
	Living conditions	Ensuring social support and housing for non-local workers	"The hospital is doing very well in this aspect. The staff dormitory has been set up not far from the hospital. I think this is a welfare benefit for migrant workers. It is not only convenient to work but also solves the housing problem, saving the trouble of renting a house" (N14)
Social factors	Local educational facilities	Poor infrastructures in schools for children	"Many of the people here would send their children to Qingyuan because the education level here is low" (N12)

The drawback of wine culture	Advocating for dissemination of information and education material on the drawback of the wine culture	"The minority residents here like to smoke and drink. This is the ethnic habitude here. They can drink from morning to evening... but when we explain it to patients, they will feel repulsive and think we are officious. We, medical staff, are caring for patients for their own good, but they will not understand" (N11)
The language barrier between medical workers and ethnic minorities	Advocating for the availability of Yao language disease and treatment information	"Due to the influence of language, patients in ethnic areas express not very accurate when describing diseases, and sometimes it would affect the diagnosis of diseases" (N19)
Conflicting lifestyles	Acknowledging lifestyle conflicts among patients in the hospital wards	"The Yao and Han patients with different living habits live in the same ward, so conflicts would occur. As the patients of ethnic minorities care less about hygiene, the Han patients in the same ward would make complaints. And maybe the minority patients do not always wash their clothes, so conflicts would arise, which brings difficulties to our work." (D1)
Doctor-patient relationship	Exploring different perceptions on doctor-patient trust. Poor patient compliance	"I am from the Yao ethnic group, I communicate with Yao patients in Yao dialect, and they also trust me. I also have a language advantage here, but it would be different if I work outside Liannan" (D6) "I was on duty during the Mid-Autumn Festival. The other department asked me to go for a consultation. I went there and the patient beat me" (D2) "Patient compliance is unsatisfactory. For example, a patient was told to complete the treatment, but he felt better after a partial treatment for a period and thought it was enough. So, he just went back home and did not come to the hospital for treatment anymore" (D13)

3.6 The role of the researcher

The researcher is a hospital administrator who has worked in this field for almost 10 years. As former Vice Director of Liannan Yao Autonomous County People's Hospital, the researcher was once in charge of the local People's Hospital, TCM Hospital and seven town-level healthcare centers. The researcher has a master's degree in Managerial Economics from Nanyang Technological University, Singapore, with a special focus on the administration of government and public hospitals. Meanwhile, the researcher is a counselling psychologist who provides professional assistance to workers and patients with psychological disorders. As an

administrator and a psychologist, the researcher lay stress on the relationship between management and the psychology of employees. When working in Liannan, the researcher paid special attention to staff retention in this poverty-stricken area. Previous studies focus more on why medical workers leave than on why they stay. Therefore, retention motivation and its reasons have captivated the researcher attention. When the researcher started writing this thesis, he had moved out of this area and returned to work in the provincial capital. Therefore, the role of the researcher was shifted from an insider to an outsider during the field work phase, allowing the researcher to understand and observe this change from a different perspective. The researcher is from the Han ethnic group and works in ethnic minority areas. As an outsider, the researcher observed the work experience of Han and Yao people in ethnic minority areas. Dual identities in different stages of this doctoral journey gave him a unique understanding of the interviewees (Liu, 1996). Qualitative research is an "art" of "understanding", which requires the joint efforts of the researcher and the participants.

Through language, he constructs and rebuilds the environment, and uses it to explain certain social phenomena. In this research, the transcribed texts are derived from the participants' interviews. Understanding how participants ascribe meaning to their life experiences contributes to uncovering the hidden thoughts, values, and feelings and to establishing connections among ideas and views, as well as with the social context in which the participants live (Fairclough, 1997).

This research does not have a predetermined stance, because qualitative research should not take into consideration the researcher's own experience but should return to the subjects to avoid a closed loop of opinions. For instances, Alvesson and Skoldberg (2009) mentioned that the author's personal experience will have an impact when the researcher "is specifically typical". Robson (2011) articulated the importance of using reflexivity in qualitative research to avoid the researcher's biases. In other words, in this research, the author's hospital management experience will make him alienated, removed, neutral, and separated from the subjects and their backgrounds. However, during the interviews, the author realized that when the interviewees did not answer or respond as expected, the author would be responding. At that time, the author started thinking about how to use the hypotheses to remind himself that he should learn to engage his own cultural and social views in the participants' discourse, experiences and knowledge. For example, when the author asked about the organizational system and culture of the hospital, it is easy for the author to respond to the interviewees' responses based on his hospital management experience. This response often affects the interviewees' thinking. Therefore, reflexivity should be adopted as the methodological stance

in doing research (Alvesson & Skoldberg, 2000). This indicates that the research does not discuss the validity of the results. On the contrary, the author must recognize his important role in writing as it influences the research process. This indicates that this piece of writing records the author's thoughts, emotions, as well as questions over the relationship between discourse, roles and power, in order to see what cannot be unveiled in the writing.

Chapter 4: Findings

This chapter presents the findings from the semi-structured interviews with medical workers in the People's Hospital of Liannan Yao Autonomous County. For a clear and enhanced understanding of the participant data, the findings of the interviews are organized into five sections, each corresponding to one identified theme. The first theme consists of providing insights into the rural atmosphere of Liannan County from the point of view of the informants. Other emergent themes explore the lived experiences of health workers, who participated in this research, and were grouped under four sections: individual factors, organizational factors, career factors and social factors.

4.1 Understanding the surroundings of Liannan County Hospital

The Liannan Yao Autonomous County is located in northwest Qingyuan City, Guangdong Province, and the north of the Tropic of Cancer (Figure 4.1).

Figure 4.1 Liannan Yao Autonomous County, Qingyuan City, Guangdong Province, China

To its northeast is Lianzhou, to its southeast Yangshan, to its south Zhaoqing, to its north Lianshan and to its northwest Jianghua, Hunan. Liannan County governs 71 rural neighborhood committees in 7 towns (Woshui, Xiangping, Damaishan, Zhaigang, Daping, Sanpai, Sanjiang). It is an ethnic minority autonomous county with a resident population of only 120,000. Its government is in the Sanjiang Street.

The minority ethnic groups spread 88% of the land, which is mainly mountainous areas. Among them, the Yao ethnic group has the largest population, more than 80,000 people. The Zhuang ethnic group includes 15,000 people. There is also Hui, Manchu, Li, Yi, Tujia and Buyi ethnic groups in the county. Other inhabitants are of Han nationality, mainly Hakka, living in Sanjiang street and Zhaigang featuring plains and basins, which cover an area of about 12% of the county (Qing, 2019).

4.1.1 Accessibilities in a remote and rural region

Liannan is in cold mountains and basins, with no aeroplanes or trains passing. The rivers are not navigable, and this is a barren limestone area. The region has also poor road infrastructure and a limited number of buses available to the population. Such a situation not only brings inconvenience to the healthcare staff, but also makes it difficult for patients to see a doctor. Many patients in remote areas choose to go to hospitals in other neighboring counties that are closer to them. For instances, participant D8 shared the following regarding the region:

> *"There are still a large number of ethnic minorities who live in the mountains. Relatively remote areas are not accessible by vehicle, so transportation is not convenient. Ambulances cannot reach distant areas. ... After being discharged from the hospital, some patients will give up follow-up outpatient treatment because they live too far away. Particularly for the elderly, who have underlying diseases, suspended treatment will aggravate their illness. However, they have no choice. There are poor roads in certain areas, so to see a doctor in the city requires a lot of labor, money and time."* (D8, Han ethnicity)

Poor road infrastructure compels patients to abandon follow-up treatments. It also brings about the shortage of consumables, the late supply of medicine and drugs for emergency surgery, and the inability to carry out logistical work. Some participants shared the following:

> *"Sometimes it requires some preparations for blood transfusion, but the central blood station is more than ten kilometers away, which is likely to cause delays at work."* (N16, Han ethnicity).

"For example, in the case of damaged medical equipment, we will call up for repairs, but it will take a long time for the engineers of the manufacturer to come, and some need to come from other cities, which will take a few days." (D1, Yao ethnicity)

"We have all the equipment, but if a machine fails and needs to be repaired, it will be time-consuming to repair due to the long distance. At this time, patients cannot be checked, which affects their condition." (N18, Han ethnicity)

Therefore, the lack of roads and other modes of transportation seems to be one key factor that restricts the development of the hospital.

4.1.2 Rurality and access to care

Liannan County Hospital is in a remote and mountainous area without a developed economy, population support and convenient public transports. The rurality and rural deprivation restrict the development of the hospital. Migrant medical workers (*i.e.*, people from the Han ethnic group who did not grow up in the region) generally recognize that the poverty, rural deprivation, and primitive living conditions of the population are the major bottlenecks of the hospital's development. For example, one informant stated:

"The poverty in this county has restricted the hospital's development. No matter how the hospital grows, if the environment doesn't change, it can't be improved. For example, the permanent resident population in Liannan is only 120,000. There are over 300 beds in the hospital, but they are never fully occupied. Poverty has seriously affected the development of the hospital." (D2, Han ethnicity)

4.1.3 Rurality and education

Due to poverty and backwardness, people in minority areas have a low degree of education compared to cities (Ni & Huang, 2013). Liannan is not an exception, and the following quotes describe the situation of Liannan very well.

"Sometimes we will encounter some elderly people who come to see a doctor. They are not educated and cannot write their own names. We explain to them how to treat and how to use the medicine, but they do not understand. … This kind of situation generally exists in the elderly, people with relatively low education level, or from remote areas." (N14, Yao ethnicity)

"There are many ethnic minority residents who have barely received education or received little education before getting out to work in society. They are generally of

poor quality." (N23, Han ethnicity)

4.1.4 Rurality and economy

Liannan is a severely poverty-stricken county in a remote mountainous area. Consequently, *"living conditions in mountainous areas may be difficult, while life is relatively comfortable in large cities."* (N10, Han ethnicity).

To put it in another way, in Liannan, the economy is backward and the living conditions are difficult. A participant from one of the local ethnic groups stated. *"the wages of residents are generally low, so it is still a bit difficult to live here"* (D3, Yao ethnicity).

Migrant health workers shared similar thoughts. For instances, participant N18 recalled her own experience:

> *"The income of these residents is not high, and most of them are unemployed. After we visited the patients and took them back to the hospital, they were unable to pay for the treatment. I would think that this area is generally very backward."* (N18, Han ethnicity)

4.1.5 Yao customs and traditions

This region is full of ethnic local characteristics, which are very attractive to local non-ethnic minorities people and migrant workers. Participants N20 stated:

> *"The minority culture here is very attractive to me, especially their costumes. Men and women, young and old, wear silver jewelry, which is full of ethnic features."* (N20, Han ethnicity).

Participant N19 and D8 were very vocal about cultural differences between Yao and Han ethnic groups. They shared the following thoughts:

> *"The ethnic cultures, customs and habits here are different from those of the Han nationality ... They have many festivals with their own ethnic characteristics, such as the Panwang Festival on lunar June 6."* (N19, Han ethnicity)
>
> *"Speaking of culture, the ethnic minorities here attach great importance to their own ethnic festivals, such as the Cultivation Festival and Panwang Festival of the Yao nationality and the Torch Festival of the Zhuang nationality. They see these festivals more important than the Spring Festival."* (D8, Han ethnicity)

Local employees also show pride on their traditions. Participant D3 stated that *"the scenery here is very beautiful, integrated with the unique culture here. Every place has its own legend."*

It seems that they identify themselves with the local customs and traditions. However, due to their professional duties, sometimes they cannot often go home and participate in Yao festivals. Such a situation is a source of negative comments from the neighborhood and causes pressure on fitting the professional identity and the ethnic identity.

> *"During the holidays, I didn't go back because of work. Although my parents made no comments, the neighbors next door would ask them, why didn't your daughter return home during the Spring Festival? There will be such words that I think will hurt the feelings of my parents. Although my parents can understand me, our ethnic culture is like this, attaching great importance to holidays. People think that I have to go back to all festivals, whether small or big, because they pay much attention to celebrating those festivals. If I, as a family member, do not show up, this means disrespect. Although I identify myself with them, I don't have many vacations due to my nursing work, and the festivals would affect my work."* (N22, Yao ethnicity)

4.1.6 Lack of health knowledge

As the patients in the Liannan area generally have a low degree of education, they often lack health knowledge. In other words, Liannan patients have no awareness of health care and little understanding of diseases. For example, nurse N10 stated:

> *"In fact, many people here don't pay much attention to their health. They lack health knowledge and don't have the consciousness of seeking medical treatment actively. ... They would drag on until their health worsened, missing the best treatment time. Some patients have bad habits, such as alcoholism which would cause organic disease."* (N10, Han ethnicity)
>
> For doctor D1, poverty is the root cause of the lack of health awareness. *"In remote mountainous areas, where people won't see a doctor unless there is no other way, they prefer to endure the disease rather than spend money on themselves, because sometimes they cannot even guarantee a basic life."* (D1, Yao ethnicity)

Another Yao physician also believed that only growth in income and progress in education can help to improve the situation.

> *"The residents here hold the opinion that a minor illness or pain can be treated in the village or the local health center. Only when suffering a major disease, they need a doctor in the hospital. However, with income growth and education improvement, they would pay more attention to their physical health."* (D4, Yao ethnicity)

4.1.7 Superstition among patients

Ethnic minority areas retain their living customs and medical cultures, including some herbal medicine treatments and the tradition of witch doctors. Examples of traditional superstitions practices are often recalled by local and non-local medical staff in their interviews. A doctor from the minority Yao ethnic group, a local nurse from Han ethnic group and a migrant doctor, for instances, told, respectively:

> *"Within an ethnic group, each tribe has different views. For example, if the Yao residents here are sick, they would carry out some, as we say, superstitious activities. If someone in the family gets sick, they would offer sacrifices to god. These habits are, after all, something that has been handed down from generations to generations in ethnic minorities"* (D1, Yao ethnicity)

> *"The local inhabitants here do not take the initiative to seek medical treatment, especially during the holidays. They think that it is unlucky to take medicine or to see the doctor during the holidays. They will endure it, and until the disease becomes serious will they take medicine or go to the hospital. Therefore, it often occurs that after the holidays, for example, the Spring Festival, there will be many more patients than at ordinary times."* (N11, Han ethnicity)

> *"Many elderly people are superstitious. They don't want to see a doctor at first when they feel sick, but rather look for fortune tellers to help them. They think that the disease would be eradicated if bad things are removed, like killing an animal, cutting down the tree in the yard, and changing a decoration in the house to a different position."* (D8, Han ethnicity)

The old rituals often struggle with modern medicine, such that these habits have brought many obstacles to medical staff. Nurse N12 gave an example of how such customs and traditions can bring about obstacles and inconvenience.

> *"There are also customs of the Yao nationality which pose the hindrance. Sometimes, in the emergency department, some patients will wear something or be covered with certain plants to drive out the evil according to the customs of the Yao nationality, but these grasses will cause some problems such as pressure ulcers to the patients. These customs are also a great obstacle when doctors communicate with patients."* (N12, Han ethnicity)

But, by looking at this phenomenon from the patients' point of view, it is possible to identify some benefits. Nurse N19 believes that the traditional approach to deal with diseases

has a positive psychological effect on treatment:

> *"The local Yao medicine culture is unique. Each town and village have their own Yao doctor, mastering the secret ancestral skills ... When the local Yao people get sick, they often have to ask the "Mr Gong" [a witch doctor of Yao] to perform a religious rite and draw a mantra to drive away from the evil. Now it seems that it actually has the effect of psychological hint."* (N19, Han ethnicity)

4.2 Individual factors

The individual factors theme explores five subthemes, including the medical workers' motivations to work in the medical industry, the rural self-identity shared by several informants, the extent of professional experience informants had when they joined the Liannan County Hospital, their perceptions about being a healthcare worker and about the service opportunity.

4.2.1 Motivation to engage in the medical industry

In this research, most of the interviewees suggest that their professional choices and decisions were affected by circumstances or incidents that happened throughout their life trajectories. The circumstances that most affected their decisions seem to be the respondents' childhood experiences and family.

(1) Childhood experience

Poverty in childhood stages often determined participants' career choices. They believed that being a health professional and working hard could change the conditions of their families. For instances, participant D1 stated：

> "*When I was a child, my family was not in a good condition and we couldn't afford medicine or a doctor. So, I want to change that situation. Now I've grown up and got a job here.*" (D1, Yao ethnicity)

Another interviewee mentioned that at an earlier age his illness was an important driver to study medicine. He said:

> *"I still remember very clearly. When I was in the first grade at the age of seven, I was not very well. Perhaps this is the very reason for me to become a doctor."* (D2, Han ethnicity)

Nurse N9 also shared a similar experience：

"My grandfather was seriously ill when I was in the third year of junior high school, and at that time I became interested in studying medicine." (N9, Han ethnicity)

Some other participants recalled that childhood idols and role models influenced their decisions to have a medical profession. Participants D3 and N5 stated:

"My mother is of the Yao nationality. She often cured diseases with some Chinese herbal medicine. For example, if I had a cold and a fever, I didn't go to the hospital. Instead, my mum would cook Chinese medicine for me. So, I have admired her since childhood, and she kindled guided my interest in traditional Chinese medicine." (D3, Yao ethnicity)

"When I visited the doctor in the hospital at my young age, I often came across an old but kind nurse who treated me with great care. So, I wanted one day to wear the nurse uniform to take care of others." (N5, Han ethnicity)

(2) Intergenerational succession

Another phenomenon that can explain medical career choice is intergenerational succession, which has a long history in China and is still alive today. For instances, if there is a doctor in the family, such a relative can have a persuasive role or help the younger generation to get access to this industry.

In this research, one-third of the interviewees were influenced by relatives who have a medical profession.

"Some of my family members are nurses. I'm influenced by them."(N18, Han ethnicity).

"*Perhaps I'm influenced by my uncles, who are both doctors, so I'm very interested in this career.*" (D1, Yao ethnicity)

(3) Concern over occupational stability

In China, being graduated is not a synonym of having a job. However, the overall employment rate in the healthcare industry reaches a high figure. Hence, being a medical worker often becomes the choice of many families. As one participant referred, *"My family support me in studying medicine and think that it is a speciality with which I can make a living."* (D3, Yao ethnicity)

In fact, the professional stability of medical staff is a persuasive factor for many families to lead their children into the medical sciences. A quote from participant D1 illustrates this idea well: "*At that time, parents still called the shots. ... As the medical industry is stable, I choose this career."* (D1, Yao ethnicity)

For many families, the doctor profession is also a decent and respectful job. Participant D8, for instances, mentioned：

"I chose to study medicine because I took my family's advice. ... They think that being a doctor is a decent job. If you are a doctor, not only you will be well-versed and respected, but also it will be easier to find a job." (D8, Han ethnicity)

In poor areas, being a health worker is also the ideal choice.

"In fact, my family suggested that I study nursing, because, at that time, the nurse was a very good job. So after I finished my junior high school, I went to a nursing school." (N14, Yao ethnicity)

4.2.2 Rural self-identity

The Chinese tradition attaches one to his/her native land so that he or she would be unwilling to leave it. It means, for instance, that while parents are alive, one should not travel to distant places.

In this research, eleven participants have grown up in Liannan, and consequently, they perceive themselves as linked to its spaces, objects, and other locals. They expressed their strong sense of belonging to the hometown and the hospital. Unsurprisingly, their enthusiasm and feelings sharply contrast with the ones of the migrant workers, who looked in Liannan with curiosity but detached from it. Therefore, emotional belonging and value belonging to Liannan are features easily recognized in the local medical workers' narratives. Nurses N11 and N12 shared similar thoughts：

"Because I was born and grew up here, returning here to work means returning home. After all, I have lived here since my childhood and have developed feelings in it, so I like this place." (N11， Han ethnicity)

"*I am a local here and this is my hometown. I can't dislike it. This is my hometown, which deserves my dedication."* (N12， Han ethnicity)

4.2.3 Limited professional experience

There is a large number of doctors without professional experience in Liannan County Hospital. They came to this hospital after graduation, but they still do not have the Medical Practitioner Certificate. Speaking of their self-positioning, these young doctors acknowledge their limited abilities, their deficiencies, and are willing to maintain their current status. Doctor D2 was very

vocal about his willingness:

"*Given my education background, English competence and technical strength, working in such a second-class hospital is already a good choice for me."* (D2, Han ethnicity)

Other young interviewees also recognized their lack of experience and acknowledged the opportunity to learn and develop offered by Liannan County Hospital. The speech of participant D8 clearly illustrates this thought:

"At present, this is my ideal life, but I have just stepped into the society and there are still many things I do not understand. I still want to learn professional knowledge well first. So, I will still learn professional knowledge here first, and think about the future after having a certain ability." (D8, Han ethnicity)

4.3 Organizational factors

The theme organizational factors include six subthemes: staff shortage; infrastructures, equipment and medicine; organizational structure and internal processes; collegial support and supervision; management and leadership; and pace of work.

4.3.1 Staff shortage

Liannan County Hospital has suffered a loss of health workers for a long time. It is a situation that has worsened over recent years because the hospital has been unable to replace the medical staff who has resigned. For example, participant D8 stated:

"Not long ago several colleagues resigned. Our department was short-handed, so for some time we were busy. The hospital has been trying to hire new staff but it has never done that." (D8, Han ethnicity).

(1) Work overload

This chronic understaffing has contributed to many problems experienced by medical workers, who remain in the hospital. Several interviewees referred to the inability to guarantee the normal function of the departments and to ensure reasonable scheduling and smooth workflow. Participants often mentioned the exacerbated work overload at some periods and the consequent poor coordination and/or cooperation within and between departments.

"Given the high turnover, we are short of medical workers. The workflow is not comprehensive from time to time, and we did not cooperate well with each other in the

emergency treatment. Some doctors are newcomers and they've just found their feet in this hospital. If there is no training, and if the workflow does not function well, they cannot cooperate with each other or tackle the issues in the quickest way." (N19, Han ethnicity).

Due to significant understaffing, sometimes medical workers cannot also enjoy their vacations or apply for sick leave.

> *"The shortage of doctors makes us experience work overload. So, we can't fall sick or ask for leave. Because once we do it, other people will have to fight alone at the department."* (D2, Han ethnicity)

Most of the health workers are ladies in this hospital. But, due to staff shortage, pregnant women have not been relieved from emergency work, nightwork and overtime. Instead, these ladies have to stick to their posts at their departments. Nurse N9 stated:

> *"Since we are short-handed, it is hard to distribute the work. I have to change the dressing with my back bent during pregnancy. I hope more medical workers will be added to our emergency room and the team can grow stronger."* (N9, Han ethnicity).

Several interviewees also pointed out the loss of many external training activities. As a nurse mentioned, *"due to understaffing in the department, my schedule cannot be satisfied, so it's a pity to lose such a training opportunity"* (N14, Yao ethnicity).

Like nurse N14, other informants highlighted similar thoughts.

> *"It is often the case, when I want to study, there is lack of conditions here. I really want to take part in a certain training course, but due to understaffing my schedule cannot be satisfied, or the hospital has insufficient funds. Also, the commuting distance is long."* (N18, Han ethnicity)

(2) Talent shortage

A serious consequence of understaffing is the lack of talents. Generally speaking, Liannan County Hospital should have a talent structure integrating the old, middle-aged and young talents. But, in fact, only fresh graduates and returned old medical workers are willing to stay in Liannan. For instances, doctor D1, from the Yao ethnic group, stated:

> *"There are insufficient medical workers. Many experienced professionals with a higher educational background don't want to be here but prefer to work in first-tiered or second-tiered cities."*

And then, added:

"What I hope most is that the hospital should improve its talent team construction."

(3) Low personnel quality

Associated with the lack of talents is the low quality of existing human resources. There are shortcomings in first aid knowledge, equipment operation and etiquette services.

When talking about the medical staff, doctor D1 explained: *"Both doctors and nurses are not well qualified."* Nursing staff hold a similar view. For instances, a nurse said: *"When I was working in the emergency department, once during the emergency treatment, the doctor asked me to defibrillate since he was not able to use the defibrillator. When the doctor is unqualified, we nurses are passive, and that is what I feel."* (N12, Han ethnicity).

4.3.2 Infrastructures, equipment and medicine

Liannan County Hospital has been characterized by serious shortages of almost everything for a long time. However, interviewees recognized that some improvements were implemented in the hospital, in the last years, with tremendous benefits for the community.

(1) Shortage of drugs and consumables

Liannan region is a poor area. Due to the lack of proper road infrastructure, the shortage of medicines and consumable medical supplies has been a problem for a long time. For example,

> *"Some new auxiliary medical materials are not available in this remote and mountainous area, the Yao minority area, such as enhanced adhesive tapes and hydrocolloid. It is hard to purchase them. They are unavailable."* (N12, Han ethnicity)

Transfusion is often required in the emergency treatment of medical services. However, as a remote area, Liannan has not set up a blood bank for storage and transfusion. It borrows blood from the blood bank in Lianzhou, which is 12km away. Critical patients with emergency cases and medical workers from the emergency and surgery department are concerned about the hidden peril of the delayed supply.

Another critical shortage is associated with the protective materials and disinfecting instruments, which may hinder medical workers from carrying out the work and lead to occupational exposure. Nurse N11 touched upon the risk of being a medical staff when exposed to material shortage.

> *"At that time, we didn't have protective materials, so we were directly exposed to the patients. If a patient was diagnosed as SARS, we would have no way to isolate or cure him/her."* (N11, Han ethnicity)

There is also a huge lack of drugs for treatment. The situation also brings medical accidents, thus increasing work pressure on medical workers. Doctor D7 explained：

> *"Sometimes the drugs such as non-steroid anti-inflammatory drugs and other basic drugs are available, but if patients are in extreme pain, we cannot offer other quality medicine."* (D7, Han ethnicity)

(2) Shortage of technical services

In a poor region, a hospital can hardly satisfy the demands of its clinical departments. The shortage of diagnosis checking devices and other medical services are a reality that medical workers face every day in Liannan County Hospital. Among the many examples recalled in the interviews, the following two direct quotations clearly illustrate this phenomenon:

> *"There are too few medical devices. We do not have enough ambulances for an emergency. Sputum aspirators and oxygen tubes are insufficient, and it will be too late to borrow them in an emergency."* (N18, Han ethnicity)
>
> *"Our hospital is not able to offer chemotherapy to patients. We feel sorry for them. Their economic conditions are not good and have to travel to big cities for medical treatment. If we can offer chemotherapy, at least they can save the traffic expense."* (N22, Yao ethnicity)

(3) Poor equipment

The existence of outdate equipment and the risks of performing with such engines were also mentioned by several informants. For instances, doctor D1 stated：

> *"The hospital devices and equipment are outdated and may break down. The hospital has only one B-ultrasound scanner. If it breaks down and cannot be repaired, we won't be able to check patients."*

And, he added:

> *"Currently, if the equipment fails to meet the standards, it will cause some measurement errors, and sometimes the errors can be big. So even if the operation is successful, the patient's eyesight cannot meet our doctor's expectations. This is a common phenomenon here."* (D1, Yao ethnicity)

(4) Improved physical infrastructures

Both locals and non-locals emphasized the idea that the creation of a new building was particularly critical to offer better healthcare services to the community, even though such improvements have not been enough to effectively meet the needs of community members.

"The first impression of this hospital on me was shabby. ... When I came here, the hospital did not have a canteen, and the environment was relatively bad." (N9, Han ethnicity)

"I feel the hospital has changed a lot. When I first came to work here, the hospital only had a three-floor building with many departments. It was crowded and the space was limited." (N14, Yao ethnicity)

(5) Improvement of hospital facilities and equipment

The Chinese government has gradually increased the medical investment in poor areas, including deploying large examination and data processing equipment, establishing stroke centers, chest pain centers, and other emergency departments. Liannan County Hospital is not an exception. Changes and improvements in the hospital facilities were unanimously recognized by the interviewees. For instances, several nurses stated:

"Our equipment has been improved. As a result, lots of inspection and treatment items have been added. After outsourcing the management of work clothes, there are no worries about patient clothing and bed sheets." (N12, Han ethnicity)

"Great changes have occurred in our department. The most obvious one is the equipment. A lot of new instruments have been deployed in our department, such as intermediate-frequency therapy apparatus and infrared therapy apparatus." (N14 Yao ethnicity)

"Medical equipment in hospitals continues to increase, ranging from MR equipment to physiotherapy equipment in departments." (N19, Han ethnicity)

4.3.3 Organizational structure and internal processes

In China, hospitals strive for optimizing management and organizational structure. In the interviewees' eyes, the organizational structure has been improved. These changes have brought hopes for the development of the hospital's diagnosis and treatment services as well as the creation of new departments. From the clinical treatment to support services, all interviewees believe that the optimization of the organizational structure was conducive to the development of the hospital and services. The following quotes clearly illustrate the main ideas shared by informants:

"The organizational structure has changed. The acupuncture and moxibustion and physiatry previously belonged to the same department, but now they are separated. The morning shift time used to be very long, but after the division, shift time is

shortened, and we have more time to provide service to patients." (D3, Yao ethnicity)

"I think there are changes in the organizational structure. Our department used to work together with the physiatry department ... Later, after acupuncture and moxibustion and physiatry were separated, we could have targeted discussion on affairs of our department after shift. Changes in organizational structure are beneficial for us." (D4, Yao ethnicity)

"In the past, I had to get medicine and deliver blood samples on my own, but since the establishment of the support system, we can leave it to the logistic workers. Besides, the number of departments and beds increases, and the treatment zone and living zone are separated." (N9, Han ethnicity)

However, even though some improvements have been made, there is still a wide gap between Liannan County Hospital and other neighboring hospitals. Doctor D4, for example, stated: *"As for medical services, I think Liannan underperforms compared with other regions. It is inconvenient and lagged-behind."* (D4, Yao ethnicity)

To explain this situation, respondents often acknowledged the poor medical quality, weak management processes and management inefficiency. For instances, nurse N19 talked about the need to optimize the management process.

"I think the hospital should make a great improvement in medical services. For example, the hospital needs to standardize the medical service process and increase staff at the customer service department ... The schedule of our department is not reasonable ... I think firstly it is necessary to properly schedule the staff. They should have enough rest. Only in this way they can work with energy." (N19, Han ethnicity)

4.3.4 Collegial support and supervision

Respondents highlighted the existence of a harmonious workplace in Liannan County Hospital. They often emphasized regular supportive supervision and a good atmosphere among medical workers.

(1) Vertical relationships

Regarding the superior-subordinate relationships, most interviewees left their positive comments, thinking that their superiors guide them at work and take care of them in the non-work sphere. Both nurses and doctors, both locals and non-locals, recognized the existence of constructive dialogue and harmonious relationship with their superiors. They also think that the relationship with superiors is based on respect and mutual trust. For instances, two nurses stated:

"She helps me a lot. For example, when I finished my maternity leave and went back to work, I was anxious. My superior taught me patiently and tolerated my mistakes. She helped me be back on track." (N10, Han ethnicity)

"When we have urgent affairs and cannot go to work, she will coordinate and transfer another colleague to our position, and may even take over our role temporarily." (N14, Yao ethnicity)

(2) Equality between doctors and nurses

In Liannan County Hospital, doctors and nurses signalled a cooperative relationship among themselves based on the principle of trust. Participant D13 stated:

"I think such a cooperative relationship is the most appropriate thing. Nurses shouldn't carry out their work unconditionally according to the prescriptions and doctor's advice if such prescriptions or advice are wrong. Otherwise, it's nothing else but repeating the same mistakes." (D13, Han ethnicity)

Likewise, other informants declared:

"I think doctors and nurses are both indispensable. Both of them need to build an equal relationship of cooperation." (N10, Han ethnicity)

"I think doctors and nurses are equal and should point out the mistakes of each other. Doctors can't be absolutely right, and nurses don't have to listen to them all the time." (D8, Han ethnicity)

(3) Mentoring

In Liannan County Hospital, the superiors of medical workers not only perform management roles but also mentor the medical workers. It means that the process of management and communication is a process of learning from time to time. Almost all interviewees had a deep impression of and gave a high appraisal to their mentors and directors. For instances, a doctor and a nurse stated:

"I'm a freshman and not familiar with many things, either professional knowledge or conducts. Our superior guides me in this respect and cares for me in living and work." (D8, Han ethnicity)

"Our nursing director has taught me how to deal with things like an elder sister. She told me not to do things hastily ... She told me the entry point to handle things. Later, I began to know how to carry out the work in the department." (N9, Han ethnicity)

(4) Horizontal relationships

Communication is one of the key elements to build bridges at work, to get everyone involved in effective co-management and to prevent conflicts. In Liannan County Hospital, most respondents mentioned smooth communication and harmonious relationship with colleagues. Young doctors, for example, said:

> *"I think the relationship between colleagues is good. Since we are contemporary and share a similar educational background, we get along well with each other."* (D8, Han ethnicity)
>
> *"I feel we have a good relationship with our colleagues. We have free communication at daily work, which won't make me feel stressed. Another reason is that I am young, and they treat me as a friend, so we don't have a complicated relationship."* (D4, Yao ethnicity)

Experienced health workers also emphasized the good work environment and, in turn, the top-level cooperation that exists in the hospital.

> *"Our colleagues understand and help each other. ... When a colleague doesn't feel well or has urgent affairs, others will take his/her place temporarily. We appear indifferent in daily life, but when someone is in trouble, we stick together to help him or her."* (N10, Han ethnicity)

(5) Friendship at work

In Liannan County Hospital, the harmonious relationships among colleagues are not restricted to the workplace. People often participate in social activities after work or on day-offs. Such non-work interactions boost interpersonal relationships and increase the joy of life.

> *"We have a good relationship. As usual, we interact with each other, have dinner and go shopping. Our relationship is close, and the work atmosphere is relaxed."* (D6, Yao ethnicity)
>
> *"Our department holds regular outdoor activities, such as mount climbing and BBQ. Everyone participates in the activities positively. Apart from work experience, we can also enhance communication in our living."* (N14, Yao ethnicity)

However, informants' narratives disclosed two parallel facets of these entertainment activities. On the one hand, the locals linked these events with the development of strong friendships. They praised for the relationship among colleagues, which engenders a sense of belonging. For example, nurse N19 stated:

> *"I like the colleagues here. They are basically locals and amiable. ... In other hospitals, people go to work and get off work routinely, but our department is different. The*

atmosphere is not only harmonious but also shows a sense of kinship. Actually, we spend more time with our colleagues than our families. So, a warm atmosphere comes into being gradual. I like this kind of atmosphere.” (N19, Han ethnicity)

On the other hand, migrant medical workers often felt isolated and excluded from the locals' non-work activities. A doctor, who is a migrant worker, stated：

“For example, when greeting or eating, the local doctors show great familiarity with each other. When they are eating, they often play jokes on each other, and it doesn't matter if the joke goes too far. But they are very polite, or estranged, to us migrant workers, which gives me a sense of distance. Such behavior makes me feel that they are exclusive, and I cannot get in their circles. And there are differences in the work atmosphere. Normally the local doctors and nurses belong to one group and treat us differently. They do not accept those who are from other places, so we migrant doctors have to become another group.” (D17, Han ethnicity)

Migrant nurses also think they are not attached to the local community and, to some extent, are more likely to run into conflicts due to regional differences. Nurse N18 clearly identified this issue in her narrative:

“One group is the nurses of the local minority group in Liannan County, and another group are us migrant nurses who came to work in Liannan. Nurses from the same area communicate well and will help and play with each other in work and life. And those from different areas tend to have disputes in work.” (N18, Han ethnicity)

4.3.5 Management and leadership

When talking about hospital's leaders and directors, respondents recognized the flexibility and openness to change in the workplace. But simultaneously, they asked for further changes that may leverage their intrinsic and extrinsic motivation.

(1) Openness to change

At work, medical workers often need to use new technologies, develop new projects, or implement new knowledge. Most of the interviewees affirmed that the hospital administrators have been strongly committed to supporting their initiates, recruiting new talents, and acquiring upgraded equipment. Nurse N11 stated:

“We used to send critical patients to the superior hospital because we do not have the ability to cure them. Later, with various supports, including personnel promotion, talent introduction, and equipment upgrades, we successfully carried out the new

operation and cured some patients who were not able to be treated before. So far, this operation has benefited many people." (N11, Han ethnicity)

Likewise, other informants spoke about the implementation of projects developed by employees.

"When I started the venipuncture project in 2016, our director was very supportive and helped me declare a new technology project. The nursing department also promoted the technology." (N12, Han ethnicity)

"If our department wants to carry out a project, the leader will provide us with the things we need, such as venues and equipment, and will also help promote our project." (N14, Yao ethnicity)

However, there is a broad consensus that further efforts should be facilitated by hospital leaders. Interviewees essentially highlighted the social support that needs to be given to health workers at work. Illustrative examples of this idea were given by nurses.

"First of all, I think that leaders should care about every employee. The employees will be motivated to work harder if they feel leaders have concern for them." (N11, Han ethnicity)

"More care should be given to medical staff, especially to those who work in the night shift. Increasing night shift allowance might be a good idea. More attention could be paid to the diet, like providing midnight snacks, and other aspects. These are humanistic cares that would make them feel that the hospital has taken care of them in many ways, and tend to stay here." (N16, Han ethnicity)

(2) Remuneration package and expectations

Interviewees seem to have different perceptions about the level of remuneration package each one receives. On the one hand, some people believe that they receive a fair wage. For instances, one participant stated: *"It's quite comfortable here. The workload here is proportional to my salary."* (N20, Han ethnicity)

Another informant shared a similar thought:

"I'm more satisfied with my present job than with my previous one. It is the life I want. The salary is not very high, but I think it's not bad in this small town." (N9, Han ethnicity)

On the other hand, other health workers voice the idea that it is imperative to improve the remuneration packages performed by the hospital. As nurse N11 said, "e*mployee's welfare should be improved so that employees feel that they could get a corresponding return for their*

own work." (N11, Han ethnicity)

One reason that support the increase of remunerations and benefits was loudly expressed by one informant when she associated this issue with the difficulties to recruiting and retaining talent by Liannan County Hospital.

> *"I think to recruit more talents, a hospital must first have a better remuneration package, so that everyone feels that their work can be rewarded accordingly."* (N5, Han ethnicity)

Some other interviewees affirmed that pay rise is imperative for trust and fairness. That is, in the recruiting process, Liannan County Hospital often makes promises related to salary and welfare benefits. However, those promises are rarely fulfilled in time, so employees may perceive a breach of trust, which could negatively impact motivation and job satisfaction.

> *"Colleagues who resigned some time ago in our department left because of salary issues. The hospital promised to give them more income than they actually received, so they felt cheated."* (D3, Yao ethnicity)

4.3.6 Pace of work

Working in remote areas is often associated with a slow pace, relaxed working atmosphere and moderate workload. However, the interviewees shared different views on work pace.

(1) Slow-paced work

When asked about the experience of working in Liannan County Hospital, most interviewees seem to enjoy the slow work rhythm and light stress. Such pleasant experience was recognized, for example, by nurse N23, a local respondent:

> *"I feel that the current work rhythm and workload make me feel comfortable. I can control my time well and strike a balance between work and life. It makes me feel that I am qualified for this job."* (N23, Han ethnicity)

Similarly, doctor D8 stated:

> *"The current workload is acceptable to me. The number of patients here is periodic and seasonal. Usually, there are fewer patients during busy farming seasons because they have no time to come. When the farming season pass, many patients suffering from pain come to this hospital*." (D8, Han ethnicity)

(2) Fast-paced work

Compared with most interviewees, a small number of informants has a heavy workload and

cumbersome work due to the special nature of their work in the emergency department, critical care department and staff shortage. An illustrative example is given by nurse N10: *"I feel tired because of the high working intensity in the emergency department."* (N10, Han ethnicity)

Furthermore, some respondents believe that the huge workload reduces the spare time health workers have. Doctor D1 stated:

> *"Doctors and nurses, these front-line workers, do not have so much time, and most of them need to work shifts. They go home to have a rest or sleep immediately after work because there are still many tasks the next day. Therefore, work occupies most of their time. For most people, work is out of all proportion to family or life. This situation is very common."* (D1, Yao ethnicity)

Patients who appear during peak periods are also a test for understaffed situations. Doctor D6 said：

> *"Sometimes when there are too many patients, we will be extremely busy. There can be a maximum of 60 patients, but there are only five bedside doctors, which means we can be busy sometimes."* (D6, Yao ethnicity)

4.4 Career factors

Maslow's (1943) hierarchy of needs highlights that the highest level of human needs is personal growth. When informants were asked about their career advancements, most medical staff attached significant importance for both career opportunities and personal values.

4.4.1 Learning opportunities

(1) Opportunities for hands-on learning

The shortage of talents is an important characteristic of Liannan County Hospital. This situation provides good opportunities for hands-on learning since health workers are asked to help colleagues, to be autonomous in the daily work activities, and to be accountable for the tasks they do. For instances, doctor D8 stated:

> *"At the hospital where I used to work, the instructor was afraid to let us do work on our own and much work was not allowed to do ... Things are different here. I can do it by myself and the instructor is there to guide me. In this way, I can grow much quickly."* (D8, Han ethnicity)

Other examples of learning opportunities abound in the interviews. Nurse N23 recalled her

experience with the development and implementation of new technology projects.

"The launch of a new project is a great learning opportunity for our pediatric nurses. I can learn a lot every time I participate in training. And with the development of medicine and science, knowledge is also updated gradually, so I have enough to learn." (N23, Han ethnicity)

(2) Learning atmosphere and pressure

However, some respondents hold different views. Due to the small population size of Liannan city, patients that come to Liannan County Hospital often have chronic and mild diseases. Most patients with acute and critical illnesses choose to go to bigger cities for treatment. Doctor D4, who has just started his professional career, said:

"My current job does not make me feel greatly improved. I meet patients with common diseases, and I do nothing else except some acupuncture and moxibustion every day. I do not have access to other things, so I may grow relatively slowly. The health center where I worked before may enable me to grow more quickly. ... We are now exposed to fewer diseases, which could do little to our own growth. If I had a chance, I would like to raise ourselves to a higher level to know more types of diseases. At present, my growth space is relatively small because what I have access to is relatively limited. This is one of the biggest problems of my growth." (D4, Yao ethnicity)

Doctor D6 held similar thoughts.

"My ideal life is to work in a big hospital! The better the hospital is, the more knowledge will be learned. The big hospital also has more departments, patients and diseases, which are limited here. I cannot learn more and have no more challenges when I work here. ... I hope I can be exposed to more patients, diseases and cases ... but it is not possible in this hospital. There are no new cases." (D6, Yao ethnicity)

Therefore, most young interviewees, who hope to grow quickly and improve themselves, felt that this platform cannot provide them with the challenges and opportunities they need for personal growth.

Further, some interviewees, who are migrant workers, believe that Liannan County Hospital lacks a positive learning atmosphere and pressure, two factors that are essential for facilitating self-motivation. As a Chinese old saying goes, one prospers in worries and hardships and perishes in ease and comfort. To illustrate this idea, nurse N18 stated: *"The first reason for not being positive is the lack of self-motivation."* (N18, Han ethnicity)

Two other informants shared similar views.

"*The slow-paced life's impact on the learning atmosphere is also a negative reaction to some medical staff interviewed ... when I want to study, people around me always persuade me to give up, and my enthusiasm for learning weakens over time.*" (N20, Han ethnicity)

"The atmosphere of being a doctor, of learning, and title promotion are not very positive, so excellent talents are reluctant to stay here for a long time. Those self-motivated doctors and talents may dislike this kind of thing." (D7, Han ethnicity)

4.4.2 Career aspiration

(1) Obtaining a Medical Practitioner Certificate

Among the interviewees, the young assistant physicians hope to obtain the Medical Practitioner Certificate through their own efforts and then, move to other hospitals for development. Doctors D1 stated:

"I will strive to pass the examination of Medical Practitioner Certificate within two years, and then study for a period. After that, I hope to work at a better hospital and learn more." (D1, Yao ethnicity)

(2) Optimism about the future

Most interviewees were optimistic about the career development of medical workers. They noted that the medical industry is an industry with fast-developing science and technology and perceive their career as promising and worth looking forward to. They were full of confidence in the future and believe that they will achieve success. Nurse N22 and doctor D3 stated:

"In the future, I think our industry will be more and more respected by everyone, and both work and the salary will be better and better. My future is very promising." (N22, Yao ethnicity)

"I think the future is worth looking forward to. After all, the occupation of doctor is very professional with many unpredictable things. I hope I can achieve something in this profession in the future." (D3, Yao ethnicity)

(3) Running a self-owned clinic

Among the interviewees, four young doctors aim to be self-employed people. In terms of their current professional attitudes, they hope to learn more and temper themselves. When the time is right, they plan to open their own clinic. Doctor D1 said:

"After having enough clinical and social experience at a certain age, I want to open

my own clinic. I want to open a Chinese medicine clinic." (D1, Yao ethnicity)

(4) Switching to a new industry

Some migrant nurses no longer wish to work as nurses. They plan to improve themselves through learning, then change the status quo by switching to a new industry. A nurse, whose parents chose her actual occupation, said:

"There is still a shortage of nurses. Various kinds of nursing care, such as elderly care and rehabilitation care, are still very promising in society, but I personally do not want to continue to work in this field. ... I prefer not being a nurse. I want to become a trainer or follow some other careers unrelated to nursing." (N18, Han ethnicity)

Other examples were given by nurse N20 and Nurse N23.

"I do not plan to be a nurse for a long time. I have been preparing for Teacher Certification recently. After I get the certification or after my husband's work at this city is completed, I may not continue to be a nurse." (N20, Han ethnicity)

"I do not know what will happen in the future. If my working ability is relatively good and I want to improve myself further, I might try to take the civil service examination. In fact, everyone may have different ideas at different stages. I cannot foresee the future." (N23, Han ethnicity)

4.5 Social factors

The theme social factors include five subthemes: being respected and recognized, living conditions, doctor-patient relationship, the language barrier between medical workers and ethnic minorities, and conflicting lifestyles.

4.5.1 Being respected and recognized

The interviewees noted that their work is respected and recognized by patients, hospital leaders and colleagues. Participant D1 said:

"In remote places like here, especially rural areas, patients are actually very respectful of doctors, because overall, the medical profession is quite respected." (D1, Yao ethnicity)

Similarly, doctor D8 stated：

"In this place, it is easier to find a job for medical graduates, people here show more respect for doctors. ... Patients here rather respect and understand us." (D8, Han

ethnicity)

Such emotional experience is a driving force for medical workers to work and grow. Positive incentives give medical workers the motivation and behavioral disposition to overcome difficulties and continue their work.

4.5.2 Living conditions

The supply of housing and education is a problem in a mountainous region. The overall environment can hardly be changed by the hospital, but several changes have been made and health workers have appreciated them. Regarding the housing facilities, doctor D7 stated:

> *"I feel that Liannan County Hospital has taken care of my needs. The demands I made during this period have been relatively quickly met. The hospital has improved what it could within its limits, and told us that the hospital could do little. In the past, the housing conditions were poor, but now a building for experts has been built to solve the problem of accommodation."* (D7, Han ethnicity)

Recently, a gym was also built to fill a gap in the entertainment and mental health spheres.

> *"About two years ago, a gym was built in the hospital dormitory building. Then our medical staff get a place to exercise, enrich spare time and relieve stress."* (N12, Han ethnicity)

Through these initiates, medical staff have improved their living conditions and their narratives clearly thanks to the hospital for its efforts.

> *"The hospital is doing very well in this aspect. The staff dormitory has been set up not far from the hospital. I think this is a welfare benefit for migrant workers. It is not only convenient to work but also solves the housing problem, saving the trouble of renting a house."* (N14, Yao ethnicity)

However, the local education facilities are still an issue for non-locals. Liannan County Hospital is still short of educational facilities and education levels. Consequently, when parents want their children to have academic success, children are sent to the city, which is 160 kilometers away, to receive an education.

> *"The faculty, teaching and education level here are still below the average, and the knowledge about information and new technology spreads relatively slowly. Many people would send their children to Qingyuan because the education level here is low."* (N12, Han ethnicity)

Consequently, the health workers, who are married and have children, are dissatisfied with

the shortage of educational resources.

> *"The education ... here are [is] not comparable to those [that] in other cities, which is why many people will leave when the time is ripe."* (D17, Han ethnicity)

4.5.3 Doctor-patient relationship

Regarding the doctor-patient relationship, respondents recalled different thoughts and perceptions.

(1) Doctor-patient trust

When informants were asked about the doctor-patient trust, some respondents believe they receive the support and trust of the patients, in part because they are locals. Doctor D6 said：

> *"I am from the Yao ethnic group, I communicate with Yao patients in Yao dialect, and they also trust me. I also have a language advantage here, but it would be different if I work outside Liannan."* (D6, Yao ethnicity)

However, the majority of the respondents believe that there is a serious distrust of patients, mainly because of misunderstandings caused by the low level of diagnosis and treatment that the hospital delivered in the past. Doctor D1 stated：

> *"In former days, the Liannan County Hospital performed poor treatments to the community. ... The other day, we offered a piece of reasonable advice, an advice of treatment ... He [the patient] was still worried and asked questions repeatedly. He thought that what the doctors said deviated from what he believed. So he gave up and continued his treatment in another place. ... I think that the residents here have long been distrusting Liannan County Hospital. They generally believe the doctors in Liannan County Hospital are incompetent. Before coming to this hospital, I have known that it does not have a good reputation and its medical techniques are actually terrible. Quite a lot of patients would not choose to come to this hospital even if they are sick, and some go to other hospitals for treatment after being examined here. So the distrust from patients is correlated with the hospital to a large extent."* (D1, Yao ethnicity)

(2) Poor patient compliance

In the healthcare field, compliance is an important indicator for assessment. In other words, to ensure that the treatment achieves the desired effect, it is essential to gain the patient's cooperation. It means that medical workers and patients should reach a tacit agreement and

form a commitment. Doctors should provide simple and clear instructions and patients should perform cooperative actions according to the doctor's instructions. Nevertheless, the reality is quite different in Liannan County Hospital. A doctor D1 stated:

> *"What's more, patient compliance is unsatisfactory. For example, a patient was told to complete the treatment, but he felt better after a partial treatment for a period and thought it was enough. So, he just went back home and did not come to the hospital for treatment anymore."* (D1, Yao ethnicity)

An explanation for the low patient's compliance is their poor health awareness. which brings frustrations to medical workers. To exemplify this idea, nurse N14 said：

> *"There are also some patients who have poor compliance and are particularly disobedient. I have told a patient repeatedly during infusion that he should not swing his hands and move around. The patient nodded his head at that time, but he disobeyed it right after we walked away. Then we always found the injection point swelled and the whole infusion tube was removed."* (N14, Yao ethnicity)

(3) Inadequate guarantee of safety

Respondents of the Han ethnic group think that people in minority areas are aggressive and irritable. Patients often carry out acts of sabotage when they are dissatisfied with the medical staff's diagnosis and treatment or when they believe their needs are not satisfied. They even attack medical staff, causing tension between doctors and patients and insecurity among the medical staff regarding their work. Examples of narratives that describe incidents with patients are as follows:

> *"The patient felt that his requirements could not be met, so he started to yell, smashing the stool and throwing things while scolding, and almost hitting us. ... Some drunk patients felt that there is no need to come to the hospital or there is no need to have an injection for hangovers. When we gave them an injection, they did not cooperate, and even hit us."* (N9, Han ethnicity)
>
> *"I was on duty during the Mid-Autumn Festival. Another department asked me to go for a consultation. I went there and the patient beat me. I was not seriously hurt, but quite unhappy."* (D2, Han ethnicity)

4.5.4 Language barrier between medical workers and ethnic minorities

A key challenge, and also an important obstacle, reported by many interviewees is the language barrier. There are frequent communication misunderstandings between non-local health

workers and locals when they carry out activities at work or after work. The exception is made for Yao medical workers, who are multilingual. Examples of this inability to communicate were recalled by both nurses and doctors:

> *"Due to the influence of language, patients in ethnic areas express not very accurate when describing diseases, and sometimes it would affect the diagnosis of diseases."* (N19, Han ethnicity)
>
> "*The most important is the difference in language and culture. There are obstacles in communication, which would affect my work. ... It is the obstacles caused by the language and culture here that affect me deeply, which affects not only my work but also my life.*" (D8, Han ethnicity)

4.5.5 Conflicting lifestyles

In addition to the language barrier, the lifestyle is also an embodiment of cultural differences. The ethnic minorities in Liannan have their habits, which are different from the traditional Han culture. However, due to space constraints, the patients of different ethnic groups cannot be hospitalized separately but mixed, thereby different lifestyles may cause conflicts. To clarify the issue, doctor D1 pointed out:

> *"There are differences between ethnic groups such as Yao people and Han people. Some Han people cannot accept Yao people's living habits. There is a patient who always smokes in the ward, or the treatment area. And if we try to stop her, she cannot understand what we said. Because of her, the whole floor is full of that smell, which would cause a lot of complaints from other patients."* (D1, Yao ethnicity)

Likewise, nurse N5 stated：

> *"The Yao and Han patients with different living habits live in the same ward, so conflicts would occur. As the patients of ethnic minorities care less about hygiene, the Han patients in the same ward would make complaints. And maybe the minority patients do not always wash their clothes, so conflicts would arise, which brings difficulties to our work."* (N5, Han ethnicity)

Among the different features that may distinguish the various ethnic groups are the smoke and drink habits. 'As nurse N11 noted: *"The minority residents [Yao ethnic group] here like to smoke and drink. This is the ethnic habit here"* (N11, Han ethnicity).

The interviewees generally hold the attitude that moderate consumption is accepted, but excessive consumption affects health and is a destabilizing element for the entire society. For

example, nurse N14 highlighted that the drinking culture has a negative impact on personal behaviors and the amount of work medical workers have to do at the hospital.

"They also love drinking. They drink not by cup but by bowl. If there are too many alcoholics, cases such as drunk driving and fight and injury due to drinking will increase, which have an impact on the emergency department." (N14, Yao ethnicity)

Other examples are related to the disrespect of hospital rules and the strain it may cause to health workers.

"There are some patients of ethnic minorities who like to drink or smoke. You tell him not to smoke in the ward, but he won't listen. You warned today and he will forget tomorrow. If he is always like this, it will be very difficult to carry out the nursing work." (N16, Han ethnicity)

Unfortunately, excessive consumption also creates irreversible damages, including the patient´s death. Some examples were recalled in the interviews. Here is an example of excessive drinking.

"I tried to rescue an alcoholic minority patient in his thirties in the ICU (intense care unit) who died when he was sent here. His death was caused by excessive drinking." (N16, Han ethnicity)

Chapter 5: Discussion

To better understand the respondents' experiences in Liannan County Hospital, the previous chapter organized the data on five themes: understanding the surroundings of Liannan County Hospital, individual factors, organizational factors, career factors and social factors.

This chapter, it will be discussed further the findings and answer the research questions outlined in the introduction chapter: (1) What health professionals do work in Liannan County Hospital? Do their profiles differ by age and seniority, upbringing and sociocultural integration, or life trajectories and fulfilment of life goals? (2) What are the main considerations to come, stay or leave a position in Liannan County Hospital? (3) How challenges of rural practice can be turned into rewards and the incentive to stay in Liannan County Hospital?

5.1 What health professionals do work in Liannan County Hospital? Do their profiles differ by age and seniority, upbringing and sociocultural integration, or life trajectories and fulfilment of life goals?

In this research, 78% of the informants are from rural, remote areas. Most of them share concerns about working conditions, poor financial incentives, and career advancements. However, on a close examination, they have different commitments with Liannan County Hospital. Some want a job for life, others want to leave soon after joining the hospital; some want to gain resources, others want to continue working and obtain affective rewards (like emotional satisfaction and meaningfulness). Hence, four profiles of health workers will be described in this section, based on demographic variables, symbolic capital resources and occupation, and deep-rooted dispositions and motivations that guide choices and actions.

5.1.1 Cluster 1: A job for life

In Liannan County Hospital, it is possible to identify a very robust, solid cluster. It includes mainly nurses covering different age ranges. They were all born and bred in rural areas at Liannan. They are from either Han ethnic group or Yao ethnic group. Most of them are married and have children. They have been working for more than ten years in the hospital and, consequently, have a lot of experience (the exception is made for young nurses). In considering

a position in Liannan County Hospital, these professionals expect a job for life. They want to stay in Liannan and are well motivated to serve the community. They are predominantly nurses above 30 years of age, who stop their education on the secondary level.

The demographic profile of people in this cluster aligns with the Chinese literature on rural and remote health workers. Findings to date state that more experienced nurses, often aged 30-40 years, are stuck in the bottleneck stage of their career due to the limited opportunities for advancement and the nature of their occupation (Chen et al., 2013; Chen, Ge, & Chen, 2014; Fu, Ding & Ding, 2016; Liu, Zhou, & Wu, 2019).

International investigation on motivation and retention reveals that the rural background and strong sense of belonging to rural areas play a decisive role in attracting and retaining health workers to rural places (Mills & Millsteed, 2002; Richards, Farmer, & Selvaraj, 2015; Russell et al., 2017; Cosgrave, Maple, & Hussain, 2018; Cosgrave, Malatzky, & Gillespie, 2019; Cosgrave, 2020a). In this research, the existence of strong social connections and familiarity with local artefacts, language and places, have influenced people to take up and stay in a position in Liannan County Hospital. In the words of nurse N12, local health workers display their strong attachment to the place: *"We are locals here and this is our hometown; we don't have any reason to dislike it."* The preferences for a rural lifestyle, more time with family and nonexistent commute (Hall et al., 2007; Manahan, Hardy, & Macleod, 2007; Hancock et al., 2009; Auer & Carson, 2010; Sheila, Michelle & Tony, 2012; Onnis, 2017; Cosgrave, Maple, & Hussain, 2018; Cuesta-Briand et al., 2020) also have a strong effect on their decisions. As nurse N14 stated: *"My home is in Liannan, just several minutes' walk from the hospital."*

However, some scholars have noted that social and geographical mobility is not simply the outcome of free will. Instead, the resources, which the individual has, define his ability to choose his lifestyle journey (Rye, 2011). Following this perspective, it is important to understand deeper the nurses' dispositions to look for a career in Liannan County Hospital. These health professionals have always lived in rural communities. They have developed skills and dispositions needed to successfully navigate in a severely poverty-stricken county in a remote mountainous area. Consequently, their representations of the world help them to be comfortable in Liannan, but they would probably find that this same set of skills and dispositions is not useful (and maybe even detrimental) to their success in urban areas.

A salient feature of these professionals is their habitus (Bourdieu, 1977) – i.e., the embodied disposition, unconsciously acquired through experience and socialization, which predispose them to act in certain ways, without consciously thinking about it. Their sense of time, the rhythm of life, or the dialect they speak, seems to constraint their career options. As nurse N16

vocally expressed, moving from a rural town into the metropolis is an adventure that she could hardly accept.

> *"Suppose I will leave Liannan and go to a top three hospitals in the city. On the negative side, if I will go there, my work may be busier, more tiring, and I may not even care about my home. This is definitely possible. On the positive side, I may have more opportunities to grow and learn on my own. But I may sacrifice the family because after all, there are so many roles, it is really impossible to care about sometimes, because of working in a large hospital. It often takes a lot of time to study, train, and perform assessments. Because I have to take more measures to improve, it may take a lot of time."*

The culturally ingrained habits they possess have not only shaped their ways of being, but also constrained thought, action, and interaction (Bourdieu, 1977). These people remain staunchly settled in the ways of communicating and living in Liannan, where life and work are entrenched in one another. As nurse N18 stated: "*Nurses from the same area [local ethnical group] communicate well and help and play with each other in work and life"*. For these nurses, it is essential to develop an extended family at work in such a way that "t*he atmosphere is not only harmonious but also shows a sense of kinship"* (N19).

These examples illustrate how local nurses construct and reconstruct the cultural apparatus to enjoy doing things together, like barbecuing, shopping, or telling jokes in local humor. They perceive each other as a family. They know when a colleague is in trouble and, consciously or not so consciously, proceed in the right way to help her. On the other hand, the little resources (i.e., capital of any kind, to paraphrase Bourdieu's (1986) idea of capital) and little chance of obtaining them predispose them to reject any attempt to live in a different social space. Hence, remaining in Liannan is the outcome of individualized and free choices, structured by predispositions of their 'rural' habitus (Bourdieu, 1977).

5.1.2 Cluster 2: An 'internship' to gain cultural capital resources in a rural setting

This cluster is characterized by young single physicians, who take a rural opportunity to initiate their practice. They are from rural, remote areas, and so familiar with the local lifestyles. As their training is not complete and they will continue to learn from experienced doctors for several years, they are called physician assistants. They are not willing to make a commitment to Liannan County Hospital for the long term. Instead, they leave the hospital after acquiring specialized skills and knowledge (i.e., new cultural capital, to paraphrase Bourdieu, 1986) and

usually move to urban areas, where they practice independently as general practitioners or speciality doctors.

These physician assistants are troubled by many uncertainties. They have doubts about the future and their career. As doctor D1 stated: "*Since I have just started my medical studies, I have not thought about my career. I am quite confused about my future because I do not have a clear goal. ... I will just wait and see*." Hence, they choose to work in small, safe settings. Far from the fierce competition of large cities, in Liannan County Hospital, they believe to are able to find themselves and identify the life and career interests they want to carve out.

Accepting an offer in rural settings also works as a stepping stone in an early career. As many new physicians want larger, metropolitan areas, Liannan County Hospital can offer medical workers flexibility to pursue professional interests in a far less crowded and competitive environment. In smaller settings like Liannan, the physician assistances have the opportunity to prepare themselves for getting the speciality certification. They can also build their practice in an open and friendly atmosphere.

The idea that working in rural areas is a contributing factor for building a career is well documented in the literature. The lack of professional experience is a severe obstacle to getting a job offer in large cities. However, working in rural areas can provide enriched learning and training opportunities. These opportunities include diversified practices and extensive experience (Mills & Millsteed, 2002; Roots & Li, 2013; Cosgrave, 2020a) – opportunities that are hard to obtain in urban areas. When health workers take a position in rural areas, they can also build their practice with less competition and serve the community.

However, scholars have also highlighted that the remoteness that characterizes rural settings often provides weak occupational support and few professional growth opportunities. It means that rural areas offer limited space for career development. For health professionals with long-term development plans, this situation is often a source of career dissatisfaction (Roots & Li, 2013; Darkwa et al., 2015; Guo, Lu & Zhang, 2020). Studies also suggest that trained health workers, who accept opportunities in rural areas, often earn less than their urban counterparts (Weeks & Wallace, 2008). These features may negatively affect the retention rate of medical staff in rural areas (Mills & Millsted, 2002; Belaid et al., 2017; Cosgrave, 2020a; Gan et al., 2020; Guo, Lu, & Zhang, 2020; Li et al., 2020).

In this research, young physician assistances acknowledge the lack of non-financial incentives such as career progression and professional growth. The small local community is a serious constrain to the development of the hospital. The poverty of the region also discourages locals from looking for healthcare. Consequently, Liannan County Hospital cannot open new

positions and is only suitable to offer generalist expertise. Further, it does not have the opportunity to offer as competitive compensation packages as those available in metropolitan regions. Instead, the idea of exploring rural opportunities only at an early career is strengthened. The narrow latitude Liannan County Hospital has to tailor promotion, career advancement and incentives to workers' needs cannot change young physicians' initial beliefs.

However, the creation of conditions to migrate from rural to metropolitan areas cannot simply be explained by the lack of financial or non-financial incentives. In other words, more extrinsic, competitive patterns of achievement are not a natural outcome of individualized and free choices.

Unlikely nurses, who have always lived in rural communities, these health professionals were graduated in larger, metropolitan areas. Their experiences in urban areas help them to reconstruct their identities and social belonging. The various forms of socialization that they have been submitted in their lives turn their rurality experiences less determinist than with nurses in Cluster 1. In fact, they have an enriched cultural capital (e.g., a professional certification recognized by a top hospital in urban areas) and a habitus that allows them to navigate both in the rural and cosmopolitan areas (Schneider & Lang, 2014).

5.1.3 Cluster 3: A short stay to leave soon after joining the hospital

This cluster represents a small proportion of health workers in Liannan County Hospital. It joins together distinct health workers from the Han ethnic group. Doctors are certified health professionals, who grown up in economically developed areas. They left their hometowns to pursue a better life and a successful career. In other words, they accepted an offer from Liannan County Hospital to progress up the career ladder. However, soon, they realize the hospital does not have the resources they need. They express their concerns about working conditions, interpersonal relationships, and career advancement. As their expectations are not fulfilled, they are likely to feel let down and betrayed. These feelings are related to lowered organizational commitment and job satisfaction (Roots & Li, 2013; Daekwa et al., 2015; Guo, Lu, & Zhang, 2020). Consequently, the perception of psychological contract breach often results into voluntary resignation.

Nurses are young adults, who grown up in urban areas. They are often single or newly-married women without children. Some follow their husband in their work in Liannan. Others are willing to go outside their 'comfort zone' and accepted an offer from Liannan County Hospital. However, many nurses have not had the aspiration to be medical staff. Instead, they

took up nursing feeling that they were doing what their families advise them to do. As nurse N18 pointed out, "*I have always wanted to become a policewoman since childhood. But I am not tall enough to be one. So, my mother suggested that I become a nurse, and I followed her advice.*" As time goes by, they experience frustration and, soon or later, decide to switch to a different career path. They often decide to move to other industries, which includes, for instances, civil service (N23) or education (N20).

In this cluster, doctors and nurses seem to have something in common: a proactive personality. These people are energetic and passionate. They have an adventurous spirit. They are brave to explore new fields, to establish large networks and to continuously seek for the best opportunity. It means that some proactive health workers take action to find a new position in Liannan County Hospital. However, here, the lack of opportunities for career advancements has a negative impact on employees' commitment to the hospital. This relates to the intention to either accept an offer from large and well-equipped hospitals in urban areas or take a risk and navigate to other industries. This reality echoes with the literature on the outflow of health professionals in rural areas. Western studies have showed that young and ambitious health workers, who work in rural areas, are more likely to leave soon after joining the healthcare institution (Lehmann, Dieleman, & Martineau, 2008; Cosgrave, 2020a).

People, who tend to resign in the short term, appear to be also influenced by other individual factors. Liannan has poor education infrastructure and the concern over the future of children is also an indicator of being more inclined to leave the region. Previous studies argued that family factors, such as the need to reunite with family or live with a partner, could explain why the non-locals are more likely to leave than the locals (Kamien, 1998; Mills & Millsteed, 2002; Cosgrave, 2020b). The imbalance between work and life can also affect people's satisfaction with the community and have a predictive character when analyzing the willingness to stay in or leave rural areas.

Apart from these well-documented reasons, the disposition of 'urban' habitus discourages these wealth workers to be involved in the local community. The different preferences and lifestyles, as well as, the language barrier, are reasons for non-local health workers to feel lonely and even excluded by natives during non-work activities. A non-local doctor clearly illustrated this point by saying: "*When greeting each other or having meals together, I can feel that local doctors are very close to each other, while they are polite and some of them even feel distant to me. That creates a distance and I feel they were exclusive, and I just cannot get involved. As a result, local doctors and non-local doctors are just like two separate groups*." (D17) Or, as a nurse also recalled, "*I don't want to stay here. The first reason is the cultural difference. I cannot*

involve myself in the local community. I think I have difficulty in communicating with the local colleagues because I don't understand the local language, culture, traditions and customs. As a result, I only talk with the local colleagues during work. I find it hard to get along with them after work." (N18) Hence, communication misunderstandings and difficulties to interact with the local community result into feelings of loneliness, which, in turn, are also predictors of a short stay in Liannan.

Western studies have also provided evidence that it is very important for non-local health workers to connect with local people and actively engage in activities of local communities. In other words, it is difficult for non-local workers to stay for a long time in rural areas without the support of their colleagues and the community (Cosgrave, 2020a). The extent the non-local health workers are engaged in the local community and settle into the local culture affects their satisfaction towards the local community (Cosgrave, Hussain, & Maple, 2015). Hence, issues regarding the language, working environment, daily communication and relationship with colleagues, and self-isolation are all factors that impact on the turnover intention of doctors and nurses (Richards, Farmer, & Selvaraj, 2005; Roots & Li, 2013; Darkwa et al., 2015).

5.1.4 Cluster 4: Doctors who wanted to stay in Liannan County Hospital

Group four includes doctors, who choose to come and/or stay in Liannan County Hospital. They are from remote villages in Liannan County, have mature families and older children. They are either Yao Chinese or Han Chinese.

In this cluster, doctors can be split into two subgroups. One subgroup contains health professionals aged over 35 years old, who hold vocational qualifications as health staff. They do not intend to pursue a higher degree, nor to switch to another industry. They initiated their careers at health centers in villages, gained a wide experience throughout the years, and obtained the recognition to perform medical tasks independently, without an academic title (i.e., without cultural capital). As D13 clearly summarized the situation, these health workers have experience in general practice: "*For doctors like me, I think that we can only make a difference by working at basic health centers. Because we are undereducated, we are not able to do research. We can only do some basic work. That is the reality for us.*"

However, their work in the community helped them to establish good social networks with locals (in Mandarin, the term for social networks is *guanxi*) and gain respect, recognition and social status. The acquisition of *guanxi* (or social capital, to paraphrase Bourdieu, 1986) ended up with a promotion to practice in a county-level hospital. In Liannan County Hospital, these

doctors are often the head of a departments and enjoy full autonomy over the department or specialist team.

Another subgroup joins physicians aged over 45 years old, who used to work in Liannan County Hospital. In early adulthood, they shared the characteristics of Cluster 2 – i.e., they accepted an offer in Liannan County Hospital and prepared themselves for getting the professional certification. After having got it, they left the hospital to work in large and well-equipped hospitals. In metropolitan areas, they built their practice, raised their families, and were promoted. Once they perceived to have fewer development opportunities and fewer work role transitions in metropolitan areas (Rosen & Jerdee, 1976), or the family responsibilities with older relatives urged to be fulfilled at homeland, these health workers decided to return home. They were not motivated to retire. Instead, they all showed a strong willingness to continue working as physicians. Relying on the skills and competencies gained in urban hospitals, they continuously strived to exercise personal agency (Heckhausen & Schulz, 1995) and negotiated a job position in Liannan County Hospital. These older physicians are often the head of a department or team leaders.

By returning to Liannan, these older health professionals lose the medical resources and living conditions that characterize metropolitan areas. However, since they are from Liannan county, they have strong connections with locals and easily navigate between the local and urban cultures (rural vs. urban habitus). It means that they easily develop social networks in Liannan (*guanxi*). Further, the natural aging process easily distracts their attention from competition and promotion to seek greater opportunity for involvement, which includes key determinants that improve the work experience: job crafting (Kooij et al., 2017), moderate workload (Bal & De Lange, 2015) and mentoring younger coworkers of Group 2 (Armstrong-Stassen & Schlosser, 2011).

Beyond the changes in the nature of their work, the return to Liannan also facilitates the pursuit of a simple lifestyle, a cozy and happy life – aspects that the literature also highlights as important features in later adulthood. For instances, findings to date indicate that during midlife, cozy lifestyles, short commuting distance, and living together with relatives can motivate medical staff to work in rural areas (Warburton et al., 2014; Cosgrave, Maple, & Hussain, 2018; Cosgrave, 2020a). Mills and Millsteed (2002) believed that engagement with the local community and support from friends and family also have a positive impact on work motivation. Lei et al. (2020) suggest that, in China, doctors, who live with their families, have higher positive feelings and a sense of achievement than those who migrate alone and are distant from their families.

To sum up, all health workers choose to stay in this cluster. They hold a rural background, identify themselves with the local lifestyle, and strike for work-family balance. They also enjoy powerful social networks (*guanxi*), and, in turn, have access to major medical resources.

5.2 What are the main reasons to come, stay or leave a position in Liannan County Hospital?

Health workers' decisions to come, stay or leave Liannan County Hospital are consistent with several early studies (Hancock et al., 2009; Cosgrave, Malatzky & Gillespie, 2019; Cosgrave, 2020b). Factors that predict a choice for rural practice include rural upbringing, familiarity, community integration, and workplace environment. A good case is provided by almost all nurses. They have born and lived most of their lives in rural areas. Their 'rural' habitus consistently adhere to characteristically rural values, traditions and customs (Slama, 2004). For instance, the emphasis on family/community may explain why the confluence of nurses of different ages is an advantage in Liannan, since older nurses have provided mentorship to the younger adult ladies in a region which is deprived of formal training. The isolation of the region has perhaps dictated the unconscious attitude to distrust outsiders, since some non-local nurses recalled their difficulties to be accepted and communicate with local health professionals during and after work. Further, in this homogeneous professional group, people want to stay in Liannan County Hospital. They feel connected to Liannan area and satisfied with the work and interpersonal relations at the hospital. To strengthen their commitment to the hospital and its surroundings, they believe there are sparse (or even no) job opportunities in metropolitan areas. As a matter of fact, their habit does not allow them to navigate in impersonal, complex and crowded cities.

These considerations are also relevant to understanding physicians' behaviors and life trajectories. However, here, the reality is much more complex and variable. Personal motivations associated with aging may influence their decision about where to practice. In early adulthood, those who have a high education focus on managing the school-to-work transition and preparing themselves for specialities (Lv & Li, 2013). At this stage, rural upbringing influences the decision to come to Liannan County Hospital. After acquiring new cultural capital, goals and concerns often shift to career advancements and improving work conditions (Kooji et al., 2011). However, they cannot claim for a promotion or more resources by virtue of the weak position they occupy in the local social/professional circles. This means that young physicians are more likely to look for new opportunities in big cities. This leaves behind more

impoverished rural medical services, with greater dependence on senior physicians, resulting in status quo reproduction and a continuous influx of untrained doctors, which makes the provision of healthcare difficult in rural areas.

Doctors who have always had practice in rural areas may experience less encouragement for development. Their poor education and rural experience restrict their ability to adapt and be productive in competitive environments. However, few middle-aged doctors have the opportunity to practice in Liannan County Hospital. As they have generalist expertise but no cultural capital, these workers strive to secure their job position relative to young physician assistants who have achieved the speciality. In this game for endorsing security work motives (Kooji et al., 2011), these middle-aged professionals have a valuable asset – the social network acquired throughout the years (*guanxi*). By giving preference for interpersonal ties, the hospital eases the turnover of young physicians, which results in technical expertise loss and a continuous detachment from a culture of meritocracy (Littler, 2018).

Physicians, who moved to Liannan in latter adulthood, built their practice, initially in Liannan County Hospital, and later in metropolitan areas. They explored the opportunities offered by big hospitals and gained valuable experience and knowledge. Once primed for rural living through upbringing, these health workers felt encouraged to return 'home' at midlife. They have drawn to the rural practice for a combination of several motives, including a work motivation shift toward goals around affect. Specifically, these physicians seem to be motivated for social interactions that would bring emotional satisfaction at work and nonwork contexts (Kanfer & Ackerman, 2004). Studies focused on work motivation across the life span have consistently shown that midlife workers accept new jobs or work roles as a result of the reorganization of goals (Carsten & Spector, 1987), normative changes in the level of cognitive abilities (Ackerman et al,2001), and age-related changes in values, interests, and motives for action (Ryff & Baltes, 1976). In this research, in a remote and mountainous area, where the provision of healthcare is weak and the familial and social bonds are strong, the nontechnical considerations, such as mentorship activities, caring for others, and opportunities to solve healthcare provision weaknesses may represent particular value to these older physicians. Thus, once they perceive that they enjoy fewer development opportunities in metropolitan areas, they seem to find an opportunity to practice medicine in a very different way – a way that may ultimately offer them effective rewards and joys of serving the community (Hodges, Lee & Crutchfield, 2020). This phenomenon is succinctly expressed in Maslow´s (1943) hierarchy of needs, which suggests that higher-order needs for self-esteem and self-realization tend to occur in later adulthood, following the accomplishment of basic physiological and security needs

during early adulthood.

5.3 How challenges of rural practice can be turned into rewards and the incentive to stay in Liannan County Hospital?

Findings are consistent with many studies that identified rural upbringing, familiarity, community integration, and workplace environment as influential factors to develop a long-term commitment with the hospital (Hancock et al., 2009; Cosgrave, Malatzky & Gillespie, 2019; Cosgrave, 2020b). However, these factors do not explain the fact that some workers, who were raised in Liannan or other rural settings, choose to leave the hospital to return some (perhaps many) years later. Further, in the last years, many young physicians left the hospital after getting the speciality certification and some positions have not been filled yet. Presumably, some other factors influence the decision about where to practice. Constraints on pay, promotion, and recognition, for example, may exert adverse effects on job satisfaction and so dampen motivation to work in Liannan. Meanwhile, personal motivations associated with aging may also influence the decisions about where to practice. Therefore, HR managers should not simply put the emphasis on attracting and retaining health workers with rural background or rural identity. Instead, the analysis suggests that a multiplicity of person and work circumstances tend to interact and change across the life span. Thus, in response to this complexity and the need for defining organizational strategies and managerial practices that handle the actual situation, the author puts forward some recommendations to attract, recruit and retain talents, in general, and young physicians, in particular.

5.3.1 Recruitment and rural practice training

Encouraging young doctors to practice in rural and underserved areas is a long-term policy of the Chinese government. For instances, to alleviate the shortage of health talents in rural areas, in 2010 the Chinese Ministry of Health signed a document that stipulated free medical education for rural-raised students who aim to practice in rural communities. The idea was to foster the number of physicians in rural areas and so improve the rural healthcare services (National Development and Reform Commission [NDRC], 2010; Zhang, 2015). However, due to the small scale of enrollment, the number of state-subsided students cannot satisfy the needs of medical talents in remote and rural areas. From 2018 to 2020, the number of rural-raised students with grants enrolled in medical college every year was only about 6800, with an

average of less than 220 students allocated to each province (Liannan County People's Hospital, 2020). Given that there are 121 county-level areas and 21 prefecture-level cities in Guangdong, less than 2 medical students were allocated to county-level areas. Therefore, medical institutions in remote and remote areas continue to face the problem of a shortage of medical staff.

One possible way to ease the shortage of rural medical talents is to create rural training tracks or rural residency programs in medicine courses. Given that some students are hesitant about pursuing rural medicine, the medical school curricula may also include rural rotations that allow students to spend weeks or months in a rural community. The idea is to attract potential students to choose a rural practice and then carefully prepare them to succeed in remote and poor communities.

Studies have consistently shown that the promotion of rural training and/or rural residency experience is an important pathway to expand the physician workforce in rural areas. In China, this procedure has been implemented in underdeveloped central and western regions for ten years and the signs indicate that local healthcare institutions have been able to attract more medical graduates to practice in rural areas (Liu & Li, 2009; Tan, Wu & Xia, 2019). Further, some studies indicate that tailored training programs can better meet the needs of rural communities and provide a better quality of life to those who live there than the traditional graduate medical education (Liu & Li, 2009; Zhang, 2020). Hence, the author suggests that underdeveloped rural areas, such as Liannan County, should cooperate with medical schools to form a rural training track or rural residential programs in partnership. In this way, it will be possible to continuously provide qualified and competent health talents for rural medical institutions, such as county hospitals, township health centers and village clinics, thus easing the shortage of health talents and tackling recruitment difficulties in rural areas.

In addition, past studies pointed out that those who have plans to practice family medicine during their student life are most likely to practice in rural areas (Liu & Mao 2016). Based on this insight, another possible way to ease the shortage of rural medical talents is to encourage students to take up family medicine and then prepare them to practice in rural communities. However, knowing that most students are focused on medical specialization, incentives to choose family medicine may include financial assistance. Free medical education may be offered to these students in exchange for a period of medical work in targeted rural areas after graduation. According to social exchange theory (Cropanzano & Mitchell 2005), the parties involved can benefit from the exchange behaviors and achieve win-win results. The success of this exchange relationship depends, to large extent, on the level of trust, loyalty and

commitment over time (Cropanzano & Mitchell, 2005). Any failure to comply with the reciprocal rules will result in a financial punishment.

Another possibility is that medical schools identify potential candidates from rural and underserved communities, who might never have considered studying medicine before, and encourage them to select the medicine major. This can be done by inviting college students from remote and impoverished areas for a one-day session where presentations about medical career paths, the medical school application process, and financial grants can be introduced

5.3.2 Retention and inter-organizational collaboration

Young health workers, who decided to stay in Liannan County Hospital only for a short period of time, admit that working in rural areas gives them good learning opportunities at an early career stage. However, in a middle and long-term perspective, they experience stagnation and no career progress. This reality pushes them to look for other opportunities and soon leave the hospital. Unfortunately, this reality has been reported by other scholars. For instances, in 2019, in Sichuan province, Wu et al. (2020) found that medical and nursing staff were eager for further learning and education opportunities.

In 2017, the Chinese Government implemented the Guidance on the Pilot Work of Establishment of Medical Alliance (National Health Commission of the PRC, 2017) that recommends collaboration across different healthcare organizations. This document encourages hospitals in economically developed areas to assist disadvantaged healthcare institutions in remote areas with healthcare provision, including the exchange of knowledge and expertise and the realization of a more specialized range of healthcare services (Huang, 2020; Ding, 2009). Conversely, in an inter-organizational collaboration model, urban tertiary hospitals can improve their market/bargaining position in relation to other competitive healthcare providers by improving staffing or education positions (Van der Schors et al., 2021). Regarding the rural and unserved healthcare organizations, collaborative practices can benefit healthcare provision and quality of care. In the past few years, inter-organizational collaborations have also proved to be very effective in attracting medical talents to work and take roots in remote areas (Zhang, 2018; Lian, 2019; Liu & Hu, 2019). As Zhu and Kong (2019) noted, this kind of medical collaboration creates a platform to support professional development via privileged access to specialized training and educational resources.

Therefore, the author argues that the inter-organizational collaboration model is a way to address the barriers to career development and professional growth of health technicians in rural

areas, especially in economically backward and remote areas like Liannan County. The inter-organizational collaboration may enable hospitals in these backward areas to move from organizations lacking resources to members of a medical partnership, breaking the bottleneck in the upward mobility and breaking the ceiling of resource and technical monopoly. Such a model also enables health workers, who spend the early stages of their careers at rural villages, to receive professional mid- to late-career training in urban partner organizations, enabling them to be retained in rural areas.

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Chapter 6: Conclusions

To date, explanations for the shortage of health professionals in rural and underserved areas have highlighted personal aspects (e.g., work motivations, values and lifestyle choices), organizational aspects (e.g., work conditions and financial rewards), social aspects (e.g., opportunities for working spouses and schools for children) and career aspects (e.g., learning opportunities and promotions).

The findings of this study are as follow.

Factors that predict a choice for rural practice include rural upbringing, familiarity, community integration, and workplace environment. A good case is provided by almost all nurses. Their “rural” habitus consistently adhere to characteristically rural values, traditions and customs (Slama, 2004).

Relative to young doctors, whether with unqualified local doctors or qualified foreign doctors， goals and concerns often shift to career advancements and improving work conditions (Kooji et al., 2011)

Personal motivations associated with aging may influence their decision about where to practice. Doctors who have always had practice in rural areas may experience less encouragement for development. Their poor education and rural experience restrict their ability to adapt and be productive in competitive environments.

Doctors who once worked in the city have drawn to rural practice for a combination of several motives, including a work motivation shift toward goals around affect. Specifically, these physicians seem to be motivated for social interactions that would bring emotional satisfaction at work and nonwork contexts (Kanfer & Ackerman, 2004).

The findings from this research suggest that, in Liannan County Hospital, health workers choose to come, stay or leave a rural position for a multiplicity of reasons, including rural exposure, age-related changes in motivation, psychological contract breach and rural/urban habits. To improve the recruitment and retention strategies aimed at achieving a more stable and balanced medical workforce, this research also provides some recommendations for medical schools and hospital managers.

6.1 Implications

The results of this research have implications for scholars and practitioners.

6.1.1 Theoretical implications

Most of the research on attraction, recruitment and retention of health workers has been conducted in Western regions. This research extends prior knowledge by offering a new investigation about health workers' motivations to come, stay and leave in a rural and ethnic minority area, in China.

Further, studies have consistently focused on one particular health occupation and drawn interpretations that tend to be applied to other healthcare professional groups. This research revealed that doctors and nurses have different motivations at work and to continue working. This suggests that different health occupations should be studied further in the same context to understand better how personal habits, agency and adaptability influence their career moves.

Another major contribution of this research is the support found in the lifespan theories to interpret health workers' behaviors and life trajectories. To date, relatively little attention has been given to understanding the effects of aging and adult development on the shortage of health workers in rural areas. The findings from this research offer direct support for placing intrapersonal change over the life course in the context of one's decision to resign or secure a rural position. Participant narratives revealed that age-related changes in human need fulfilment help to explain the volatility of the medical workforce, particular among those who have an agentic orientation toward their career. As such, this research suggests that research on attraction, recruitment and retention of health workers can be extended to include the lifespan perspective as a key domain to develop effective motivational interventions.

6.1.2 Practical implications

The findings of this research may be useful toward several ends. First, medical schools may use this research's findings to evaluate numerous aspects of their curricula, specifically related to rural training, rural rotations and community participation. This research also revealed that health workers who grow up in rural communities are very likely to return to them after graduation or at middle age and beyond. Hence, by recruiting and supporting rural-raised students, medical schools can contribute to expanding the rural medical workforce and making provision of healthcare more accessible in rural areas. Similarly, by encouraging students to

enrol in family medicine, these medical schools can also contribute to expanding the rural medical workforce.

The findings may help Liannan County Hospital or other rural hospitals to encourage young physicians to continue working in rural and impoverished areas through the creation of medical partnerships with metropolitan hospitals. This kind of initiative may also help rural hospitals to attract new physicians to choose rural practice.

6.2 Limitations and future research

There are a few important limitations within this research to highlight. First, this research is exploratory in nature and data was gathered with few informants. Although the applied sampling approach and given sample size are appropriate for this kind of qualitative research, additional insights would become apparent in a larger sample. For instances, this research only includes very few respondents who joined Liannan County Hospital at middle age or beyond and no one from the top management team. Additional research that includes other actors is needed to minimize the potential bias inherent with the limitations of the actual sample.

Further, the research's focus was on medical workers at a county hospital in China, and this may have limited the identification of certain life experiences and trajectories. Future studies that include other health institutions at the county level could solve this issue. Further, the use of respondents from various health institutions at the village, town, or county level may yield different findings. In the future, research may also compare the reasons to choose rural practice across different occupational groups in different healthcare units.

The insights into aging and adult development influencing motivation at work and continuing working provided by this research need confirmation. Future research is also needed to look at the cultural beliefs underpinning the work motivation at early and later adulthood identified within Chinese culture.

Finally, this research is only the first step in investigating the health workers' reasons to come, stay and leave remote and unserved areas in China. Future qualitative or quantitative research can seek to validate the actual findings and provide more theoretical or practical implications regarding the relative importance of lifespan perspective to explain work experiences and life trajectories of health workers.

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