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Factors Associated with Turnover Intention of Contracted Nurses in Public
Shenzhen Municipal Hospitals

LIN Kun

Doctor of Management

Supervisor:

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ISCTE University Institute of Lisbon

January, 2024

Marketing, Operations and General Management Department

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BUSINESS
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Abstract

In China's public hospitals, nursing staff are categorized into two groups: non-contract nurses and contract nurses. Contract nurses, unlike non-contract nurses who often have lifelong employment, do not have job security as their employment is contingent on the validity of their contracts. The increasing demand for nursing care in China, coupled with a serious shortage of nursing staff and a decline in non-contract nurse positions, has led to a predominance of contract nurses in public hospitals. Understanding the turnover intention of contract nurses in Shenzhen Municipal Hospitals is therefore vital for effective nursing management.

Prior research has identified factors such as job satisfaction, burnout, and occupational identity as influential in nurses' turnover intentions. A cross-sectional survey involving 608 contract nurses from Shenzhen Municipal Hospitals was conducted to gather data on job satisfaction, burnout, and turnover intentions. For statistical analysis, a regression analysis model and a structural equation model (SEM) was employed. The study found a significant total effect of intellectual capital on the turnover intention of contract nurses. This effect includes both a direct effect and a mediating effect through career identity and career satisfaction on the willingness to leave. The study concludes that the propensity to leave among contract nurses in five tertiary public hospitals in Shenzhen, China, is relatively high. These findings could assist nursing personnel departments and institutions in developing policies to enhance job stability for contract nurses.

Keywords: Turnover intention, intellectual capital, job satisfactions, mental resilience, job stress, nurse intellectual capital and innovative capabilities

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Resumo

Nos hospitais públicos da China, o pessoal de enfermagem é classificado em dois grupos: enfermeiros não contratados e enfermeiros contratados. Os enfermeiros contratados, ao contrário dos enfermeiros não contratados que muitas vezes têm um emprego vitalício, não têm segurança no emprego, uma vez que o seu emprego depende da validade dos seus contratos. A crescente procura de cuidados de enfermagem na China, juntamente com uma grave escassez de pessoal de enfermagem e um declínio nos cargos de enfermagem não contratuais, levou a uma predominância de enfermeiros contratados nos hospitais públicos. Compreender a intenção de rotatividade dos enfermeiros contratados nos Hospitais Municipais de Shenzhen é, portanto, vital para uma gestão de enfermagem eficaz.

Pesquisas anteriores identificaram fatores como satisfação no trabalho, esgotamento e identidade ocupacional como influentes nas intenções de rotatividade dos enfermeiros. Foi realizada uma pesquisa transversal, envolvendo 608 enfermeiros contratados dos Hospitais Municipais de Shenzhen para recolher dados sobre satisfação no trabalho, esgotamento e intenções de rotatividade. Para análise estatística foi utilizado um modelo de regressão e um modelo de equações estruturais (MEE). O estudo encontrou um efeito significativo do capital intelectual na intenção de rotatividade dos enfermeiros contratados. Este efeito inclui tanto um efeito direto como um efeito mediador, através da identidade profissional e da satisfação profissional na vontade de sair. O estudo conclui que a inclinação para sair, entre enfermeiros contratados, em cinco hospitais públicos terciários em Shenzhen, China, é relativamente elevada. Estas descobertas poderiam ajudar os departamentos e instituições de pessoal de enfermagem no desenvolvimento de políticas para melhorar a estabilidade no emprego dos enfermeiros contratados.

Palavras-chave: Intenção de rotatividade, capital intelectual, satisfação no trabalho, resiliência mental, stresse no trabalho, capital intelectual dos enfermeiros e capacidades inovadoras

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摘 要

在中国公立医院，护理人员分为两类：非合同护士和合同护士。与通常终身雇用的非合同护士不同，合同护士没有工作保障，因为他们的就业取决于合同的有效性。中国护理需求的不断增长，加上护理人员严重短缺以及非合同护士职位的减少，导致公立医院中合同护士占据主导地位。因此，了解深圳市医院合同护士的离职意愿对于有效的护理管理至关重要。

此前的研究已经发现，工作满意度、职业倦怠和职业认同等因素对护士的离职意向有影响。对深圳市医院的 608 名合同护士进行了一项横断面调查，收集工作满意度、职业倦怠和离职意向的数据。对于统计分析，采用多元回归分析模型和结构方程模型（SEM）。研究发现智力资本对合同护士的离职意愿有显著的总体影响。这种效应包括直接效应和通过职业认同和职业满意度对离职意愿的中介效应。研究得出的结论是，中国深圳五家三级公立医院的合同护士离职倾向较高。这些发现可以帮助护理人事部门和机构制定政策，以提高合同护士的工作稳定性。

关键词：离职意向，智力资本，工作满意度，心理弹性，工作压力，护理智力资本和创新能力

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List of Acronym

ICM	Intellectual Capital Management
NOI	Nurse Occupational Identity
JSAT	Job Satisfaction
TOI	Turnover Intention
STRES	Job Stress
NPC	Psychological Job Fitness
RES	Mental Resiliency
NIC2	Nurse Intellectual Capital and Innovative Capabilities
AMA	American Medical Association
AACN	the American Association of Colleges of Nursing
IPRS	Intellectual Property Rights

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Chapter 1: Introduction

In Chinese hospitals, there are two primary categories of nurses: the first comprises older nurses, who are more likely to secure lifelong employment, and the second includes younger nurses, predominantly recent nursing school graduates, who are employed under termed contracts, typically for a minimum of three years per term. This arrangement necessitates that they sign contracts with hospitals without the guarantee of lifelong, automatic employment. Past research on the Chinese nursing workforce has often conflated these two distinct groups, a methodological approach that is not accurate. The principal objective of this thesis is to explore the latter category, specifically focusing on the turnover intentions of nurses who do not have lifelong employment contracts.

1.1 Research background

1.1.1 Nursing shortage as a global problem for human resource management of nursing staff

As health technology has advanced rapidly and the population has aged significantly, the nursing shortage has emerged as a critical issue impacting global health development. Nurses, integral to healthcare, are in increasing demand both in terms of quantity and quality, particularly in the current healthcare industry. With the expanding scope of nursing and the growing complexity of their roles, the creation of highly qualified nursing teams in public hospitals, especially in developing countries like China, has become a paramount concern. Consequently, the construction of high-level nursing teams is both urgent and crucial in the realm of hospital management.

The nursing shortage is a global health concern. Data from the United States (US) Department of Labour in 2013 indicated that the demand for registered nurses (RNs) in the US rose from 2.71 million in 2012 to 3.24 million in 2022, an increase of 19% (Nursing School Hub, 2023). Despite the rising demand, the supply of nurses has been insufficient. A 2013 survey by the National Council of State Boards of Nursing and the National Centre for Human Resources in Nursing Forum revealed that 55% of U.S. RNs were older than 50 years (National Council of State Boards of Nursing, 2013), suggesting that approximately one

million nurses would reach retirement age within 10 to 15 years.

Furthermore, study by the American Association of Colleges of Nursing (AACN) reported a vacancy rate of 7.1% in nursing faculty positions across 741 U.S. nursing schools. This shortage of faculty has constrained enrolment in nursing programs, indirectly exacerbating the clinical nurse shortage (AACN, 2022). The imbalance in supply and demand has intensified the severity of this issue. Similarly, the United Kingdom, another developed nation, has faced nursing shortages. According to the Royal College of Nursing (RCN), the national average nurse vacancy rate in 2015 was 10%, escalating to 17% in London (RCN, 2015).

Health institutions globally are facing a significant challenge due to nursing shortages and limited development of nursing staff. A survey by the American Medical Association (AMA) revealed a shortage of 126,000 nurses in 2001, escalating to 275,000 by 2010, with projections of this figure reaching 800,000 by 2020 (AMA, 2021). Similarly, the Canadian Nurses Association (CNA) predicted in 2013 that Canada would experience a shortage of 60,000 nurses by 2022 (M. E. Chen et al., 2016).

The National Health and Family Planning Commission (NHFPC) of the People's Republic of China outlined in its National Nursing Development Plan (2016-2020) that China had 3.24 million registered nurses in 2015, equating to 2.36 nurses per 1,000 population (NHFPC, 2017). In certain tertiary general and/or specialty hospitals in China, the nurse-to-bed ratio was as low as 0.4:1, significantly lower than the 1:1 to 1.6:1 ratios observed in other countries (China Ministry of Health, 2005). China faces a challenge with an insufficient and unevenly distributed nursing workforce, along with a need to enhance their professional quality.

Despite not being a developed country like the United States, the nursing shortage in China is still concerning. By the end of 2015, the total number of RNs in China had increased by 58.00% from 2010, with the nurse-to-population ratio rising from 1.52 in 2010 to 2.36 in 2015. The total number of nurses nationwide reached 4.45 million, adding 1.21 million new nursing positions since 2010, and the nurse-to-population ratio was expected to reach 3.14. Despite these improvements since 2010, there remains a significant gap compared to some developed countries and the targets set in the 13th Five-Year Plan.

According to the World Health Organization (WHO), there was a notable disparity in the number of nurses per 1,000 population across various countries as of the mid-2010s. The United States had 11.50 nurses per 1,000 people in 2014, Germany 13.48 in 2014, the United Kingdom 8.84 in 2015, Canada 9.50 in 2013, Australia 8.19 in 2014, Finland 14.51 in 2012,

Japan 10.80 in 2012, South Korea 5.67 in 2014, and Singapore 5.65 in 2014. This data highlights the significant gap between China and these countries in terms of nursing staff availability (WHO, 2020).

The shortage of nurses can have serious implications for patient safety in hospital care. Firstly, it can negatively impact patient safety and therapy outcomes, potentially leading to increased infection rates, longer hospital stays, higher incidences of medical errors, and reduced patient satisfaction. Secondly, the financial burden of nurse turnover is considerable. In the United States, the cost of a registered nurse's turnover is estimated to be 1.3 times their annual income (Underdahl et al., 2018). In Australia, the cost associated with nurse turnover is approximately 16,634 US dollars (O'Brien Pallas et al., 2010). These costs are attributed to various factors including recruitment, training, and other associated expenses.

Nurse turnover exacerbates not only the work stress of clinical nurses but also creates a detrimental cycle that diminishes the motivation of remaining nurses, potentially increasing their own intentions to leave. This issue arises because a nursing shortage intensifies the demand for nursing staff, which in turn may lead to higher turnover rates on the supply side. A 2014 survey by the National Health Planning Commission (NHPC) revealed that the average turnover rate of nurses in tertiary hospitals nationwide was 5.8%. In more developed regions like Shanghai and Guangdong, the rates were higher, at 8.0% and 10.0% respectively, with some hospitals experiencing turnover rates as high as 20% over three years (NHPC, 2014).

Furthermore, the China Healthcare Development Report 2015: Special Issues on Reform and Development of Chinese Public Hospitals (NHPC, 2015) reported a turnover rate of 10.2% in 2014 and 11.2% in 2015 among nurses in China, with up to 56.94% of nurses expressing an intention to leave. R. Wu and Lin (2017) found that the proportion of clinical nurses in tertiary hospitals with high or very high turnover intentions was alarmingly high, reaching 87.14%. These turnover intentions were identified as the direct cause of actual turnover behaviour. This data underscores the urgent need to address nurse turnover to ensure the stability and effectiveness of healthcare delivery.

In addition to the increasing turnover rate of nurses, another critical issue is the working conditions of those who remain in clinical positions. Some nurses choose to stay in their positions despite high intentions to leave, often due to the difficulties in changing jobs within their social environment. However, these nurses frequently exhibit low motivation, poor work efficiency, and pronounced burnout (Q. Wang et al., 2013).

This phenomenon is particularly pronounced in public tertiary hospitals. W. H. Liu et al. (2018) note that compared to primary and secondary public hospitals, tertiary hospitals are

often burdened with more severe patient conditions, a wider variety of complex diseases, and higher technical demands on healthcare workers. Additionally, these hospitals typically offer fewer opportunities for promotion due to the concentration of talent and intense competition.

A follow-up survey of 119 nurses who departed from a public tertiary hospital, reported by X. Liu et al. (2021), found that 42 (35.29%) of these nurses continued to work in nursing, but moved to secondary or community hospitals. Another survey targeting nurses who had left public tertiary hospitals revealed a similar trend, 12 nurses remaining in the nursing profession after leaving their former public hospital positions (Xie et al., 2015). This indicates that the decision to leave a position in a public tertiary hospital is not necessarily driven by a desire to exit the nursing field altogether.

As of 2018, data indicates a significant shortage of nurses in China's leading tertiary hospitals. According to the China Health Statistical Yearbook (NHC, 2019), institutions such as Southern Medical University Southern Hospital, Sun Yat-Sen University Affiliated Tumour Hospital, and Shanghai Sun Yat-Sen Hospital each faced a shortfall of over 1,000 nurses. Other tertiary hospitals reported nursing deficits ranging from 500 to 1,000.

The nursing shortage is further exacerbated by the varied hiring practices of tertiary hospitals. Some institutions directly employ nurses, making them hospital employees. In contrast, others resort to outsourcing, collaborating with nursing outsourcing companies to hire nurses to provide patient care. Contract nurses, who do not have lifelong employment contracts, exhibit higher turnover rates compared to their permanently employed counterparts (NHFPC, 2017). This trend contributes significantly to the high turnover rates observed among contract nurses in these settings.

A survey by the American Nurses Association (ANA) highlighted that high nurse turnover rates significantly contribute to poor nursing care and inadequate human resource management (Mohammad Mosadeghrad, 2014). The same survey found that 50% of young RNs leave their jobs within the first year, and 6% seek careers outside of nursing. For instance, the overall nurse turnover rate in Australia was around 15%, with variations across regions: approximately 12.6% in the southwest, about 14.5% in the southeast, and 16.7% in the west, influenced by opportunities for alternative non-nursing employment (Hatam et al., 2016). Factors such as medical system reform, unequal salary distribution, and inadequate medical resources have exacerbated the working conditions for nurses, leading to increased turnover rates. As the nursing field expands, the shortage of nurses is expected to become more pronounced (Rondeau et al., 2009).

High nurse turnover rates pose a significant challenge to health reform and the

development of public hospitals both in and outside China. Increased turnover rates heighten clinical burdens, directly impacting patient safety and the quality of nursing care (Shang et al., 2014). This situation could profoundly affect the medical profession's stability, including disciplines beyond nursing. It can lead to a shortage of skilled and experienced medical professionals, thereby hindering healthcare industry development. The inefficiencies resulting from high turnover rates also have the potential to significantly drain national medical resources, escalating healthcare costs for individuals and governments at all levels.

Moreover, the training and education of medical professionals represent a considerable investment, and the loss of these professionals due to burnout and dissatisfaction is a substantial waste of resources. Addressing this issue should be a priority for healthcare organizations, policymakers, and educational institutions. Nurses are crucial for maintaining the quality and sustainability of healthcare systems globally (Harris, 2016). Rapidly replacing experienced nurses with new ones in clinical work is impractical. Therefore, it is imperative for medical and health administrations to focus on retaining in-hospital nurses and reducing their turnover intentions.

In summary, the worldwide nursing shortage is a persistent issue, and efforts to increase nurses' willingness to stay and reduce turnover rates require a multifaceted approach. Turnover is the outcome of a complex interplay of various factors, including job satisfaction. Findings from previous studies indicate that nurses who have not left their positions may not necessarily be actively engaged in their work. Therefore, improving job satisfaction is arguably more crucial than merely reducing turnover rates. Enhancing job embeddedness and motivation among current nursing staff is vital in human resource management.

1.1.2 Factors influence nursing shortage in health system human resource

A significant correlation exists between nurses' turnover intentions and perceived organizational politics in both profitable and non-profitable public hospitals (Labrague et al., 2017). Since 1993, the personnel system of Chinese government agencies has become more independent, and the medical industry has developed its own system tailored to its specific needs (Hu, 2017). Contract employment is a key aspect of this human resource reform. A non-contracted nurse is a registered nurse employed on a contractual basis without a designated budgeted post within the medical establishment (F. Zhou & Wang, 2015). Hospitals employ numerous non-contracted nurses to meet clinical demands, thus increasing the number of contract nurses. These non-contracted nurses play a crucial role in alleviating nursing staff

shortages and ensuring the smooth operation of nursing work. However, differences in labour relations, salary, and welfare between contracted and non-contracted nurses, especially under the reform of the Chinese health system, lead to high turnover rates (J. Liu et al., 2014). Understanding the reasons behind contracted nurses' intentions to leave and the factors influencing their decisions is essential for addressing high turnover rates in China's public hospitals.

The distinction between contracted and non-contracted nurses in hospital management has grown more pronounced, especially with external challenges like the COVID-19 pandemic. Many contracted nurses remain in their roles, waiting for the opportunity to replace retiring non-contracted nurses. This situation is particularly relevant in China, where the retirement age for women is 55, younger than in other Asian countries. This dynamic has increased the attractiveness of established public hospitals, such as the one being studied.

Research relevant to this topic has shown a direct correlation between the salary levels of contracted nurses and their turnover intentions, which are key concerns in human resource management within healthcare organizations (Heilala et al., 2021). Studies indicate that higher salaries for nurses correlate with lower turnover intentions, underscoring the importance of competitive compensation in retaining skilled nursing staff and corroborating findings from previous research (Bender et al., 2019; Heilala et al., 2021). A mismatch between salary and work intensity, coupled with the inability to meet family living expenses, is a significant factor driving nurses to resign (Van der Heijden et al., 2019). Nurses with permanent employment often receive higher pay due to labour law protections, and in some cases, these permanently employed nurses, with less demanding roles than their contract counterparts, earn more (Halter et al., 2017).

In mainland China, nurses' incomes are generally lower than those of other health professionals, despite their longer working hours and greater work pressure (Jiang et al., 2016). A study in Hunan Province found that nurses' salaries significantly impact their psychological well-being, contributing to anxiety, depression, and ultimately turnover intentions (Liang et al., 2021). Further, a study in Sichuan Province revealed that nurses earn 12.33% less than physicians (X. Zhong et al., 2021), highlighting the disparity in pay. Low salaries are a crucial factor in nurses' decisions to resign, as they seek compensation that reflects their skill and output.

Since contracted nurses lack job security and benefits such as employer-provided pensions, they often desire higher salaries to compensate for these shortcomings. However, due to the difficulty in finding preferable employment, many contracted nurses remain

dissatisfied yet feel compelled to stay in their positions, contributing to low morale among this group (M. E. Chen et al., 2016; Gan et al., 2020; J. Liu et al., 2014; Meng et al., 2010).

Several factors contribute to the nursing shortage in healthcare systems. One significant factor is the aging population, which increases the demand for long-term care and, consequently, nursing personnel (Meng et al., 2010). Additionally, the rising retirement rates of experienced nurses widen the gap in the nursing workforce. Low morale and job satisfaction among nurses, limited career advancement opportunities, long working hours, and high stress levels further contribute to the shortage (Alshawush et al., 2020; E. Lee & Jang, 2020; Mohammad Mosadeghrad, 2014; Sun, 2016; Wolfgang, 1988). Other factors include a lack of investment in nursing education programs, inadequate job-sharing options, and decreased job security (Al-Qadi, 2021; Bambi et al., 2018; Copeland & Henry, 2018; Fasanya & Dada, 2016; Schablon et al., 2018; Tian et al., 2022; Xing et al., 2016). Addressing these issues is crucial to ensure a sufficient nursing workforce to support healthcare reform in China (W. H. Liu et al., 2018).

1.1.3 The realistic background of China

China, a populous country in East Asia with over 1.4 billion people, is the world's fourth-largest nation in terms of land area, covering approximately 9.6 million square kilometres. With a history spanning over 5,000 years, China is one of the oldest civilizations globally. The Chinese economy has seen rapid growth in recent years, making it the second largest in the world after the US. Known as a global manufacturing hub, China produces a wide range of goods, including electronics, textiles, heavy machinery, and electric automobiles. Governed by the Communist Party of China, China has made significant strides in education, technology, and infrastructure and is celebrated for its rich cultural heritage, including literature, art, philosophy, and religious traditions. China's global role has expanded recently, becoming more assertive and influential in international affairs. However, China also faces challenges like environmental degradation, an aging population, and imbalanced health resources (M. X. Chen et al., 2022).

The report from the 19th National Congress of the Communist Party of China emphasizes that the 21st century is characterized by a shift towards a knowledge-based economy, driven by intellectual capital (Ding, 2019). This contrasts with the industrial economy era, which relied heavily on material capital such as plants and equipment. The knowledge economy era, in contrast, hinges on intellectual capital, including intellectual property rights (IPRs),

organizational infrastructure, innovation capacity, staff knowledge structure, and enterprise core competence. This shift underscores the growing importance for directors and managers to effectively manage and enhance the value of intellectual capital (Dahlman & Aubert, 2001).

The concept of intellectual capital was first introduced by American scholar Galbraith in 1969, who viewed it as not only a dynamic form of capital but also a process of creating value through knowledge (Bontis, 1998). In 1991, Stewart brought the term “intellectual capital” into the realm of management (Stewart, 1991), further elaborating in 2001 that a company’s intellectual capital encompasses its talent (human capital), structural capital (such as intellectual property, methodologies, software, documents), and customer capital (client relationships) (Stewart, 2007, 2010). Edvinsson defines intellectual capital as a combination of human capital (the skills, insights, and potential of an organization’s members) and structural capital (assets wrapped up in customers, processes, databases, brands, and IT systems). This capital is essential for transforming knowledge and intangible assets into wealth by leveraging resources, multiplying human capital with structural capital (Edvinsson, 1997, 2002).

Intellectual capital, compared to other assets, holds immense potential for value creation. Empirical studies have demonstrated a significant positive correlation between intellectual capital and enterprise performance (Olawejaju & Msomi, 2021; Z. Xu, 2014). Qiang’s research in 2018 indicated that effective intellectual capital management (ICM) could foster staff innovation and motivate them, thereby reducing staff turnover to some extent. In summary, intellectual capital plays a crucial role in the contemporary value creation process for organizations, especially in the era of the knowledge economy.

1.1.4 Intellectual capital in nursing care

The application of intellectual capital theory in nursing has gained significant attention in recent years, driven by the need to recognize the value of intangible assets such as knowledge, expertise, experience, and innovation. These elements play a crucial role in the performance and sustainability of nursing organizations (Bu et al., 2016; M. E. Chen et al., 2016; Cui & Yi, 2013; Su et al., 2019). Research in this area focuses on exploring how nursing organizations can effectively manage, measure, and enhance their intellectual capital. Implementing ICM is seen as essential for achieving improved patient care quality and gaining competitive advantages in the healthcare market.

A positive correlation between nursing intellectual capital and hospital performance has

been established, with intellectual capital theory serving as a guiding framework for research on nurse staffing (Covell & Sidani, 2013a, 2013b). In the context of nursing, intellectual capital refers to the reserves of nursing knowledge within healthcare organizations (Covell & Sidani, 2013b). This encompasses both the nursing knowledge held by RNs and the organizational structures that support and facilitate effective clinical decision-making in the provision of nursing care. When these elements are effectively integrated, they can significantly contribute to the overall organizational performance in healthcare settings. In essence, by fostering a robust understanding of nursing theory and practice and implementing effective systems and processes, nurses are better equipped to make informed decisions (Kawauchi & Ohashi, 2011; Mills et al., 2017). This, in turn, helps their organizations achieve superior outcomes for patients and other stakeholders.

As of today, most Chinese enterprises, including those in the healthcare sector, have recognized the importance of intellectual capital (Gan et al., 2020). However, many still lack a clear management structure or understanding of how to enhance their core competencies through effective ICM (Y. P. Chang et al., 2018). Notably, there is a paucity of literature on the application of ICM in hospital nursing management within China. As the number of nurses grows, the base of knowledge staff in hospitals expands, placing increased emphasis on individual career development. Studies have shown that nurses' human capital is positively associated with their intention to improve professional capabilities (H. Y. Chang et al., 2019). Well-educated nurses, eager to learn and capable of innovation, find growth opportunities in public hospitals that practice effective ICM, thereby reducing their turnover rates (H. Y. Chang et al., 2019; Kenny et al., 2016).

Highly educated nurses bring advanced knowledge and skills in scientific thinking and research methods, enabling them to critically evaluate and apply the latest evidence-based research in their clinical practices. This competence in evidence-based practice contributes to improved patient outcomes and quality healthcare delivery (Connor et al., 2023; Sapri et al., 2022). By analysing research and data, nurses can identify effective interventions and enhance their professional development. Prioritizing evidence-based practices leads to more efficient, effective, and patient-centred nursing care, offering long-term advantages (Aiken et al., 2014).

The impact of inter-professional care models on work satisfaction and turnover rates among contracted nurses is still uncertain. To fill this knowledge gap, there is a need for studies investigating the association between ICM and the turnover intentions of contracted nurses. Such research is crucial for managers and policymakers. By exploring this area, the aim is to illuminate the potential benefits of ICM and its impact on job satisfaction and

retention rates among contracted nurses.

1.1.5 Resilience in nursing group

In Chinese public hospitals, the healthcare environment is marked by challenges that significantly impact the well-being and work satisfaction of nursing staff. Patients often present with a wide range of illnesses, and their health conditions can change rapidly. This, combined with low bed-to-nurse ratios, places considerable strain on nursing staff, potentially compromising the quality of patient care. Additionally, the intense nature of doctor-patient relationships can lead to burnout and heightened stress levels among medical professionals (J. Chen, 2012; L. Wang et al., 2011; X. G. Zhang & Guo, 2008). A growing concern in this setting is workplace violence, where healthcare professionals, including doctors and nurses, face verbal or physical abuse from patients or their families (W. H. Liu et al., 2018).

Nurses in public hospitals are particularly vulnerable to stress due to safety risks, increased workload, alternating day and night shifts, empathy fatigue, and a diminished sense of professional value (Guo et al., 2019; W. H. Liu et al., 2018). A study by F. Zhou and Wang (2015) highlighted that nursing, as a specialized career, is associated with high levels of occupational stress, adversely affecting personal health and work quality. This stress is a critical factor influencing job satisfaction, which in turn directly determines nurses' turnover intentions (Pishgooie et al., 2019; Sun, 2016).

Research among nurses in high-intensity settings has shown that higher levels of resilience correlate with increased hope and reduced stress (Rushton et al., 2015). Consequently, many studies emphasize that resilience – the ability of individuals or organizations to rapidly design and implement positive adaptive behaviours – is essential in the nursing profession. Developing and nurturing resilience can help mitigate the adverse effects of the challenging work environment in healthcare, thereby improving nurses' job satisfaction, reducing turnover intentions, and ultimately enhancing the quality of patient care (Aburn et al., 2016; Grafton et al., 2010).

Mallak (1998) underscores the concept of resilience as the ability to adapt effectively to immediate situations while enduring minimal stress. Aburn et al. (2016) identified five key definitions or concepts of resilience: rising above to overcome adversity, adaptation, and adjustment, 'ordinary magic', good mental health as a proxy for resilience, and the ability to bounce back. In nursing, a strong link between burnout and resilience has been observed. Greater resilience can shield nurses from emotional exhaustion and contribute to a sense of

personal accomplishment (Rushton et al., 2015).

Among Chinese healthcare workers, resilience is positively associated with job satisfaction, work-life balance, and quality of life, and inversely related to workplace injuries and physical/psychological symptoms (Siu et al., 2009). However, the relationship between nurses' turnover intention and resilience has been less explored. M. Yu and Lee (2018) reported a negative correlation between nurses' turnover intention and resilience. Additionally, intellectual capital might have a beneficial effect on nurses' resilience. A study by Gensimore et al. (2020) indicated that social capital could minimize nurses' burnout effects.

Investigating the relationship between intellectual capital, resilience, and turnover intention among nurses is crucial, especially in the healthcare industry, where the loss of experienced nurses can adversely affect patient care and outcomes. Understanding the factors influencing nurses' resilience is essential to prevent or reduce their turnover intention. A deeper comprehension of these factors could lead to the development of targeted interventions or programs designed to enhance nurses' ability to manage job-related stressors, thereby promoting their long-term retention in the profession. This approach is vital for maintaining a stable and effective nursing workforce, which is fundamental for delivering high-quality patient care.

Managing human resources effectively is a crucial component of hospital competence (R. Huang, 2008). Health institutions are increasingly challenged by the loss of medical talent, particularly with the rise of private and foreign-invested hospitals offering higher salaries, which draw medical professionals away from big public hospitals (Kim & Jang, 2011). Consequently, hospitals are actively seeking ways to retain their medical teams.

There is a noted positive correlation between job retention and nurse resilience (F. Yu et al., 2019). A systematic review indicated that participation in nurse resilience programs could increase retention rates among new nursing graduates (Van Camp & Chappy, 2017). Additionally, nurse retention may be influenced by intellectual capital and turnover intention. H. Y. Chang and Chu (2019) reported that nurses' human capital positively correlates with affective, normative, and continuance professional commitment, all of which are inversely related to professional turnover intention. In modern hospital management, human resources are seen as the most crucial element (Oman et al., 2012). Effective management and sound hospital policies are essential for stabilizing the nursing team (Labrague et al., 2017).

In this context, this study aims to explore the influencing factors of nurses' turnover intention, the relationship between ICM, resilience, talent retention, and turnover intention among contracted nurses in public hospitals, and strategies for public hospitals to retain

medical talents and reduce the turnover rate of nurses.

Addressing these questions is vital for hospital management to ensure the retention of skilled nursing staff and the overall effectiveness of healthcare delivery. Understanding these dynamics will enable healthcare institutions to develop targeted strategies to maintain a stable and competent nursing workforce, which is fundamental for providing high-quality patient care.

1.2 Research objectives and significance

1.2.1 Research objectives

This thesis aims at identifying and elucidating the determinants and underlying mechanisms of nurse turnover at five public hospitals in Shenzhen, thereby augmenting the extant body of literature on nurse turnover. It formulates hypotheses about the factors influencing the turnover of contracted nurses in these institutions based on literature and theoretical analyses and establishes a structural equation model specific to nurse turnover in these hospitals. The thesis involves the collection and subsequent analysis of data through surveys to empirically test the formulated hypotheses.

Drawing on the findings from the tested hypotheses and the analysis of the structural equation model, the thesis offers strategic recommendations aimed at mitigating turnover intentions among contracted nurses in the hospitals. These strategies are designed to retain nursing talent, consequently contributing to the enhanced development of these healthcare facilities.

The study attempts to provide valuable insights and serves as a reference for nurse management in comparable public hospitals, assisting them in implementing more efficacious management strategies to diminish nurse turnover intentions.

1.2.2 Research methods

This research aims to address the existing gap in understanding the relationship between contracted nurses' work satisfaction, occupational identity, and turnover intention, particularly focusing on the significant impact of hospital management. To this end, the study explores the influence of ICM on the turnover intention of contracted nurses. It delves into the concept of nursing intellectual capital, which encompasses human capital, organizational capital, and relational capital.

Human capital refers to the individual competencies, skills, and expertise of nurses. Organizational capital includes the resources, processes, and systems within the hospital that support nursing work (Bontis & Fitz Enz, 2002; Donaher et al., 2007; Rondeau et al., 2009). Relational capital pertains to the connections, networks, and relationships that nurses establish with colleagues, patients, and other stakeholders. This study seeks to investigate how ICM affects these various facets of nursing intellectual capital, thereby contributing to a more holistic understanding of the factors influencing nurse turnover intention.

The research also examines the role of resilience in the work satisfaction of contracted nurses. It posits that the ability of these nurses to effectively navigate and rebound from challenges significantly influences their job satisfaction. Therefore, health organizations are encouraged to focus on building the resilience of their contracted staff to foster positive job satisfaction among them.

The study raises several pertinent questions: Does the resilience of contracted nurses predict turnover intention, and how does nursing ICM influence this relationship? Do talent retention policies affect the turnover intention of contracted nurses, and how can hospitals optimize these measures to reduce such intentions? The research findings are crucial, revealing a strong correlation between ICM, resilience, and turnover intention. It suggests that effective ICM implementation could potentially reduce nurse turnover intention.

The results of this study provide valuable insights for policymakers and hospital management, offering guidance on targeted interventions to address nurse shortages and reduce turnover rates. The study emphasizes the importance of robust ICM practices in enhancing resilience and talent retention among nurses, leading to increased job satisfaction, and reduced turnover intention. This research makes a significant contribution to the field of nursing, offering practical recommendations with far-reaching implications for healthcare systems globally.

1.2.3 Research significance

The theoretical significance of this study lies in its proposal of a new model for understanding the turnover intentions of contracted nurses. By conducting a real survey of contracted nurses, the study deepens the understanding of the relationship between various variables, particularly ICM and turnover intention, while controlling for demographic and organizational factors.

The global nursing staff shortage and the high turnover rate of nurses present significant challenges for human resource management in nursing. Prior research has predominantly

focused on demographic factors such as job satisfaction or professional commitment as reasons for nurse turnover. However, most of these studies have overlooked the varying impacts of different factors on nurses' turnover intentions depending on their type of contract. This oversight is critical, as understanding the unique dynamics related to contracted nurses is essential for developing effective strategies to address turnover.

This study's approach offers practical value in guiding nursing managers to take appropriate measures to stabilize the nursing workforce. By comprehending the true nature of nurses' contract types, nursing managers can develop targeted strategies that address the specific needs and challenges of contracted nurses. This understanding is crucial for improving nurse retention, ensuring a stable nursing workforce, and ultimately enhancing the quality of patient care in healthcare systems.

1.2.4 Conceptual model

The proposed model in this study aims to analyse the turnover intention of contracted nurses in Shenzhen's public tertiary hospitals from multiple perspectives. The approach involves two main research methods:

1. **Instructive Research Methods:** This aspect of the study involves a comprehensive literature review. The researcher systematically searched databases like PubMed, Web of Science, Embase, and SCOPUS up to December 2021. The search utilized relevant terms such as "turnover," "intellectual capital," "resilience," "retention," and "influence". The information extracted from the selected studies was synthesized in a narrative format, providing a solid theoretical foundation for the study.

2. **Practical Research Method:** Building on the literature review, the study conducted a large-scale survey to gather data on the turnover intentions of contracted nurses and the factors influencing these intentions in Shenzhen's public hospitals. The survey aimed to ensure a comprehensive and representative data collection. The collected questionnaires were meticulously sorted, with those containing false or contradictory responses being removed to maintain data integrity.

The study uses a regression analysis to identify key variables and then employs a structural equation model to analyse the path relationships between career identity, job satisfaction, work stressors, Intellectual Capital Management (ICM), mental resilience, and turnover intention among contracted nurses.

This combination of theoretical and empirical research methods allows for a nuanced

understanding of nurses' turnover intentions. In the model, the variables in red (Demographic and Organizational variables) are considered examples of variables that can condition the other variables. However, these variables, considered constant external variables, will not be analysed in this study. The organizational and demographic variables assist in interpretation, yet do not constitute elements of the model; consequently, they will not be the focal point of this analysis. The conceptual model (see Figure 1.1) is expected to offer valuable insights into the complex dynamics driving turnover among contracted nurses in public hospitals. This understanding is crucial for developing targeted strategies and interventions aimed at improving nurse retention and, consequently, the quality of patient care in these healthcare settings.

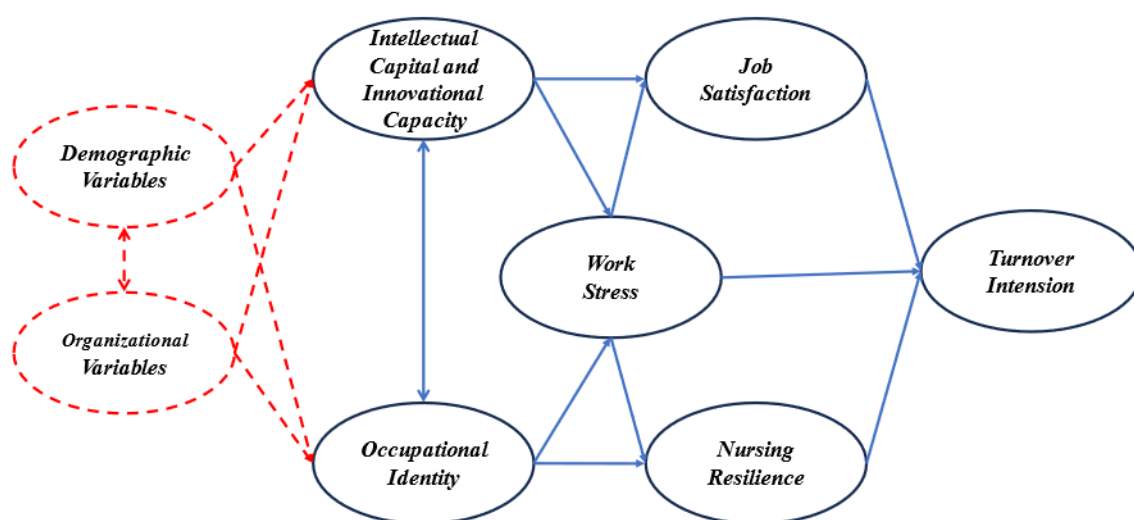


Figure 1.1 The turnover intention model for contracted nurses proposed in this study

1.3 Research questions and thesis structure

1.3.1 Research questions

(1) What are the factors that directly and/or indirectly influence the turnover intention of contracted nurses in public hospitals?

The global nursing shortage, often attributed to high turnover rates, presents a complex scenario, especially in the context of China. While some critics point to high nurse turnover as a major cause of this shortage (Mohammad Mosadeghrad, 2014), the situation in China indicates a more nuanced picture:

a). Differences in Turnover Rates Between Contracted and Non-Contracted Nurses: In

China, the overall nurse turnover rate, particularly among non-contracted nurses, is relatively low compared to contracted nurses in public hospitals. According to a report (NHFPC, 2017), the average turnover rate for nurses in tertiary hospitals across China was around 5.8%. However, this rate was significantly higher in more economically developed regions such as Beijing, Shanghai, and Guangdong, where it ranged from 8% to 10% (Sokhanvar et al., 2016). This disparity suggests that nurse retention is a more pressing issue in areas with higher economic development, highlighting the importance of understanding the specific challenges faced by contracted nurses.

b). Impact of Stress on Turnover: Nurses working in Chinese public hospitals are exposed to various stressors, including safety risks, heavy workloads, shift work, empathy fatigue, and a diminished sense of professional value (Guo et al., 2019; W. H. Liu et al., 2018). High stress levels can significantly impact work satisfaction and, consequently, turnover likelihood. Employees experiencing high stress may become disengaged and less committed whose propensity ~~inclined~~ to leave their jobs is higher, leading to increased turnover rates and associated costs for healthcare organizations (Sun, 2016; Yao et al., 2018).

Given these considerations, investigating the turnover intentions and the factors influencing them among contracted nurses in public hospitals is crucial. Such an investigation can provide valuable insights into the specific conditions and challenges leading to high turnover rates among this group. Understanding these factors is essential for healthcare providers and administrators, particularly in economically advanced regions, to develop targeted strategies to improve job satisfaction, manage stress effectively, and enhance overall work conditions. These efforts could significantly contribute to better nurse retention, ultimately addressing the nursing shortage in a more strategic and effective manner.

(2) What is the relationship between ICM and turnover intention?

Intellectual capital management (ICM) encompasses the process of identifying, cultivating, and harnessing the knowledge, competencies, and skills possessed by employees within an organization to generate value (Bontis et al., 2000; Brooking et al., 1998; Stewart, 2010). Conversely, turnover intention refers to an employee's likelihood of voluntarily leaving their organization in the near future (Belete, 2018; Weisberg & Kirschenbaum, 1991). Numerous investigations have delved into the association between ICM and turnover intention, yielding diverse outcomes.

Certain studies have revealed that heightened levels of ICM are linked to diminished turnover intention among employees (Covell & Sidani, 2013a; Gogan et al., 2014; Olarewaju & Msomi, 2021; Santos-Rodrigues et al., 2013). This phenomenon arises because a robust

culture of knowledge dissemination and continuous learning within an organization can elevate employee engagement and job satisfaction, thereby diminishing the propensity for turnover (Qiang, 2018). Intellectual capital, comprising human capital, structural capital, and social/relational capital dimensions (Edvinsson, 2002), has been explored in a Canadian survey, which established that greater investment in nursing human capital correlates with reduced nurse turnover rates. Additionally, a negative correlation between social capital and nurses' propensity to professionally turn over has been substantiated (H. Y. Chang et al., 2019).

Prior research has identified a connection between intellectual capital, resilience, talent retention, and turnover intention (Gensimore et al., 2020; Rondeau et al., 2009; M. Yu & Lee, 2018). However, the intricate interplay between these four variables and whether they exert a mediating influence on one another remains underexplored in existing literature. A comprehensive examination of this issue is notably absent in prior studies.

Nonetheless, contrasting findings have emerged in other studies (Belete, 2018), which have failed to establish a significant relationship between ICM and turnover intention. Some scholars posit that this variance may stem from disparities in how ICM is conceptualized and assessed across various studies (An et al., 2015). While certain studies concentrate on how organizations manage and harness their intellectual capital, others emphasize the individual-level experiences of employees. In sum, it is evident that the relationship between ICM and turnover intention is intricate and multifaceted (Brooking et al., 1998; Lin, 2014; Nedjati & Izbirak, 2013; Petty & Guthrie, 2000).

Organizations that prioritize ICM and cultivate a culture of knowledge sharing and continuous learning may have the potential to mitigate turnover intention among their workforces (Nuryaman, 2015; Riahi Belkaoui, 2003). Nevertheless, to gain a comprehensive understanding of the underlying mechanisms governing this relationship and to formulate effective strategies for intellectual capital management and employee retention, further research is imperative.

According to prior research (Sun, 2016), turnover intention represents a disposition formed by employees following an overall evaluation of the organization. It encompasses a comprehensive reflection of an individual's dissatisfaction with their current job, contemplation of leaving, exploration of alternative job opportunities, and the likelihood of securing alternative employment. It is established that turnover intention is a stable propensity grounded in an employee's holistic assessment of the organization (Belete, 2018). However, whether ICM influences nurses' turnover intention remains an unexplored facet in Chinese

research (M. E. Chen et al., 2016; W. W. Yang & Huang, 2015). Further investigations into these matters should be pursued and deepened continuously.

1.3.2 Thesis structure

The thesis structured as follows:

Chapter One: Introduction. This chapter provides an overview of the study, including the research background, significance, challenges, and issues. It also outlines the technical approach adopted in the study.

Chapter Two: Literature Review. In this chapter, the study reviews relevant literature, summarizing key issues and findings related to the research topic.

Chapter Three: Conceptual Framework and Research Method. Chapter three presents the conceptual model used in the study and outlines the statistical methods employed. It includes details on the design of interviews and questionnaires, as well as the measurement of relevant variables. Additionally, the chapter discusses the reliability and validity tests conducted for the constructed measurement scales.

Chapter Four: Research Results. This chapter primarily focuses on presenting the research findings. It includes socio-demographic information about the study samples and provides analyses related to differences and correlations within the data.

Chapter Five: Implications for Medical Management. Chapter five discusses the implications of the research results for the field of medical management. It also provides recommendations based on the findings.

Chapter Six: Conclusion and Future Research. The final chapter of the thesis offers a conclusion summarizing the key outcomes of the study. It also provides suggestions for future research directions.

This arrangement provides a clear structure for the thesis, guiding readers through the various aspects of the research process and its outcomes.

1.4 Technical route

The technical route of this study is shown in Figure 1.2.

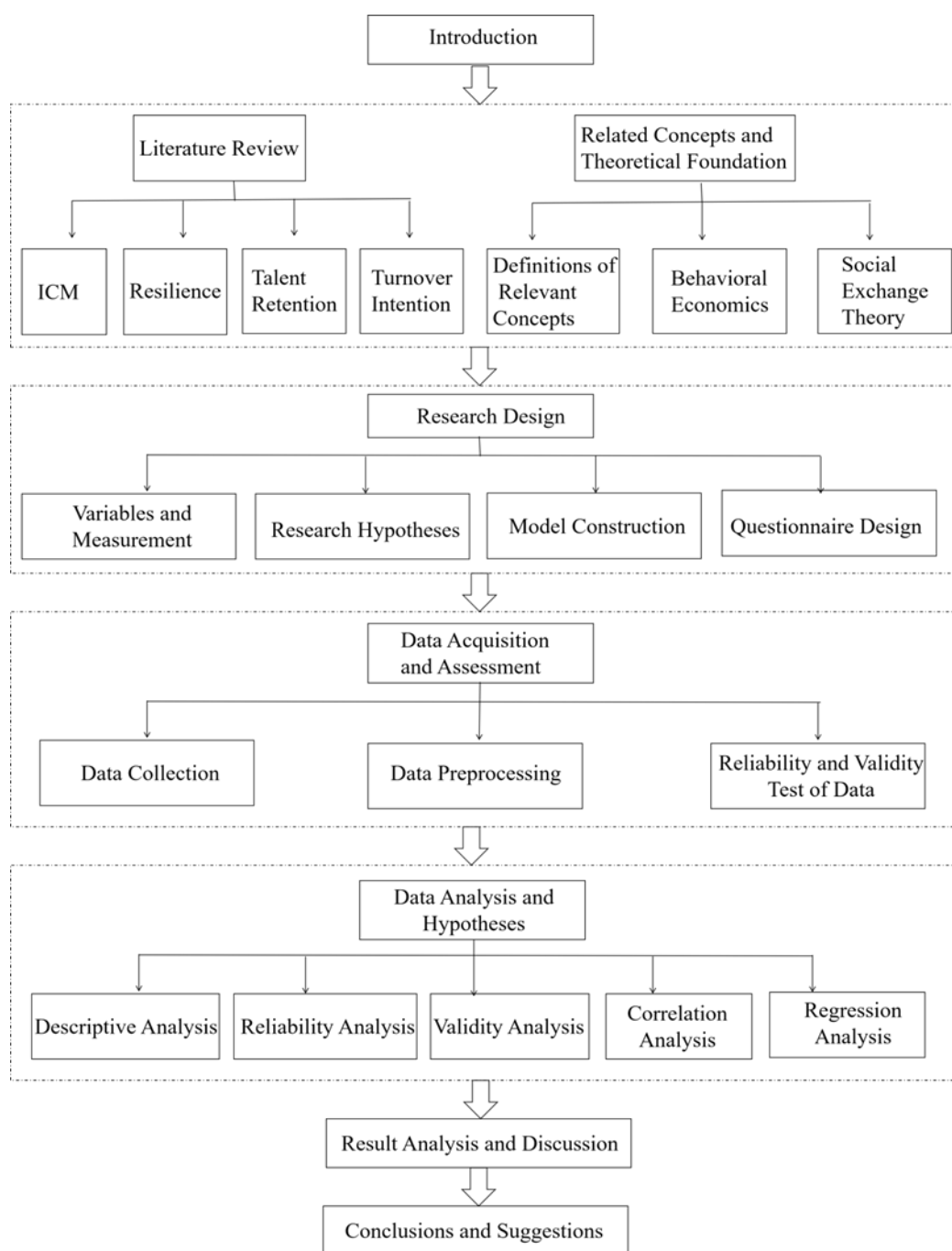


Figure 1.2 The technical route of this study

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Chapter 2: Literature Review

To conduct this study, an extensive search of multiple databases was initiated, spanning from January 2000 to December 2021. The databases employed for this search encompassed PubMed, Web of Science, Embase, and SCOPUS. The search terms employed in this study encompassed key phrases such as “turnover,” “turnover intention,” “intention to leave,” “retention,” “burnout,” and other pertinent terms. Relevant studies that aligned with the research model were identified, and their pertinent details were extracted and synthesized using a narrative style. This comprehensive search strategy facilitated a thorough analysis of the variables within the research model.

2.1 Turnover intention (TOI)

2.1.1 The concept of turnover intention

In the realm of organizational behaviour, turnover has been a longstanding focal point of research. Whether examining turnover behaviour, turnover intention, or factors linked to turnover, much attention has been devoted to the departure of regular employees. However, the turnover dynamics within nursing staff, particularly contracted nurses, present a unique context. This section will elucidate the model of turnover intention specific to contracted nurses.

2.1.1.1 Research on turnover intention of nursing staff

Existing research literature suggests that the study of turnover intention among nursing staff gained traction in the last century (Meng et al., 2010; W. W. Yang & Huang, 2015). Nonetheless, these studies have left several crucial questions unanswered. These include:

Whether turnover intention among nursing staff is a universally consistent phenomenon, implying that the turnover intention of nursing staff worldwide is essentially uniform.

Given the diverse roles and responsibilities within nursing staff, does turnover intention vary based on the specific type of nursing staff? Should distinct models for turnover intention among nursing staff be developed for different countries or regions to elucidate the specific turnover dynamics?

Among these inquiries, the third holds particular significance as it offers a framework for

investigating the issue of heightened turnover intention among contracted nurses in public municipal hospitals in Shenzhen.

In a broader context, public hospitals occupy an indispensable role in the Chinese healthcare system. These institutions provide vital healthcare services and are accessible to a substantial portion of China's 1.4 billion population. Public hospitals are government-owned and operated, catering to the healthcare needs of many low-income individuals and families. Moreover, they play a pivotal role in advancing medical research and training healthcare professionals, contributing significantly to the overall growth and development of the national healthcare system. Public hospitals also serve as the primary platforms for the public seeking medical treatment for severe illnesses (M. Y. Yang, 2016).

The ideal scenario is characterized by full staffing, but the reality presents a leaner picture. In China, the aspiration of achieving an ideal nursing staff level remains elusive due to a persistent shortage. Despite an overall increase in the total number of nursing staff, the proportion of nurses actively engaged in their practices has declined (X. Liu et al., 2021; Meng et al., 2010). This predicament is not unique to China, as evidenced by the State of the World's Nursing Report 2020, which reveals that the global count of nurse practitioners has reached 27.9 million, with 19.3 million lacking proper nurse licenses. Nurses constitute the largest occupational group in the healthcare sector, comprising approximately 59% of all health professionals (WHO, 2020). However, the shortage of nurses persists, even as the total number of nursing staff continues to grow. This expansion falls short of meeting the demands posed by population growth and the adoption of new nursing technologies.

Furthermore, factors such as workplace violence, injuries, high levels of burnout, inadequate salaries, and deficiencies in medical resources collectively contribute to a significant and steadily increasing nursing turnover rate (Park & Ko, 2020; Yun & Yu, 2021). According to statistics, it is projected that by the year 2030, the shortage of nursing staff will surpass five million (WHO, 2020).

Previous research has consistently demonstrated that the shortage of nursing staff is closely associated with an elevated patient mortality rate and is intricately linked to suboptimal healthcare outcomes (Aiken et al., 2014). Moreover, the increased turnover rate not only amplifies the clinical workload but also exerts significant financial pressures on hospital budgets. Research by Roche et al. (2015) revealed that the average cost of nurse turnover across three Australian states amounted to 49,255 US dollars per full-time equivalent. Notably, "Temporary Replacement" consistently represented the largest single cost component, accounting for 44.4% of the total costs (Roche et al., 2015). However, the

persistently high nurse turnover rate has emerged as a hindrance to the reform and progress of public hospitals (M. Y. Yang, 2016). Nursing staff turnover is an observable phenomenon within the context of hospital management reform, and turnover intention serves as the pivotal predictor of actual nursing staff turnover (L. C. Yang et al., 2020).

The turnover intention among nursing staff has emerged as a prominent and extensively studied issue within Chinese healthcare institutions. Numerous studies have been developed to elucidate the underlying reasons behind nurses' propensity to turnover (J. Chen, 2012; M. E. Chen et al., 2016; J. Liu et al., 2014; X. Liu et al., 2021; Luo & He, 2010; Meng et al., 2010; J. Wang et al., 2020; T. T. Yang et al., 2020; W. W. Yang & Huang, 2015). This study endeavours to contribute to this body of research by proposing a theoretical framework aimed at explaining the turnover intention specifically among contracted nurses.

2.1.1.2 The definition of nursing turnover intention

Porter and Steers (1973) conducted a seminal study on the turnover intention of regular employees and discovered that employees' decisions to leave their jobs were strongly influenced by their job satisfaction and the availability of new job opportunities. They viewed turnover intention as a reaction to dissatisfaction with one's current job—a desire to a flinch and escape.

Tett and Meyer (1993) provided a definition of turnover intention as a conscious and deliberate intention to depart from an organization. Ngo-Henha (2018), on the other hand, defined turnover intention as an indication of the likelihood that an employee will voluntarily leave their job in the near future. Mobley argued that turnover intention represented a comprehensive reflection of an individual's job dissatisfaction, with indicators such as job burnout, job searching, and accepting new job offers all signifying a strong intention to leave (Yildiz et al., 2009). These definitions encompass both the causes of turnover intention and subsequent behavioural intentions, highlighting that turnover is a process that begins with intention. This perspective aligns with Rudman et al.'s definition of turnover intention (Rudman et al., 2014).

Turnover intention encompasses a significant aspect of an employee's evolving attitude toward exploring alternative job opportunities and leaving their current employment. It constitutes a complex transformation in an employee's mindset regarding their current and prospective jobs and can serve as a precursor to actual turnover actions. Many experts contend that turnover intention offers the most accurate prediction of an employee's likelihood to quit their current job (Belete, 2018; Heilala et al., 2021; Kawauchi & Ohashi,

2011; Takase et al., 2005; Y. Zhao et al., 2021). Essentially, turnover intention is a critical factor that can ultimately lead an employee to decide to leave their current organization and explore alternative employment opportunities.

2.1.2 The dimensions of turnover intention

In prior research on turnover and its intention, one of the most influential models is the Administrative Model of Turnover Intention proposed by March and Simon (1993). Drawing on Maslow's hierarchy of needs and Herzberg's two-factor theory, their model delves into the underlying causes of turnover. A turnover decision is shaped by two primary determinants: rationality and available alternatives (Bing et al., 2013; Labrague et al., 2017). These factors illustrate the dual influences on turnover: rationality and potential options.

The first determinant, rationality, involves personal logical analysis. Employees engage in rational assessment, logically identifying influential factors and making non-impulsive decisions. In essence, employees analyse the merits and demerits of both their current and prospective jobs before arriving at a decision. In other words, the decision to be rational or to ultimately leave hinges on the result of rational analysis.

The second influential factor is the availability of new job opportunities. If there are no new job opportunities, or if the potential new jobs are perceived to bring more harm than good, employees have the propensity to change positions and have no intention to turnover. However, there are instances when, upon weighing the pros and cons of turnover, such as considering family opposition, changing jobs becomes less practical, leading employees to refrain from making the switch.

Ultimately, both rationality and alternatives are integral considerations when employees contemplate job turnover (Ngo-Henha, 2018; Rahman & Nas, 2013). Individuals must carefully evaluate both factors before making a final decision. Factors such as job satisfaction and the availability of alternative job options within organizations impact the rationality of an organization's turnover (March & Simon, 1993).

Price (1989) developed a process turnover model that positioned job satisfaction as a crucial mediating factor in staff turnover. In this model, job satisfaction is treated as a dependent variable influenced by factors such as salary, integration, feedback mechanisms, communication styles, centralization, and job-related stress.

Mobley (1977) introduced an intermediate linkage model that included burnout as a mediating variable between job satisfaction and turnover intention. This model aimed to

elucidate the psychological processes that staff undergo when making turnover decisions. He also introduced a staff withdrawal model, which encompasses the mutual influence of individual, organizational, and market variables on turnover behaviours.

Price-Mueller's turnover model (Kim et al., 1996; Price, 2001) represented an enhancement of Price's (1989) process turnover model. This revised model reorganized variables into five categories: intervening variables, constructs, environmental variables, personal variables, and control variables.

Bluedorn (1982) presented a unified model of organizational turnover, synthesizing Price-Mueller's turnover model, while also incorporating research on the relationship between organizational commitment and turnover. This comprehensive causal model offers insights into the complex dynamics of turnover (C. P. Lin, 2019; C. P. Lin et al., 2017; Rahman & Nas, 2013).

Bakker and Demerouti (2007) introduced the Job Demands-Resources model of turnover, which posits that job-related stress is linked to both job demands and job resources. Job demands encompass physical, psychological, social, or organizational aspects of the job that necessitate sustained physical and/or psychological (cognitive and emotional) efforts or skills and are therefore associated with certain physiological and/or psychological costs. In contrast, job resources comprise the physical, psychological, social, and organizational aspects of the job that facilitate goal achievement, reduce work demands, or promote personal growth, learning, and development (Demerouti & Bakker, 2011).

Building upon this model, researchers have explored factors predicting turnover intentions. Heilala et al. (2021) classified general workload and emotional workload as job demands and leadership satisfaction and participation as job resources. Their model revealed that both general workload and emotional workload were linked to turnover intentions, mediated by job demand participation. However, leadership satisfaction did not mediate the relationship between workload and turnover intentions.

Moloney et al. (2018) developed a comprehensive model of nursing turnover intention based on the Job Demands-Resources model. Their findings indicated that higher engagement correlated with lower turnover intention. Burnout had a significant impact on turnover intention through reduced engagement. Additionally, most of the demand and resource variables (except professional development) affected turnover intention, with greater workload and work-life interference emerging as the strongest predictors. However, the emergence of burnout is a complex matter, as the timing and circumstances that lead to negative emotions and its classification as burnout in various nursing roles have been subjects

of debate. Furthermore, higher emotional demands (challenges) and greater self-efficacy also played substantial roles in reducing turnover intention through increased engagement.

Peterson and Wilson (2002) aimed to address job stress and promote a healthy organizational environment. They introduced a Culture-Work-Health Model designed to enhance the interplay among elements such as organizational culture, management systems, employee health, organizational health, and the quality of work life. Building on this framework, E. Lee and Jang (2020) developed a model for nurses' turnover intention. In their model, fatigue and job stress exerted direct effects, while organizational culture had indirect effects on turnover intention.

Based on the analysis provided, predictors of turnover intention among nurses encompass factors such as job satisfaction (including salary and promotion), burnout, job stress, emotional demands (challenges), self-efficacy, workload, work-life interference, participation, and organizational culture (Belete, 2018; Ngo-Henha, 2018; Rahman & Nas, 2013). While some of these variables may be context-specific, their significance in theoretical models of turnover intention is evident. Nonetheless, it remains open to debate whether these variables should be present in varying contexts. Nevertheless, these explorations of turnover intention models offer valuable insights for future studies focusing on nurse retention.

2.1.2.1 Measurement scales of turnover intention

Several turnover measurement scales are widely used in current management studies in China, including:

(1) Turnover Intention Scale:

Spector and Jex's (1991) research highlighted that the best measure of an employee's propensity to leave is to assess whether they perceive better career opportunities elsewhere. They argued that an employee is more likely to leave their current job if they believe they have the chance to secure another position. Turnover decisions are influenced by various factors such as job satisfaction, working conditions, compensation, and prospects for career advancement. Therefore, an employee's decision to leave their job can be a natural response to the pursuit of greater professional and personal fulfilment. To measure turnover intentions, they designed three questions: How often do you consider leaving? Do you intend to leave your current position? Do you plan to leave?

Participants respond using a 7-point Likert scale ranging from 1 (Not at all) to 7 (Every day). The total score is calculated as the sum of the responses to these three questions, with higher scores indicating a stronger turnover intention. This scale was translated into Chinese

and modified by J. Huang et al. (2008) and has been widely used in nursing studies in China. A revised version consists of six questions grouped into three dimensions:

Dimension I: Possibility of resigning from the current job (Items 1 and 6)

Dimension II: Motivation to seek other jobs (Items 2 and 3)

Dimension III: Possibility of obtaining an external job (Items 4 and 5)

Participants use a 4-point Likert scale, ranging from 1 (Never) to 4 (Often), for items 1-3, with a total score ranging from 6 to 24 points. A higher total score signifies a stronger turnover intention. The scores are categorized into four grades: very low (≤ 1), relatively low (>1 and ≤ 2), relatively high (>2 and ≤ 3), and very high (>3). The Cronbach's α coefficient for the Chinese version of this scale is 0.77. Korean scholars introduced a visual analogue scale that ranges from 0 (Not at all) to 10 (All the time) based on this scale (Lin, 2019).

$$\text{Intention of Turnover (IOT)} = (\text{VAS score}/10) * (6+3) \quad (2.1)$$

(2) Farh's Turnover Intention Scale

X. Liu et al. (2017) utilized Farh's turnover intention scale, which employs a 5-point Likert scale comprising four items rated from 1 (Strongly disagree) to 5 (Strongly agree). Scores below 3 indicate weak turnover intention, while scores above 3 signify strong turnover intention. In this study, they extended the scoring system to a hundred-point scale to assess the turnover intention of gynaecological and obstetric nurses. The turnover intention scale they used demonstrated good reliability, with a Cronbach's α coefficient of 0.8. This coefficient indicates strong internal consistency.

(3) Turnover Intention Scale (Arslan Yurumezoglu & Kocaman, 2016)

Arslan Yurumezoglu and Kocaman (2016) conducted a study to assess nurses' intentions regarding turnover, including their intentions to leave their current organizations and even exit the nursing profession altogether in Europe. To achieve this objective, they posed two specific questions to participants:

In the past year, how many times have you intended to leave the organization?

In the past year, how many times have you intended to leave the nursing profession?

The overarching aim of the study was to gain insights into the factors that influence nurses' decisions to either remain in their current positions or depart from their roles within the nursing profession as a whole.

(4) Turnover Intention Scale (Nancarrow et al., 2014)

Nancarrow et al. (2014) conducted a study in 2014 that assessed an employee's turnover intention by using questions such as "What is the possibility of you leaving the hospital?" They employed a Likert 5-point scale, ranging from 1 (indicating no intention of leaving) to 5

(indicating a very strong intention to leave). To facilitate statistical analysis, the responses were categorized into three levels: weak, moderate, and strong, based on the responses “None or weak,” “Average,” and “Strong or very strong.” This approach allowed the researchers to gauge the extent of turnover intention among hospital staff and gain insights into the factors influencing staff retention in the healthcare sector.

2.1.3 Antecedent variables of turnover intention

In line with previous discussions on nurses’ turnover intention and employees’ willingness to change jobs or careers, several influential factors, or antecedents, of turnover intention have been identified. These factors include:

1. Current job satisfaction: High job satisfaction can mitigate turnover intention, as satisfied employees are less likely to contemplate leaving their current positions. Conversely, dissatisfaction with one’s current job may lead to a strong intention to switch jobs (Danish & Usman, 2010).
2. Personal development needs: Employees may seek new job opportunities if they feel that their current roles do not offer opportunities for personal growth or development (Siu et al., 2009).
3. Salary and benefits package: Employees who perceive inadequate compensation or benefits may have the propensity to consider job changes (Siu et al., 2009).
4. Employee relationships: Poor relationships with colleagues or supervisors can contribute to turnover intention. Conversely, positive employee relationships are associated with lower turnover intentions (Sokhanvar et al., 2016).
5. Institutional culture: Organizational culture plays a role in turnover intention. Negative or unsupportive organizational cultures may prompt employees to contemplate job changes (E. Lee & Jang, 2020).
6. Other job opportunities: The availability of job opportunities in the market can influence turnover intention. A job market with more opportunities may make employees more willing to consider job switches (Cao & Chen, 2021).

In addition to these factors, several other factors from previous organizational behaviour studies should be considered, as will be explained in the next section.

2.1.3.1 Work environment

The work environments of nurses play a crucial role and can significantly impact their ability to deliver high-quality patient care. These work environments can be categorized into physical

work environments and organizational environments.

1. **Physical Work Environments:** Physical work environments encompass factors such as proper lighting, air quality, and ergonomic furniture that are essential for maintaining safe and comfortable working conditions for nurses. These factors help prevent occupational injuries and ensure that nurses can perform their duties effectively (Duffield et al., 2011; Wargo Sugleris et al., 2018a).

2. **Organizational Environments:** Organizational environments are equally important in shaping nursing practice. They include aspects discussed in organizational behaviour studies, such as leadership, communication, and workload. Adequate staffing levels, manageable workloads, managerial support, effective communication, and clear communication channels all contribute to an environment that facilitates excellent nursing care (Wei et al., 2023).

Investing in facilities that improve nurses' work environments and support nursing practice is critical for healthcare management. Such investments can lead to significant improvements in patient care outcomes. A healthy work environment not only enhances nurses' job satisfaction but also reduces their turnover intention (Gensimore et al., 2020; Klopper et al., 2012). Furthermore, healthy environments can standardize and professionalize clinical nursing practices, ensuring nurse safety and reducing adverse events, ultimately enhancing the quality of nursing care (Duffield et al., 2011; Edwards et al., 2006).

2.1.3.2 Physical environment

To address the nursing shortage in the United States, many hospitals have implemented the concept of "magnet hospitals," which aims to improve hospital work environments to attract and retain nursing professionals during periods of severe nursing shortages (Ellis & Gates, 2005). The designation of a "magnet hospital" reflects efforts to create a more attractive and supportive environment for nurses.

A study conducted by Y. Wu et al. (2020) demonstrated that nurses' perceptions of their work environments were negatively correlated with their turnover behaviours. This study also revealed that significant improvements in the nursing work environment could reduce nurses' turnover intentions. By providing a safe, supportive, and encouraging work environment, organizations can establish a sense of stability within the nursing team, effectively reducing turnover rates. These efforts can lead to the delivery of high-quality services and the provision of safe and compassionate care by nurses.

Improving the working environment for nurses not only yields multiple benefits, including reduced turnover costs and improved retention rates, but it also enhances the quality

of nursing work and diminishes nurses' desires to leave their positions (Meng et al., 2010). These outcomes are advantageous for hospital management and health systems, contributing to their overall development and success.

2.1.3.3 Organizational environment

Transformational leadership plays a significant role in influencing turnover intention among nursing staff. In the context of China's public tertiary hospitals and the healthcare industry's ongoing reforms, several key factors related to organizational environments are critical.

(1) Transformational Leadership

The implementation of a patient-centered care model and various training initiatives in public tertiary hospitals in China, starting from the healthcare reforms in 2009, has been pivotal in enhancing the quality of healthcare services. These efforts have focused on improving the service quality, knowledge, and technology of nursing staff. One of the key principles underlying this transformation is the prioritization of patient-centered care, where nursing staff serve as crucial mediators for delivering high-quality care (Hudgins, 2016; Podsakoff et al., 1990; Podsakoff et al., 1996).

Several important points should be highlighted in this context (W. W. Yang & Huang, 2015):

Patient-centred Care: The adoption of a patient-centred care model has become a cornerstone of healthcare delivery. This approach emphasizes the importance of ensuring patient satisfaction, and hospital management recognizes that high staff satisfaction is integral to achieving this goal. Consequently, measures aimed at improving the working environment and job satisfaction of nursing staff have become central to hospital management strategies.

Optimizing Nursing Human Resources: Hospitals have undertaken efforts to optimize their nursing human resources by aligning nurses with roles and responsibilities that match their qualifications and experience. This strategic approach has not only standardized clinical nursing practices but has also fostered cooperation among nursing staff, contributing to an improved overall nursing organizational environment.

However, despite these positive changes, nursing staff still face significant challenges that impact their job satisfaction and retention:

Perceived Undervaluation: Traditionally, nursing staff have not received the recognition and attention they deserve in society. This perception of undervaluation stems from various factors, including societal attitudes, low salaries, and a lack of recognition of their social status.

Issues with Health System and Income Distribution: Many nursing professionals perceive flaws in the health system and income distribution, which contribute to feelings of being unjustly treated and undervalued. These systemic issues can lead some nurses to contemplate leaving the profession, resulting in a loss of nursing talent.

In the contemporary healthcare industry, reducing the turnover rate of nurses is a paramount concern for hospital leaders and nursing managers, especially head nurses (M. E. Chen et al., 2016; X. Liu et al., 2021; Meng et al., 2010). To address this issue, establishing and maintaining a healthy work environment is essential. This environment is typified by positive intercollegial relationships, supportive communication, equitable policies and procedures, sufficient resources, and opportunities for professional growth. Initiatives to foster such an environment can significantly contribute to making nursing staff feel valued, supported, and satisfied, consequently leading to reduced turnover rates and enhanced patient outcomes.

Research by Meng et al. (2010) indicated that a head nurse's management style significantly impacts nurse turnover behaviours. Presently, many medium and small-sized hospitals are deficient in proper protocols and guidelines for clinical nurses, often depending on empirical methods (Zheng et al., 2017). This reliance on empirical management in clinical nursing results in inconsistent standards and practices, diminished care quality, and potential risks to patient safety. Thus, it is imperative for these hospitals to implement evidence-based nursing management practices to ensure safe, effective, and high-quality patient care. There is a notable linear relationship between such management practices and nurse turnover rates.

Transformational leadership is a style wherein the leader profoundly alters the perspectives of their followers, enabling them to achieve previously unattainable heights. This approach is characterized by the leader's commitment to driving change and inspiring followers to not only meet but potentially surpass set goals. Transformational leaders foster open communication, creativity, and innovation, and emphasize the personal and professional development of both themselves and their team members. Such leaders inspire their subordinates to challenge their own limits, fostering a sense of unity and shared purpose that propels the entire team forward. Fundamentally, transformational leadership aims to inspire and empower subordinates to excel in both their personal and professional lives. This effective connection allows subordinates to appreciate the significance and value of their work outcomes, motivating them to prioritize organizational goals over individual interests (Díaz-Sáenz, 2011).

In the context of nursing management, this non-authoritative leadership style is embodied

in six aspects: articulating aspirations, setting high expectations, stimulating intellectual engagement, encouraging cooperation, providing personalized support, and leading by example (Díaz-Sáenz, 2011). Force (2005) noted a significant correlation between transformational leadership and nurse turnover intentions, indicating that the more nurses perceive transformational leadership behaviours in their leaders, the lower their intention to leave the organization.

In Chinese hospitals, the application of transformational leadership encounters two primary research challenges related to the leadership of superiors. Firstly, there is ambiguity regarding which level of superiors, such as head nurses who are not contracted nursing staff, this style of leadership applies to. Previous literature suggests that the leadership of such individuals may not significantly influence contracted nurses. Secondly, the effectiveness and scope of transformational leadership within Chinese hospitals remain unclear. Given the management system of public hospitals in China, which bears similarities to those in various regions, the impact of transformational leadership may be more limited than what previous studies have indicated. Consequently, research focusing on contracted nursing staff in China must take into account these two distinct aspects of Chinese nurses in terms of human resource management. This consideration is crucial for accurately assessing and implementing transformational leadership strategies in the unique context of Chinese healthcare institutions (X. H. Wang, 2010).

(2) Nurses' Rewarding System

The nurses' rewarding system, as a critical aspect of human resource management in healthcare, involves complex considerations. Luthans and Sommer (2005) and Edwards et al. (2006) describe reward as a reciprocal exchange of benefits between the employer and the employed. However, for the reward system to be meaningful, it must correlate with the employees' abilities, technology, experience, and performance (M. Zhong et al., 2019; X. Zhong et al., 2021). In the context of nursing, this becomes more intricate due to the diverse nature of nursing work (Flynn et al., 2016). Thus, the formulation of a rewarding system for nursing staff typically requires specialized knowledge and is often developed by hospital professionals.

Adding local culture to the mix, particularly in the Chinese context, further complicates the remuneration system for nurses. In China, traditionally, nursing fees were included in hospital charges covered by the Health Insurance Bureau, preventing independent payment to nursing staff. This system results in generally low salaries for nursing staff, a situation exacerbated by hospital authority interventions. The low remuneration, coupled with the

additional responsibilities of teaching and research in tertiary hospitals—which are often undervalued and poorly compensated—leads to a lack of motivation among nursing staff to engage in academic pursuits. This situation contributes to a vicious cycle where nurses spend considerable time on menial tasks, unable to fully utilize their skills and abilities, which in turn affects their performance evaluation and increases their propensity to leave (M. Zhong et al., 2019).

Yue et al. (2013) noted that the reward system for nurses in China is not only inadequate but also based on general evaluation criteria. Hospitals often focus on quantifiable indicators such as foreign language proficiency, educational qualifications, scientific publications, and research funding for promotion assessments, neglecting the evaluation of clinical nursing practice skills. This mismatch between professional titles and actual clinical skills can lead to dissatisfaction among nurses (Gong, 2020; Xiong, 2017; Z. Z. Yang et al., 2016). Hsu et al. (2015) found that nurses' organizational commitment could be enhanced through trust and monetary rewards. However, the current system in China, which fails to accurately reflect the fundamental attributes of nurses' knowledge, skills, and attitudes, lacks the capacity to demonstrate core nursing competencies. This deficiency adversely affects the stability and work enthusiasm of frontline clinical nurses, ultimately impeding the development of nursing capabilities and the nursing discipline in China (M. Zhong et al., 2019).

The rewarding system for nurses in many foreign countries is often more comprehensive and detailed, encompassing various categories of rewards such as bonuses, promotion opportunities, recognition, and other incentives. This multifaceted approach is designed to enhance nurses' retention, job satisfaction, and performance, with each system tailored to meet the specific needs of nurses and the healthcare sector within those countries. A notable aspect of these systems is their transparency, which fosters fairness and motivation, encouraging nurses to strive for excellence in their roles (Matta et al., 2017). Consequently, this leads to higher job satisfaction and more fulfilled nurses who are capable of delivering superior patient care.

The effectiveness of such rewarding systems is evaluated at multiple levels: the individual employee level (focusing on ability development, motivation, job satisfaction, retention, and performance), the organizational level (assessing nursing quality, patient safety, and patient satisfaction), and the financial level (Gunawan et al., 2019). Research by Reineck and Furino (2005) highlighted that while registered nurses highly value the intrinsic rewards of their profession, workplace relationships and stress are significant contributors to their frustration and exhaustion.

Chiha and Link (2003) found that only 57% of American nurses consider their monetary incentives as adequate. John and Jeffrey (1999) emphasized that hospitals utilize monetary rewards to attract, motivate, and retain valued nurses. Danish and Usman (2010) also underscored the importance of rewards in employee job satisfaction. Kloppe et al. (2012) suggested that job dissatisfaction is closely related to low wages.

Furthermore, studies by Amabile et al. (1994), Milne (2007), and Islam and Ismail (2008) indicate a positive correlation between rewards and job satisfaction. The nature and level of rewards—including compensation, benefits, and recognition—significantly influence nurses' attitudes and satisfaction towards their job and the organization. Adequate and fair rewards can lead to increased motivation, dedication, and engagement, enhancing commitment to organizational goals and values. Conversely, insufficient or perceived inequitable rewards can result in lower job satisfaction, increased turnover, and a decline in the quality of care provided.

Prior research indicates that trust among nurses and monetary rewards both significantly and equally contribute to enhancing job satisfaction (Danish & Usman, 2010; Hsu et al., 2015). Being perceived as trustworthy and reliable by colleagues, along with receiving satisfactory compensation, are crucial elements in fostering job contentment among nurses. Trust within the nursing community acts as a psychological motivator, while financial remuneration offers a concrete, tangible incentive.

Hospital administrators are advised to cultivate trust among nurses as a strategy to improve job satisfaction. This can be complemented by providing attractive compensation packages. Furnham et al. (2009) suggest that these dual approaches are effective in boosting job satisfaction. Additionally, Hsu et al. (2015) emphasize that hospital management can enhance nursing staff satisfaction with their remuneration by ensuring fairness in the distribution of compensation and providing substantial subsidies, which in turn can reduce the intention to turnover.

For nurses, equitable treatment and appropriate remuneration are key factors in improving job satisfaction. Perceptions of unfairness, although subjective, are major contributors to the turnover of nursing staff. The sense of unfair treatment often stems from nurses comparing their own experiences with those of their peers and finding a lack of scientific basis or objective evaluation in their treatment by supervisors. Without strong points of comparison, this sense of fairness can be challenging to cultivate, thereby impacting the willingness of nursing staff to remain in their positions (Matta et al., 2017). Hence, addressing these concerns of fairness and equitable remuneration is crucial in retaining nursing staff and

improving their overall job satisfaction (M. Zhong et al., 2019; X. Zhong et al., 2021).

(3) Mental Stress

L. C. Yang et al. (2020) discovered a negative correlation between job challenges and the intention to leave the profession among nurses. Their findings suggest that a greater sense of work challenge can effectively reduce nurse turnover rates. This is because challenging work environments often offer opportunities for growth, control, and profit potential. However, Takase et al. (2005, 2006) noted that while increasing job challenges can diminish the tendency of nurses to leave, it also leads to higher levels of mental stress, which can be detrimental to their health. The management of nursing staff, therefore, involves balancing the provision of moderately challenging duties and tasks to avoid excessive stress and its associated mental health impacts (Jarden, Jarden, Weiland, Taylor, & Bujalka et al., 2021).

The research underscores the importance of fair performance assessments in managing the potential negative outcomes of work-related stress in nursing. Stress in the nursing profession can arise from various sources, including burnout, work-family conflict, and increasing instances of workplace violence. These stressors encompass long-term exposure to demanding work environments, impacting productivity and attitudes towards work (Anshasi et al., 2020; Siu et al., 2009).

Job burnout is characterized as a psychological state resulting from prolonged exposure to work stressors, leading to exhaustion, cynicism, and a decrease in job efficacy. In terms of work-family conflict, the challenge for nurses often lies in balancing demanding work schedules with family responsibilities, exacerbated by long and irregular working hours (Bing et al., 2013; Luo & He, 2010).

Furthermore, workplace violence, a growing concern in nursing, involves verbal or physical aggression from patients, relatives, or colleagues, contributing significantly to stress and fear among nursing staff. In China, this issue has become particularly acute, with incidents of violence against nurses increasing their workload and pushing many to consider leaving their positions (Al-Qadi, 2021; Fasanya & Dada, 2016; Xing et al., 2016).

In summary, nurses face four major sources of work-related stress:

- a). Conflict within the family due to work demands.
- b). Learning challenges arising from the introduction of numerous new technologies.
- c). Violence in the workplace.
- d). Unreasonable increases in patient demands.

These stressors, which include excessive workloads, long working hours, and poor working conditions, significantly contribute to nurse turnover rates, thereby impacting the

quality and continuity of patient care.

(4) Job Burnout

Burnout is a critical issue in nursing, characterized by a loss of mental and emotional enthusiasm for the profession (Luo & He, 2010). Persistent burnout is a significant factor causing nurses to leave their positions. W. H. Liu et al. (2018) highlighted the detrimental impact of burnout on nurses' career longevity. Hall (2001) likened nurse burnout to a "tumour" in the nursing profession, underscoring its seriousness and pervasiveness.

A study by H. Luo and He (2010) involving 500 nurses in Hangzhou, Zhejiang Province, identified burnout as a mediating variable in turnover intention, particularly among nurses aged 25-28. This finding emphasizes the importance of moral support for nurses. In another study, Cui and Yi (2013) investigated 224 nurses in a tertiary hospital in Beijing and found significant positive correlations between all dimensions of nurse job burnout and turnover intention.

J. Wang et al. (2020) conducted a survey among 400 ICU nurses, uncovering several factors contributing to high risk of nurse job burnout. These factors include poor family communication, length of time in the nursing profession, and working irregular shifts. The study also suggested that professional knowledge and psychological quality training could help reduce burnout. Moreover, good communication training, maintaining physical health, and addressing nurses' complaints are effective in decreasing burnout rates and fostering a healthier work environment.

To mitigate nurse job burnout, improving communication mechanisms to address nurses' difficulties is essential. Hospital managers should enhance existing mechanisms, shifting from uni-directional to multi-directional communication at both hospital and departmental levels. This approach would enable a comprehensive understanding of nurses' work progress and facilitate timely intervention in their challenges. Furthermore, hospitals should provide psychological counselling courses for nursing staff, particularly because they often encounter situations involving death, dementia, illness, and other distressing conditions. Psychological support can help reduce their disdain for nursing work and prevent early burnout (Friganović et al., 2019; Jun et al., 2021; Luo & He, 2010).

For new nurses, the support of the nursing team is crucial. Without a robust support system, new nurses are at risk of early burnout. Many hospitals now offer psychological counselling to address these issues, aiming to inform nurses about the support available from hospital management, thereby reducing their psychological stress and preventing premature burnout in the profession (Hall, 2001; Kim & Seomun, 2013; Yao et al., 2018).

However, as mentioned earlier, the study of burnout among nursing staff in Chinese public hospitals faces two distinct challenges:

a). Age Factor and Early Career Turnover: The majority of contracted nurses in public hospitals in China are relatively young. Their reasons for leaving the profession may differ significantly from the conventional understanding of burnout as depicted in past literature. Notably, nurse turnover in Chinese public hospitals often occurs shortly after graduation, complicating the definition and identification of burnout in this context. Younger nurses, being in the early stages of their careers, may leave for reasons more aligned with exploring career options, seeking better opportunities, or personal life changes rather than traditional burnout, which typically accumulates over time due to prolonged work stress (Ye et al., 2020).

b). Burnout and Job Mobility: For contracted nursing staff in Chinese public hospitals, burnout does not necessarily equate to leaving the job. These nurses often have the opportunity to find employment in various settings, suggesting that the impact of burnout on their intention to leave is limited. In other words, while burnout may affect their job satisfaction and performance, it does not directly compel them to quit their jobs (Jun et al., 2021; Klopper et al., 2012; Rushton et al., 2015).

(5) Work-family Conflict

Work-family conflict is a significant factor influencing nurses' decisions to leave their profession (Greenhaus & Beutell, 1985). This conflict arises when nurses are compelled to choose between their work responsibilities and family obligations. The dual pressure of managing demanding job duties and fulfilling family care responsibilities often leads to a situation where maintaining a balance becomes unsustainable, prompting thoughts of leaving the profession (J. Liu et al., 2014; T. T. Yang et al., 2020).

To mitigate this conflict, many nurses adopt two strategies (Hatam et al., 2016; J. Liu et al., 2014):

a). Seeking Alternative Roles Within the Hospital: Nurses often look for non-clinical administrative positions within the hospital, aiming to transfer to roles that may offer more regular hours or less demanding schedules, thereby easing the conflict between work and family responsibilities.

b). Pursuing Similar but Less Demanding Jobs: Another common approach is seeking employment in fields related to nursing but with potentially more manageable work-life balance, such as becoming airline attendants.

T. T. Yang et al. (2020) analysed the impact of work-family conflict on practice burnout using mediating variables and found a significant relationship between the two. Their research

suggests that reducing work-family conflict could weaken the impact of other factors influencing nurses' intention to leave. Particularly post-marriage, the increased family pressure on nurses necessitates substantial support to balance these conflicts, failing which they may be compelled to leave their profession.

Most nurses attempt to balance family and career conflicts before deciding to leave. This balancing act can inadvertently contribute to a higher rate of singleness among nurses, as maintaining relationships alongside professional responsibilities becomes more challenging. Therefore, addressing the stress arising from work-family conflict is crucial in reducing practice burnout and retaining nursing staff.

(6) Workplace Violence

In recent years, the escalation of conflicts between doctors, patients, and their families has brought the issue of workplace violence in hospitals into the spotlight, significantly affecting hospital management globally (Al-Qadi, 2021; Fasanya & Dada, 2016). This phenomenon is not limited to any specific country but is recognized as an international issue, affecting healthcare professionals in nations such as the United States, Australia, the United Kingdom, Canada, Turkey, and Italy. For nurses, the prevalence and impact of this violence are particularly alarming. According to H. Chen et al. (2020), a substantial percentage of nurses, approximately 78.2%, have experienced verbal violence in the workplace.

Xing et al. (2016) noted that workplace violence is not only widespread but also has severe consequences for healthcare staff. The majority of nursing staff, around 76%, have faced threats, and nearly half of the frontline nursing staff (42.18%) have encountered harassment. This environment leads to significant physical and psychological repercussions for the victims, including headaches, angina, sweating, high blood pressure, insomnia, nightmares, hallucinations, gastrointestinal disorders, fatigue, and a heightened intention to leave their positions. K. Tian et al.'s (2022) study further highlights the direct correlation between experiencing workplace violence and the desire to leave the nursing profession.

Despite increased awareness and concern over the past decade, the frequency of workplace violence has not diminished significantly. This issue requires a multifaceted approach involving various stakeholders (Y. P. Chang et al., 2018; Sabbath et al., 2014). Nurses, who are often young and inexperienced in handling such situations, need the most support as they are at the frontline of patient interaction.

The role of the media is also crucial in addressing this issue. As Y. P. Chang et al. (2018) pointed out, responsible media reporting is necessary to avoid causing panic and perpetuating the cycle of violence. The lack of consequences for perpetrators and the inadequate preventive

measures taken by hospital management often leave nurses feeling unprotected and undervalued (Schablon et al., 2018).

Nurses primarily seek support and assistance from their employers in the event of violent incidents. Long-term neglect of these needs can lead to increased turnover intentions, as nurses may feel their safety and well-being are not being prioritized. Escartín (2016) suggests that hospital management needs to implement comprehensive plans for handling workplace conflicts and violence, moving beyond temporary measures.

Abd-Elsayed and Karri (2020) highlight the importance of holding perpetrators accountable and protecting the identities of nursing staff as part of the solution to this problem. The attitude of hospital management is crucial; indifference or lack of support can lead to demoralization among nursing staff, prompting them to leave the profession. Therefore, addressing workplace violence is essential for ensuring that nurses, particularly those on the front lines, feel valued and secure in their jobs.

Workplace violence in healthcare settings casts a lasting psychological shadow on nurses, potentially deterring them from continuing in the nursing profession. The impact of such violence extends beyond the individual, affecting their families, friends, and community as well (Al-Qadi, 2021; Copeland & Henry, 2018). The repercussions are multifaceted, including not only staff turnover but also a direct or indirect deterioration in the quality of patient care. In cases where nurses' lives are threatened, their proactive engagement in care delivery is compromised, which has significant implications for both the nurses and the patients they serve.

The direct effect of workplace violence on the quality of nursing care is a critical concern, particularly in the context of increasing emphasis on patient safety. Such incidents pose risks to patients' lives, necessitating that hospital supervisors take a more active role in addressing and managing workplace violence. Clinical nursing staff managers, in particular, must develop a thorough understanding of how to manage and mitigate such violence, including personal involvement in addressing these incidents (Tian et al., 2022).

The diversity and unpredictability of workplace violence make it challenging to prevent using traditional methods. As W. H. Liu et al. (2018) pointed out, nurses who experience workplace violence may develop post-traumatic stress disorder (PTSD) and tendencies towards depression. There is a notable correlation between the frequency of violent incidents and increased nurse turnover rates.

The COVID-19 pandemic has further exacerbated these challenges. The pandemic-related stress and additional burdens have led to increased conflicts between nurses and patients or

their families, contributing to heightened psychological pressure on nurses. This pressure is considered part of workplace violence, encompassing not only events that endanger nurses' lives but also those that contribute to mental and emotional strain (Danesh et al., 2021).

Anderson et al. (2023) highlight that workplace violence negatively affects not only patients and their families but also creates a lose-lose situation for both nursing staff and hospital management. Consequently, preventing workplace violence is a critical issue in hospital and nursing management. It is important to recognize that merely understanding the issue may not be sufficient to resolve it. Many nursing managers might need to personally experience these events to fully grasp the severity of the problem and implement effective solutions. This necessity underscores the complexity of addressing workplace violence in healthcare settings and highlights the need for comprehensive, experiential-based strategies to mitigate its impact.

2.1.4 The effects of turnover intention

The high willingness of nurses to leave their positions often indicates a decline in the quality of care provided by hospitals, negatively impacting the benefits and goals of these institutions (Cao & Chen, 2021). This inverse relationship should be a primary concern for hospital managers, as a high turnover intention can also serve as an indicator that hospitals are failing to meet their foundational objectives. The use of nurse turnover rates as a monitoring tool can highlight issues such as practice burnout, which further exacerbates the problem (Hatam et al., 2016).

The question arises as to why some hospitals do not proactively address these issues. By neglecting them, they inadvertently “encourage” nursing staff to leave, leading to numerous negative consequences (Park & Ko, 2020; Yarbrough et al., 2017). Additionally, high turnover rates may trigger a domino effect of resignations, a concern that hospital management authorities should not overlook (Cao & Chen, 2021; E. Lee & Jang, 2020).

2.1.5 Status quo of nursing turnover

2.1.5.1 Status quo of nurse turnover in China

The current state of nurse turnover in China is influenced by several factors, including the country's aging population and lifestyle changes (J. Chen, 2012; Luo & He, 2010; Meng et al., 2010). These factors underscore the increasing need for elderly care and chronic disease care, where prevention and care are equally important. The scarcity of nursing staff becomes a

critical issue in this context. Thus, understanding and addressing the country's nursing workforce challenges is essential and has become a topic of national discussion.

Historically, hospital management focused primarily on utilizing organizational human resource management to address the nursing manpower shortage (Luo & He, 2010). However, a more systematic approach is now required to effectively resolve these issues. Consequently, determining the current nursing manpower availability has become a top priority (Aiken et al., 2014).

Three main reasons have been identified for the nursing shortage in Chinese public hospitals (Luo & He, 2010):

a). Lack of Nursing Staff Training Schools: This leads to a limited number of trained nurses entering the workforce.

b). Lack of Life Planning for Nursing Staff: Nurses often face uncertainties regarding career progression and work-life balance.

c). Lack of Social Orientation for Nursing Staff: There is a societal undervaluing of the nursing profession, leading some to leave the field instead of entering it.

Gan et al.'s (2020) re-analysis of China's National Database of Nursing Quality revealed that while nurses in China are leaving hospitals, the overall turnover rate has remained stable. They identified that the high turnover rate among young nurses was largely due to retirements, firings, and job changes, suggesting that the actual turnover situation may not be as dire as previously thought. It is important to recognize that some turnovers are driven by unavoidable factors and can significantly impact hospitals (Shi et al., 2016). However, accurately analysing the reasons behind the departure of 250,000 to 260,000 nurses annually in China remains challenging (M. E. Chen et al., 2016).

An interesting point noted in this context is the discrepancy between the state-recommended nurse-to-bed ratio of 1:0.4 and the actual ratio of 1:0.6 that many hospitals maintain, often due to staffing shortages during peak periods (NHFPC, 2017). This highlights the ongoing issue of nurse understaffing in Chinese hospitals. The shortage of nursing staff leads to increased workloads, which are negatively correlated with nursing care quality. As the workload escalates, many nurses become increasingly dissatisfied with their jobs, leading to a cycle of work dissatisfaction and eventual turnover. The critical pathway of "workload dissatisfaction – turnover" needs to be addressed to prevent further decline in nursing care quality (Meng et al., 2010).

Furthermore, the high turnover rate has prompted scholars to differentiate between types of nursing staff leaving their positions, specifically distinguishing between those included in

the staffing count and contracted nursing staff. This distinction is crucial in understanding and addressing the turnover phenomenon (Meng et al., 2010).

The current nursing staffing shortage in China is a pressing issue. Insufficient staffing not only increases the workload and job demands for existing nurses but also adversely affects their job satisfaction, leading to burnout and high resignation rates. To tackle this issue effectively, stakeholders need to focus on increasing healthcare workforce capacity and capabilities, ensuring a more sustainable and satisfied nursing workforce. Addressing these challenges will be vital for maintaining high standards of care and supporting the health system's overall resilience and effectiveness (Meng et al., 2010).

2.1.5.2 Status quo of nurse turnover outside China

The issue of nurse turnover is prevalent not only in China but also in economically developed countries such as the United States, Jordan, New Zealand, and various European nations. For instance, turnover rates in these countries have been reported as 19.9% in the United States, 13.9% in Jordan, 36.6% in New Zealand, and between 12% to 21% in Europe, including both voluntary and involuntary turnovers (Duffield et al., 2011; Roche et al., 2015; Zeidan, 2021). This indicates that high turnover rates of nursing staff are a significant management issue worldwide. However, the factors influencing nurse turnover in these countries may differ from those in China, emphasizing the need for context-specific research (Y. Yang et al., 2012).

2.1.6 Intellectual Capital Management: A new perspective of nurses' turnover intention

China's public hospitals are currently facing numerous challenges, including public expectations, the implementation of the health insurance system, graded hospital reviews, doctor-patient tensions, workplace violence in medical settings, and increasing employee demands. These factors directly challenge hospital management, particularly in managing nurse turnover (Aljohani, 2016; Fasanya & Dada, 2016). Addressing these issues promptly is crucial to effectively managing hospitals.

Moreover, considering the gender of nursing staff is important, as female nurses may experience additional mental or psychological stress due to violence and tension in the workplace, leading to emotional barriers or burnout (Meng et al., 2010).

Beyond physical challenges, nurses also face emotional and mental stress. Advances in medical technology can leave some experienced nurses struggling to keep pace, creating a sense of unfairness and resentment among younger nursing staff (Badu et al., 2020). This situation exacerbates conflicts between staffed and contractual nurses and poses challenges

for nursing management authorities (H. Chen et al., 2020; Matta et al., 2017; Shi et al., 2016).

Establishing a new model for analysing nurse turnover is therefore essential in hospital human resource management (Bambi et al., 2018). While moderate turnover can be beneficial for hospital human resource dynamics and finances, excessive turnover rates can detrimentally affect hospital quality (Nwachukwu et al., 2015). High turnover rates can disrupt human resource management, increase management costs, and compromise medical safety and quality of care, potentially damaging the hospital's reputation and patient trust (Alshawush et al., 2020; H. Y. Chang et al., 2019).

The issue of nurse turnover is multifaceted and is influenced by various factors within the hospital environment. J. Wang et al. (2020) highlighted that prolonged probation periods and continuous training programs might create a division between new and existing staff. This disparity in workload and treatment can lead to decreased organizational solidarity and make it challenging for hospitals to function cohesively towards their objectives. Therefore, finding a balance between training, probation, and staffing is critical for maintaining hospital efficiency and ensuring high-quality patient care (S. C. Liu, 2020).

Nurse managers are encouraged to explore new management models to enhance nurse performance and treatment, aiming to reduce working pressure and, consequently, the turnover rate (Patterson et al., 2010). In the context of China's transition into a knowledge economy era, intellectual capital has become a key investment consideration across various sectors. This transition underscores the importance of intellectual capital in the healthcare industry, particularly in nursing (Luo & He, 2010).

The departure of nursing staff can lead to significant losses in a hospital's intellectual capital. Hospitals should therefore strive to preserve the intellectual knowledge and expertise of their nursing staff to prevent the erosion of organizational structure, innovation, and intellectual property (Rose et al., 2015). Bontis (1998) and Stewart (1991, 2007, 2010) have emphasized the value of intellectual capital in management literature, describing it as comprising human capital (talent), structural capital (intellectual property, methodologies, software, knowledge artifacts), and customer capital (client relationships).

Edvinsson (1997, 2002) further elaborates that intellectual capital is defined by intangibles and the transformation of knowledge into intangible assets and wealth, thereby creating resources. This includes human capital and potentially the repackaging of capital structures and databases, which, with the aid of information technology, can be converted into wealth.

Intellectual capital, being a valuable resource for hospitals, should not be perceived

merely as static and intangible. Instead, it should be actively promoted and transformed into tangible wealth. This approach maximizes the potential and functionality of nursing staff, as change and innovation are inherent characteristics of intellectual capital. By pursuing change and innovation, hospitals can significantly amplify their intellectual capital (Luo & He, 2010; J. Wang et al., 2020).

In recent years, numerous nursing innovations have generated substantial wealth, demonstrating the effective utilization of knowledge capital. Hospital management can create more wealth by strategically leveraging intellectual capital. The transformation of intellectual property rights (IPR) in hospitals, regarded as assets, into wealth is a crucial consideration in a competitive environment (Bao et al., 2013). Hospitals need to not only have appropriate technology but also an environment conducive to converting these assets into wealth. This approach has gained significant attention in hospital management circles, as IPRs, often viewed merely as experience or skills, hold much greater potential (Rose et al., 2015).

Hospital managers should shift their mindset to transform intellectual property into intellectual capital effectively. This transformation plays a vital role in adding value to hospital management and converting intangible intellectual properties into tangible products (Wei et al., 2023). By transforming intellectual property into products, hospitals can evolve into learning organizations, enhancing their adaptability and competitiveness in the volatile capital market (Bao et al., 2013). This approach aligns with the recent emphasis on promoting translational medicine in hospitals (Olairewaju & Msomi, 2021; Xu, 2014).

Qiang's (2018) research suggests that increasing the focus on translational medicine in hospitals can reduce nurse turnover. This is because it contributes to nurses feeling more respected and satisfied in their workplace, enhancing their commitment, and reducing their propensity to leave. Thus, the strategic management of intellectual capital and the promotion of translational medicine are crucial for retaining nursing staff and enhancing hospital performance in the modern healthcare landscape.

Intellectual capital, a crucial asset in organizational management, especially in healthcare, comprises three dimensions: human capital, structural capital, and relational (or social relations) capital.

a). Human Capital: This is often considered the most valuable form of capital. Human capital encompasses the knowledge, skills, experience, and other intangible attributes of each employee. The collective human capital of an organization can exceed the value of its tangible assets. Effective management and investment in human capital development are crucial for long-term organizational success and competitive advantage in the market (Edvinsson &

Sullivan, 1996).

b). **Structural Capital:** This refers to the organizational structures, processes, and databases that enable human capital to function effectively. It is how hospitals convert human capital into operational wealth. Structural capital represents the specific arrangements and frameworks a hospital utilizes to transform intellectual property into assets (Edvinsson & Sullivan, 1996; Olarewaju & Msomi, 2021). Not all intellectual property can be transformed into valuable resources, making structural capital a critical aspect of intellectual capital management.

c). **Relational Capital:** Defined by Bontis (1998) and Bontis and Fitz Enz (2002) as the invisible asset stemming from the relationships that an organization maintains with its internal and external stakeholders. This includes knowledge, expertise, foresight, and the relationships themselves. Relational capital is unique and cannot easily be replicated by competitors. It derives its value from the relationships it fosters, which can significantly enhance the overall worth of an organization, such as a hospital.

Collectively, these three dimensions of intellectual capital can significantly increase the financial value of a hospital (Bontis et al., 2002; Bontis & Fitz Enz, 2002; Edvinsson & Sullivan, 1996; Olarewaju & Msomi, 2021). For instance, T. Wang (2006) demonstrated that the influence of intellectual capital has a negative correlation with employee turnover. This suggests that effective management and enhancement of intellectual capital can lead to reduced turnover rates, benefiting the organization both financially and in terms of operational stability.

In management practices, the concept of “intellectual capital” plays a pivotal role in the success and competitiveness of an organization. This term encompasses intangible assets or resources, including the knowledge, skills, and experience of staff, customer loyalty and satisfaction, organizational management efficiency, and effective workflow processes (Covell & Sidani, 2013a, 2013b; Nedjati & Izbirak, 2013). Intellectual capital is a key driver for innovation, revenue generation, and enhancing competitive advantage (Daou et al., 2019).

Employees with exceptional skills and expertise are vital to an organization’s success. They significantly contribute to its value and play a crucial role in long-term growth and sustainability (Bontis et al., 2000; Daou et al., 2019). These individuals form the foundation of the organization’s human capital and are essential for continued success.

Identifying these core employees is the first step in improving organizational performance (Daou et al., 2019). Once identified, they can collaboratively diagnose problems affecting performance. This diagnostic process may involve conducting surveys, gathering feedback,

analyzing data, and considering external factors like competition and market trends (Lin et al., 2017; Naseem et al., 2019).

Core employees can develop and implement personalized programs that align with organizational goals, enhancing their identification with the organization and reducing their turnover intention (Lin et al., 2017). Lean management is an example of such an initiative (Naseem et al., 2019).

In the context of healthcare, nurses are akin to ordinary employees in terms of their role within an organization. They apply their nursing knowledge and skills in clinical practice, and their abilities, health conditions, and innovation are crucial for patient health outcomes and the economic benefits of the hospital (Aiken et al., 2014).

Therefore, effectively managing the intellectual capital of nurses is essential. This includes recognizing and nurturing their professional skills and expertise, ensuring their job satisfaction and loyalty, and leveraging their capabilities for organizational growth and patient care quality. By doing so, hospitals can enhance their service quality, foster innovation in patient care, and maintain a competitive edge in the healthcare sector.

The application of intellectual capital theory in the nursing industry has gained significant attention in recent years, with studies revealing a positive correlation between nursing intellectual capital and hospital performance. This approach has become a guiding framework in researching nursing staffing (Covell & Sidani, 2013a). Nursing intellectual capital refers to the accumulated nursing knowledge within healthcare organizations, including the knowledge held by registered nurses and the organizational structures that support their clinical decision-making (Covell & Sidani, 2013b).

Nursing intellectual capital is structured into three dimensions, following the framework proposed by Edvinsson (2002):

a). Nursing Human Capital

This dimension encompasses the knowledge, skills, and experience of registered nurses, derived from academic education, professional development activities, training, and work experience (Covell & Sidani, 2013b). Studies have shown that nursing human capital is linked to improved care quality and patient outcomes, including lower rates of patient falls, mortality, and rescue failures (Aiken et al., 2014; Duffield et al., 2011; Roche et al., 2015). Research in Canadian hospitals also found that greater investment in nursing human capital correlates with lower nurse turnover rates (Rondeau et al., 2009).

b). Nursing Structural Capital

This aspect includes the structural resources that contain and support the application of

nursing knowledge. It encompasses practice guidelines, nursing flowcharts, information systems, information technology, and portable computer equipment used to provide evidence-based information during nursing care (Oman et al., 2012).

c). Nursing Social Capital

Defined in the nursing literature as the resources obtained through membership and interaction within social networks (Westphaln et al., 2020). Studies have indicated that social capital is significantly related to job satisfaction (Motlagh et al., 2020) and negatively associated with nurses' professional turnover intentions (H. Y. Chang et al., 2019).

These findings underscore the importance of nurturing and managing intellectual capital in nursing. Investing in nursing human capital not only enhances patient care and outcomes but also contributes to nurse retention. Similarly, developing nursing structural capital through supportive tools and systems facilitates the effective application of nurses' skills and knowledge.

The implementation of Intellectual Capital Management (ICM) in public hospitals, particularly in the context of nursing, presents an opportunity for growth and development for knowledge-intensive nursing staff, potentially reducing their turnover rates (H. Y. Chang et al., 2019; Kenny et al., 2016). Despite recognizing the importance of intellectual capital, many Chinese hospitals lack a clear management structure for effectively harnessing and enhancing core competencies through ICM (Y. P. Chang et al., 2018). Therefore, there is a pressing need for a scientific approach to managing and accessing the effectiveness of ICM in Chinese nursing management.

Evaluating the effectiveness of ICM involves two main methods: financial index methods and non-financial index methods.

a). Financial Index Methods

These methods measure the economic value of intangible assets in monetary terms, based on financial figures. They quantify the value of intellectual capital and facilitate horizontal comparisons among different organizations within the same industry, aiding external investment decisions (Lin et al., 2017).

b). Non-Financial Index Methods

These methods involve recognizing and classifying various components of intellectual capital, then reflecting this information in scorecards, charts, or balance sheets. This approach aids managers in understanding and managing intellectual capital more effectively (Gogan et al., 2014). With the proliferation of internet technologies, software and network solutions based on traditional evaluation models are emerging, which assist organizations in measuring,

controlling, and improving performance (Mubarik et al., 2022).

For the practical application in hospital management, especially for nursing personnel, the non-financial index methods are widely applicable. They offer a comprehensive view of various aspects of intellectual capital beyond just their financial worth. The improvement of organizational performance is indeed influenced by a multitude of factors, including macroeconomic policies, fiscal balance, technological progress, innovation, education, and research and development (R&D). Intellectual capital plays a significant role in affecting these factors and, consequently, an organization's performance. To enhance performance, understanding the relationship between intellectual capital and organizational performance is essential, as well as recognizing the influencing factors. Implementing strategies for effective Intellectual Capital Management (ICM) is crucial in fully leveraging intellectual capital (Bao et al., 2013).

Intellectual capital, as an intangible asset, can significantly improve organizational performance. Firstly, strong intellectual capital can increase company profitability and enterprise value. Secondly, intellectual capital positively impacts financial performance. Thirdly, effective ICM can create superior intellectual capital for a company (Nuryaman, 2015).

Intellectual capital satisfies the interests of various stakeholders, including investors, thereby stimulating investment demands and increasing the market value of the company. However, intellectual capital cannot function in isolation. Companies that achieve a balance between human capital, relational capital, and structural capital tend to have better financial and market performance. Organizational performance depends on the coordination among these internal components (Riahi Belkaoui, 2003).

The components of intellectual capital are significantly correlated and collectively contribute to organizational performance. While each component (human capital, structural capital, or relational capital) independently positively affects company performance, their combined effect is more substantial. Companies that integrate these aspects of intellectual capital are typically more competitive than those focusing on a single aspect (Nuryaman, 2015).

Sumedrea's (2013) research using the Value-Added Intellectual Coefficient model demonstrates that companies should establish a balanced intellectual capital model. This model should include first-class facilities, well-educated and skilled labour, effective communication, and cooperation, balancing the investment in intellectual capital with physical investment (An et al., 2015).

In the context of hospitals and nursing management, adjusting the relationship between nurse performance and remuneration using ICM requires establishing a stable management model. This model should balance the relationship between capital investment and the return of value, ensuring that investments in intellectual capital (such as training, development, and knowledge management) are aligned with organizational goals and nurse performance outcomes (Bao et al., 2013).

The modern management philosophy underscores the significance of human resources, particularly in the healthcare sector where effective management and robust hospital policies play a crucial role in stabilizing nursing personnel. To address the challenges faced by hospitals and nursing managers, several strategic areas need focus (Labrague et al., 2017; Oman et al., 2012):

a). Caring for and Valuing Nurses

Nursing managers should actively care for and value their nurses. Recognizing and respecting nurses' contributions, as well as identifying and nurturing their potential, are essential for improving their professional competence (Peng et al., 2019). Addressing the needs of nurses and solving their problems is vital for staff retention.

b). Equity for Contract Nurses

Contract nurses often bear a significant portion of clinical work but may face disparities compared to budgeted nurses in terms of labour relations, wages, bonuses, allowances, social insurances, and housing (Zhong et al., 2019). Establishing equitable policies and practices that address these disparities is critical in reducing the turnover rate among contract nurses.

By starting from an Intellectual Capital Management (ICM) perspective, these strategies explore the mechanisms between nurse turnover intention and hospital management. Using talent retention policies and stressor analysis as the bridge in the assessment system, hospitals and nurse managers can effectively intervene to reduce nurses' turnover rates. These measures not only enhance the job satisfaction and well-being of nurses but also contribute to the overall performance and reputation of healthcare organizations.

2.2 Research on nurse occupational identity (NOI)

2.2.1 Definition of occupational identity

Occupational identity plays a crucial role in shaping an individual's self-concept, particularly in the context of nursing. It is a reflection of how individuals perceive their roles and

responsibilities in their profession (R. G. Zhu, 2019).

Occupational identity is derived from the role an individual plays in their job, strongly influenced by their perception of what it means to be and act as a nurse (Fagermoen, 1997). It is central to the quality of nursing care, the recruitment of nursing students, and the retention of existing staff. A well-defined and flexible occupational identity enhances the professional experience and job satisfaction of nurses (Sabanciogullari & Dogan, 2015; Wildeman et al., 2013).

Professional identities begin to form at the start of nursing education and continue to evolve through practical experiences and ongoing professional development. These experiences contribute to the development and maturation of a nurse's occupational identity (Philippa et al., 2021; Wildeman et al., 2013). The perception of occupational identity varies among individuals. The ability to ascribe to a specific occupational identity allows nurses to better understand their roles within their practice areas (Philippa et al., 2021).

Understanding and fostering occupational identity in nursing is vital for healthcare organizations. It not only impacts the individual nurse's job satisfaction and professional growth but also affects the overall quality of care provided to patients. By acknowledging and supporting the development of a strong occupational identity, healthcare institutions can improve nurse retention, ensure high-quality patient care, and enhance the overall effectiveness of their nursing workforce.

2.2.2 The dimensions of occupational identity

The concept of identity, as viewed from psychological and sociological perspectives, is indeed multifaceted and complex. Identity encompasses both personal attributes unique to an individual and social aspects acquired through societal engagement (Stets & Burke, 2000). These self-perceptions actively shape and influence behaviour (Reynolds & Subasic, 2016), with individual actions being determined by a combination of personal and social identity elements and the context of the situation (Hogg et al., 1995).

2.2.3 The antecedent variables of occupational identity

In the context of occupational identity, particularly in nursing, several antecedent variables have been identified (R. G. Zhu, 2019):

a). Evaluation by Patients and Family Members

Research indicates that a direct influencing factor of nurses' occupational identity is how

patients or their family members evaluate them. Nurses tend to value patients' recognition and appreciation of their work highly (R. G. Zhu, 2019).

b). Social Recognition and Comparison with Other Professions

The nursing profession, although playing an irreplaceable role in healthcare, often does not receive the same level of recognition or status as physicians. This disparity can lead to biases and undervaluation of nursing work (Danish & Usman, 2010).

c). Work Conditions and Public Perception

The demanding nature of nursing work, often involving long hours and night shifts, coupled with a lack of understanding from some patients and their families, can negatively impact nurses' professional identity. This situation can lead to a diminished quality of nursing work and an increased tendency towards turnover. Here, turnover does not just imply leaving a particular job, but potentially leaving the nursing profession altogether (Modaresnezhad et al., 2021).

These factors highlight the complex interplay between societal perceptions, workplace conditions, and individual self-concept in shaping occupational identity. For nursing staff, addressing these antecedent variables is crucial for fostering a strong professional identity, enhancing job satisfaction, and reducing turnover rates.

2.2.4 The outcomes of occupational identity

Occupational identity indeed forms a crucial psychological foundation for professionalism in nursing, serving as an internal motivator that drives the development of a nurse's career. The concept of occupational identity in nursing encompasses an individual's recognition and valuation of the life and social value inherent in the nursing profession. This identity is pivotal in shaping how nurses view and perform their roles and responsibilities (Jiang et al., 2016).

A robust occupational identity contributes significantly to a nurse's efficiency and effectiveness at work. It helps reduce levels of job burnout and lowers the resignation rate among nurses. Furthermore, a strong occupational identity can alleviate the concerns and anxieties of patients and other medical staff by ensuring competent and committed nursing care (Bu et al., 2016; R. Wu & Lin, 2017). Nurses who possess a high level of occupational identity typically have a more positive perception of their profession. This positive outlook is instrumental in mitigating the adverse effects of a stressful work environment. Nurses with a solid sense of their professional identity are better equipped to handle the challenges and demands of their roles, leading to improved job satisfaction and retention (Xiao et al., 2020).

2.3 Research on mental resilience (RES)

2.3.1 Definition of nursing resilience

Mental resilience is a core resource for individuals to resist pressure and protect mental health. Mental resilience is increasingly recognized as a vital resource for individuals, especially for those in high-stress professions like nursing. It plays a crucial role in helping individuals resist pressure and maintain mental health (Aburn et al., 2016; X. N. Yu & Zhang, 2007).

Originally emerging from psychopathology, resilience was focused on the recovery and healing of individuals who had experienced harm. Over time, the concept has expanded beyond this initial scope. Resilience is now widely regarded as the ability to return to a normal state or to recover easily when facing adversity, trauma, misfortune, or significant changes (Cline, 2015; Connor & Davidson, 2003).

Psychological resilience is a dynamic process of recovery from harm, rather than a static personality trait. It represents the capacity to bounce back and adapt positively in challenging situations (Kester & Wei, 2018). Resilience enables individuals to handle various problems and pressures in life with a healthy and constructive attitude. It is crucial for managing and overcoming crises and stressful situations (Hudgins, 2016).

The American Psychological Association defines psychological resilience as a process in which a person continues to adapt positively under adverse circumstances or significant challenges. This definition emphasizes the ongoing, adaptive nature of resilience (Badu et al., 2020; Cooper et al., 2020; Öksüz et al., 2019; Rutter, 2012).

2.3.2 The dimensions of nurses' mental resilience

The concept of mental resilience, particularly among nurses, is a critical area of focus in healthcare management. Understanding the dimensions of nurses' mental resilience and the antecedent variables that influence it is essential for developing effective support and intervention strategies. Generally, there are three categories in terms of dimensions of nurses' mental resilience (Aburn et al., 2016):

a). Trait Theory

This perspective views psychological resilience as an inherent individual characteristic. It encompasses the natural level and quality of adaptive behaviour that a nurse displays in response to stressful events (Cline, 2015).

b). Consequentialism

This approach focuses on resilience as an outcome of experiencing various obstacles, problems, and traumatic events. It emphasizes an individual's capacity to adapt better after such experiences (Rutter, 1995, 1999).

c). Process Theory

This theory sees psychological resilience as a dynamic process of change. It involves how individuals recover from trauma, adversity, and stress (Gillespie et al., 2009).

2.3.3 The antecedent variables of mental resilience

2.3.3.1 Demographic variables

Research has shown that various demographic factors can influence nurses' psychological resilience:

a). Age, Professional Title, and Work Experience: These factors have been linked to differences in resilience levels among nurses (Y. Zhao et al., 2021).

b). Personal Income, Marital Status, and Children: These personal life factors also play a role in shaping resilience (Guo et al., 2019).

c). Work-Family Conflicts: The balance between work and family life can significantly affect resilience (X. Yu & Zhang, 2007).

d). Social Support, Work Performance, and Self-Efficacy: These are key contributors to resilience, particularly in specialized nursing areas like orthopaedics (Y. Zhao et al., 2021).

e). Educational Level and Departmental Factors: Specific to nurses returning to work post-second birth, these factors are influential (M. Yu & Lee, 2018).

f). Employment Type and Night Shifts: For ICU nurses, these job-specific factors impact psychological resilience (Sun, 2016).

2.3.3.2 Personal variables

The research on the traits and psychological qualities of individual caregivers, particularly nurses, underscores the importance of certain personal attributes in developing and maintaining mental resilience, especially in the face of stressful or adverse events.

Positive life attitude, self-efficacy, emotional stability, and an active orientation are crucial traits that help caregivers return to their pre-event state after experiencing major events. These traits include a positive mindset, self-awareness, and the ability to self-regulate emotions and behaviours in challenging circumstances (Harzer & Ruch, 2015).

Bing et al. (2013) found that psychological qualities (both positive and negative) act as mediating variables between job burnout (emotional exhaustion, depersonalization, reduced

personal achievement) and psychological resilience (self-efficacy, hope, resilience, positivity). This suggests that nurturing positive psychological attributes can mitigate the effects of job burnout and enhance resilience.

A cheerful and positive mindset is positively correlated with higher levels of psychological resilience. Nurses with a positive outlook tend to have stronger self-regulation skills, enabling them to better cope with negative aspects of their work (Guo et al., 2019; Harzer & Ruch, 2015, 2016).

Shi et al. (2016) suggest that selecting nurses who exhibit traits such as absence of depression or anxiety, maintenance of positive attitudes, strong confidence, and the ability to overcome difficulties can establish strong resilience within the nursing staff.

F. Yu et al. (2019) demonstrated that intervention programs focusing on positive emotions can improve the psychological resilience of operating room nurses, thereby enhancing their effectiveness in clinical work.

2.3.3.3 Organizational variables

The relationship between sociability, psychological resilience, and the quality of nursing care is a topic of increasing interest in healthcare research. Studies have shown that the sociability and resilience of caregivers, particularly nurses, are interrelated and can significantly impact their performance and well-being (Bernard, 2021; Delgado et al., 2017; Mills et al., 2017).

Caregivers with good sociability often exhibit higher levels of psychological resilience. The ability to effectively interact and communicate with supervisors, co-workers, and family members can positively influence a nurse's mental resilience (Kester & Wei, 2018).

Positive attitudes and support from supervisors, colleagues, and family enhance a nurse's resilience. This supportive environment enables nurses to be more willing to communicate and engage, which in turn contributes to higher quality nursing care (Kester & Wei, 2018).

Positive leadership is crucial in encouraging nurses to develop higher psychological resilience. Leadership that recognizes and supports the personal and professional growth of nurses can lead to more resilient nursing staff (Cooper et al., 2020).

Hospital administrators are encouraged to pay attention to the psychological resilience of their nursing staff. Encouraging nurses to utilize internal resources, such as their personal strengths, and external resources, like family support, can foster better interpersonal relationships, personal growth, and adaptability (Kunzler et al., 2022).

2.3.4 The outcomes of mental resilience

2.3.4.1 Relationship between intellectual capital and mental resilience

The concept of resilience, particularly in nursing, is gaining prominence as a key factor in effective healthcare delivery and nurse well-being. The varied definitions and interpretations of nursing resilience, as well as its relationship with intellectual capital, provide a complex but vital area of study.

The ability to recover and adapt is essential in the nursing profession, making resilience a priority for nurses' work. This is especially true in high-pressure environments where nurses frequently encounter challenging situations (Linnenluecke, 2017; Mallak, 1998).

Nurses with high resilience typically exhibit traits such as independence, a preference for challenging work, and a willingness to face difficult situations and environments with greater workloads (De Vries & Shields, 2006). Resilience in nursing is often characterized by the ability to overcome adversity, adaptability, good mental health, and the capacity to bounce back from challenges (Aburn et al., 2016).

Resilient nurses are often adaptable and accepting of challenging tasks, which tends to correlate with a lower willingness to leave their profession (Daou et al., 2019).

Intellectual capital and resilience are interconnected concepts. Intellectual capital components, particularly structural capital, and social capital, contribute to resilience. For instance, learning opportunities within the structural capital can reinforce the impact of intellectual capital on resilience (Daou et al., 2019; Mubarik et al., 2022).

Social capital has been found to mitigate the effects of burnout, especially for those with below-average resilience (Gensimore et al., 2020). This suggests that relationships and networks within the workplace play a crucial role in supporting nurse resilience.

However, existing studies are limited, and further studies are needed to explore the relationship between nurses' intellectual capital and resilience.

The growing interest in the concept of resilience across various fields, including business, healthcare, and nursing, highlights its importance in today's dynamic and often challenging environments. The influence of intellectual capital on resilience, particularly within the context of nursing, is a burgeoning area of research with significant implications.

Research in business and supply chain management has demonstrated that components of intellectual capital, especially structural capital, are crucial in enhancing organizational resilience during turbulent times. Within the nursing field, the role of social capital has been recognized as a mitigator for the effects of burnout, particularly in those with lower levels of

resilience (J. Wang et al., 2020; T. T. Yang et al., 2020).

Despite these insights, there is a notable gap in research on how nursing resilience can be incorporated into organizational behaviour. More specifically, the relationship between various components of intellectual capital (such as human capital, structural capital, and relational capital) and nursing resilience remains underexplored (Duh-Leong et al., 2021).

In conclusion, as the healthcare sector continues to face various challenges, including workforce shortages, increasing patient demands, and evolving health crises, the resilience of nursing staff becomes increasingly critical. By focusing on the relationship between intellectual capital and nursing resilience, researchers and healthcare leaders can develop targeted interventions and policies to support and strengthen the nursing workforce. These efforts are essential for ensuring high-quality patient care and the long-term sustainability of healthcare systems.

2.3.4.2 Relationship between mental resilience and nurse retention

The relationship between nursing staff resilience and turnover rates is an emerging area of interest in healthcare research, with implications for how hospitals manage and support their nursing workforce.

Research indicates a slight positive correlation between nursing staff resilience and turnover rates (Borg et al., 2021). Therefore, resilience becomes a good trait for nurses (R. Huang, 2008).

Resilience is increasingly recognized as a desirable quality in nursing. Some private hospitals have even incorporated nursing resilience into their remuneration systems, recognizing it as indicative of good psychological quality (Kim & Jang, 2011). This approach not only reflects the hospital's positive attitude towards nursing staff but also helps ease tensions within the medical team (Swensen & Shanafelt, 2017; Underdahl et al., 2018). Nurses with higher resilience levels tend to have a lower propensity to leave their jobs (Mills et al., 2017). Meta-analyses suggest that focusing on increasing caregiver resilience could be more effective than directly addressing nurse turnover rates (Bernard, 2021; Cao & Chen, 2021; Van Camp & Chappy, 2017; M. Yu & Lee, 2018; Y. Zhao et al., 2021).

Y. Zhao et al. (2021) found that nursing job satisfaction and social support act as intermediate variables between resilience and turnover. This suggests that enhancing resilience indirectly affects turnover by improving job satisfaction and leveraging social support. This relationship involves various aspects, including nurses' value judgment of their work, work intensity, mental quality, and self-identification with the nursing profession (Guo

et al., 2017; Guo et al., 2019).

Another study shows that a caregiver's personal values affect her resilience and willingness to leave (F. Zhou & Wang, 2015). A strong correlation exists between burnout and resilience. Greater resilience can protect caregivers from emotional distress and reduce their intention to leave the profession (Rushton et al., 2015). The relationship between nursing staff resilience and turnover intention has been under-researched in China. Therefore, studies focusing on this relationship, such as those using modelling approaches, can significantly contribute to nursing management practices in China and provide insights for improving nurse retention and job satisfaction (Siu et al., 2009).

In summary, enhancing nursing resilience is a crucial strategy for reducing turnover rates, improving job satisfaction, and maintaining a stable nursing workforce. This approach requires a holistic view that encompasses not just individual resilience training but also organizational support systems, positive work environments, and policies that acknowledge and address the unique challenges faced by nurses.

2.4 Research on job stress (STRES)

2.4.1 Definition of job stress

Job stress in nursing is a critical issue, given the demanding nature of the healthcare environment. Understanding and addressing job stress is essential for the well-being of nurses and the quality of patient care they provide.

Job stress is conceptualized as a complex bio-psychosocial response to workplace events. Work stress is also a work-related psychological stress response, reflecting an individual's feelings about the workplace and their psychological qualities (Friganović et al., 2019; Mohammad Mosadeghrad, 2014).

The stress that caregivers experience in the workplace often mirrors their psychological qualities (García Izquierdo et al., 2018). This perspective suggests that an individual's mental resilience and social support can play a significant role in managing workplace challenges, including patient illness, work burden, patient complaints, and even issues like sexual harassment and family conflicts. Caregivers who effectively manage their job stress can positively influence the workplace environment. They can help their colleagues cope with work-related pressures, contributing to a more supportive and less stressful work environment.

Despite the importance of this issue, research on job stress among Chinese nurses,

particularly in relation to their intention to leave the profession, has been limited (Pan & Zhang, 2006; Sun, 2016). This gap signifies a need for more focused studies in this area.

2.4.2 Dimensions of job stress

The concept of job stress is multi-dimensional and complex, with various factors contributing to its manifestation in the workplace. Understanding these dimensions is crucial for addressing job stress effectively, particularly in high-stress environments like healthcare (Pishgooie et al., 2019). The seven dimensions of job stress are:

a). Task Requirements

This dimension focuses on the quantity, quality, and timeliness of work, along with other constraints. Higher complexity, tighter deadlines, or strained employee relationships can significantly increase work-related stress (H. Yu, 2007).

b). Support and Feedback

The level of support and feedback from leaders or colleagues impacts stress levels. Frequent feedback may increase stress for some, while a lack of guidance and feedback can cause uncertainty and future stress due to higher unpredictability (Pingo et al., 2020).

c). Autonomy

This refers to the freedom employees have to make decisions about their work without constant supervision. While autonomy can reduce stress in standardized or well-supported work environments, it can increase stress in more complex roles where greater independence is required (Soltani et al., 2013).

d). Role Conflict

Stress arises when there is ambiguity or conflict in job roles, leading to a mismatch between expected and actual work responsibilities. Balancing role expectations with reality is a common source of workplace stress (De Jonge et al., 2000; Soltani et al., 2013).

e). Fairness and Justice

Perceptions of unfairness or injustice in the workplace significantly contribute to stress. Employees feeling unfairly treated may experience feelings of isolation or withdrawal, which are stress responses (Matta et al., 2017; Y. Zhang et al., 2014).

f). Career Development

Hindered career development is a stressor, particularly for employees who feel their growth and progression are blocked or limited (Yarbrough et al., 2017).

g). Work-Family Balance

Balancing work and family life is a critical stressor, especially for those who place a higher value on family. An imbalance can be a significant source of stress, as demonstrated in many studies (Hatam et al., 2016; Soltani et al., 2013).

These seven dimensions significantly influence job stress. However, as job stress is a multifaceted concept, it is essential to consider these dimensions in conjunction with the external environment for a comprehensive understanding. Past studies have highlighted the importance of this holistic approach in understanding and addressing job stress.

2.4.3 The antecedent variables of job stress

Job stress is a multifaceted phenomenon influenced by various factors, with studies often focusing on different aspects based on their specific objectives and perspectives. Common variables used to study work stress include (Babapour et al., 2022; E. Lee & Jang, 2020; Pishgooie et al., 2019; Soltani et al., 2013; Wolfgang, 1988):

a). Job Requirements: This refers to the challenges encountered due to task complexity and volume. Excessive or complex tasks can significantly increase work-related stress.

b). Work Environment: Elements such as noise, temperature, lighting, and overall environmental quality play a role in stress levels. Poor working conditions, such as excessive noise or inadequate lighting, can contribute to increased stress.

c). Working Hours: Extended working hours can introduce uncertainty and imbalance in an employee's life, leading to increased stress.

d). Social Support: The level of support from supervisors and peers is crucial in managing job stress. Insufficient support often results in higher stress levels, indicating an inverse relationship between support and stress.

e). Role Conflict: This arises from a discrepancy between an employee's actual responsibilities and their expected roles. Unless an individual has high self-regulation skills, the number and complexity of job roles can be a significant source of stress.

f). Job Satisfaction: Generally, higher job satisfaction is associated with lower stress levels. Employees who are content with their jobs are less likely to experience high stress.

g). Career Development Opportunities: Lack of career advancement opportunities can lead to increased stress and prompt employees to leave their jobs.

h). Other Factors: While the above are common factors influencing job stress, numerous other variables can play a role. These factors may vary from one study to another and are often specific to the particular work context being examined.

2.4.4 The outcomes of job stress

The impact of work stress on health professionals, particularly in the medical and nursing fields, is a significant concern. This stress, arising from various factors in their work environment, can lead to physical and psychological issues, influencing their job satisfaction, quality of life, and ultimately, their intention to remain in the profession (Wolfgang, 1988).

High levels of work stress can lead to physical health problems such as dizziness, headaches, and chest tightness, as well as psychological issues like sleep disorders, depression, and anxiety. Approximately 69.56% of clinical nurses report average physical health, with 58.69% experiencing anxiety, depression, or other conditions (Yao et al., 2018).

Inability to cope with the challenges of work stress can diminish medical staff's sense of self-achievement, negatively impacting their willingness to stay in their roles (Shang et al., 2014).

Prolonged exposure to work stress often results in a loss of enthusiasm for work, reduced sense of achievement, and a misunderstanding of one's own value. This can lead to a decline in the quality of medical and health services and affect societal perceptions and recognition of the healthcare industry. As work pressure increases, the quality of life and happiness of medical staff decrease (Babapour et al., 2022). A higher workload correlates with reduced job satisfaction and self-achievement, leading to lower retention rates among medical staff and a decline in the level of medical and health services (Anshasi et al., 2020; Friganović et al., 2019).

The stress experienced by medical staff is often due to their unique work environment, high operational load, challenging responsibilities, and complex doctor-patient interactions and relationships.

2.5 Research on job satisfaction (JSAT)

2.5.1 Definition of job satisfaction

The concept of job satisfaction has evolved significantly since its initial proposal in the 1930s. Its development over time reflects the changing understanding of what drives employee contentment and productivity in the workplace (Bernard, 2021; Fournet et al., 1966; Locke, 1969; Mueller & McCloskey, 1990; Organ & Near, 1985).

In the 1930s, American scholars first introduced the concept of job satisfaction, linking it to work behaviour influenced by emotions. They identified a positive correlation between job

satisfaction and production efficiency, suggesting that satisfied employees are more productive (Abu-Tineh et al., 2023).

Locke (1969) viewed job satisfaction as an attitude of employees towards their company and their specific role, expressing it as a positive or pleasant subjective emotion. This definition, however, was seen as somewhat narrow since it might overlook other dimensions of job satisfaction.

Job satisfaction is the degree of difference between what employees receive and what they expect in terms of work gains. This “expectancy” definition suggests that job satisfaction levels are determined by the gap between actual and expected outcomes. This view posits that the larger the gap between actual and expected gains, the greater the job satisfaction. Conversely, a smaller gap results in lower job satisfaction. This approach is often considered a “demand deficiency” view, as it focuses on the discrepancy between expectations and reality (Lawler III & Porter, 1967; Lawler III & Suttle, 1973).

2.5.2 The dimensions of job satisfaction

The understanding and interpretation of job satisfaction have been enriched by various scholars over the years, each contributing unique perspectives that highlight different aspects of this complex concept:

Rabinowitz and Hall (1977) defined job satisfaction as the recognition attitude of employees towards their profession and job content. This definition emphasizes the importance of how employees perceive and value their specific roles and the content of their work (Wargo Sugleris et al., 2018a).

Some researchers believed that job satisfaction is an emotional state arising from various aspects of the work environment, including interpersonal relationships, benefits, job content, and career advancement opportunities. This definition broadens the scope of job satisfaction to include a wide range of factors contributing to an employee’s emotional well-being at work (Maimako & Bambale, 2016).

Dolors Celma-Benaiges et al. (2016) defined job satisfaction in terms of the degree of satisfaction employees exhibit towards their work from both psychological and physiological aspects. This definition integrates the mental and physical reactions of employees to their work environment, acknowledging that job satisfaction is influenced by both mental and physical well-being.

2.5.3 Antecedent variables of job satisfaction

The research on job satisfaction across various fields, including healthcare, has identified multiple factors influencing employee contentment in their roles. These factors range from work environment conditions to personal attributes and organizational management styles (Bernard, 2021).

The work environment significantly affects job satisfaction, with a positive environment enhancing employee satisfaction (Podsakoff et al., 1990; Podsakoff et al., 1996). Work autonomy, social recognition, compensation, and benefits are key factors affecting employee satisfaction (Moorman et al., 1993; Organ & Lingl, 1995; Organ & Near, 1985). Fournet et al. (1966) believed that age, intelligence level, gender, and other personal characteristics of employees can impact their job satisfaction. Wargo Sugleris et al.' (2018b) study suggests that job challenges, rewards, work environment, colleague relationships, and alignment of personal values with job content are influential.

Some scholars in China have also conducted corresponding research.

Xing et al. (2016) identified salary, social relationships, personal condition, family life, and social change as influential factors. Shi et al. (2016) found that corporate image, managers, job returns, work collaboration, and work itself are key factors. Xu (2008) found that salary and benefits, job fit, promotion opportunities, management styles, interpersonal relationships, and work environment are influential. A. Y. Li's (2008) research suggests that social and technological environment factors, self-actualization, and recognition by others (job challenges, responsibility, salary, promotion) are important. L. Wang et al. (2011) believed that individual factors (age, gender, education) and job-related factors (management, supervision, safety, salary, benefits) are significant.

As for the general medical staff job satisfaction, Quratulain and Al-Hawari (2021) argued that attitudes of medical staff toward their work are closely related to the hospital's HR management atmosphere and methods. X. G. Zhang and Guo's (2008) study found that workload capacity affects the job satisfaction of medical staff. Another important factor is that compared to other employees with relatively small workloads, medical staff have a higher workload and significantly lower job satisfaction.

As for the specific nursing staff satisfaction, Piko's (2006) study found that nursing staff job satisfaction is related to their family relationships. If there are conflicts in the family, their job satisfaction is usually lower. A cross-sectional study by Nelson (2002) found that work environment, especially communication with doctors, significantly affects nursing staff

satisfaction.

2.5.4 The outcomes of job satisfaction

The relationship between nurse job satisfaction and the quality of healthcare delivery is critical, with significant implications for patient care and the overall effectiveness of medical institutions.

Nursing work, being inherently service-oriented and dedicated to human health, depends heavily on the satisfaction of nurses with their jobs (Y. Zhang et al., 2014). Higher job satisfaction among nurses is often associated with better quality of nursing care.

Job satisfaction also influences nurses' intentions to resign. A lack of satisfaction can lead to higher turnover rates, which in turn impacts the ability of medical institutions to provide high-quality patient care (Jarden & Jarden et al., 2023; Jarden, Jarden, Weiland, Taylor, & Brockenshire et al., 2021).

International studies indicate a cyclical chain in which nurse satisfaction, nurse stability, service quality provided to patients, and patient satisfaction all influence each other (Jarden & Scott et al., 2023). This cycle underscores the interconnected nature of these elements in healthcare delivery.

A decline in nurse job satisfaction can lead to several negative outcomes, including dissatisfaction with work, negative work attitudes, and a direct impact on the quality of care provided to patients and their satisfaction (Waltz et al., 2020).

Dissatisfaction among nurses can lead to challenges in adhering to hospital management, increased sick and personal leave, absenteeism, and ultimately, nurses leaving their positions (Jun et al., 2021).

2.6 Research on nurse innovative capabilities (NIC2)

2.6.1 Definition of nurse innovative capabilities

The concept of intellectual capital in the context of nursing and healthcare management is increasingly recognized as a vital component for organizational success and innovation. Intellectual capital encompasses the knowledge, skills, and intellectual property held by members of an organization, contributing significantly to its value and competitive advantage (Kirchner et al., 2020).

Galbraith (1982) put forward the concept of Innovative Capabilities by defining that

intellectual capital is not only invisible but also requires transformation to be effective. He viewed intellectual capital as a process of knowledge accumulation that increases in value, a process he termed “innovative capability.” This perspective underscores the need for intellectual capital to evolve and adapt to remain valuable. The shift towards a knowledge-based economy has blurred the lines between market value and book value. Traditional tangible assets like machinery have become less significant compared to the intangible assets represented by intellectual capital. Innovative capability is key to maximizing the value of these intangible assets (Z. Xu, 2014).

Stewart (1991) expanded on this idea by linking intellectual capital directly to innovative capability. He emphasized the challenge in defining intellectual capital but suggested that its effective collection and application could significantly enhance the value of a health institution. By doing so, an organization could surpass its peers in terms of value and service delivery (Stewart, 2007, 2010).

Davidson expanded on Stewart’s theory, defining innovative capability as the combination of knowledge, experience, professional technology, and the ability to transform intellectual capital into real-world assets. This perspective highlights the importance of converting intellectual capital, through a series of organizational activities, into tangible outcomes. Davidson suggests that greater innovative capability is associated with lower turnover of institutional personnel (Lambert & Davidson, 2013).

Brooking et al. (1998) conceptualized intellectual capital as an invisible asset, positing that an organization’s total value equals its ability to transform both visible and invisible assets. This definition underscores the significance of both tangible and intangible assets in determining an organization’s worth.

Sveiby (2001) contended that intellectual capital constitutes invisible assets and distinguishes these from visible, tangible assets, which should not be considered intellectual property.

Sullivan (2012) proposed revising the definition of intellectual capital to reflect its role as part of an organization’s innovative capability. He suggested that the disparity between an organization’s market value and book value should be attributed to its innovative capability, which is a key driver of financial value.

Some scholars emphasized that intellectual capital does not have a fixed physical form but can take various shapes depending on an organization’s innovative capability. This capability is crucial for creating the financial value of intellectual capitals (Edvinsson & Malone, 1997). Bontis (1998) argued that learning is a crucial aspect of innovative capability,

particularly in healthcare organizations where continuous learning can add significant value.

From an accounting perspective, intellectual capability should ideally be quantifiable in monetary terms. This need arises because intellectual capital, while inherently abstract, is a significant asset for organizations, especially in knowledge-intensive industries. Both intellectual capital and the ability to innovate are abstract concepts. Intellectual capital encompasses knowledge, skills, experiences, and innovations that employees bring to their roles. The ability to innovate refers to the capacity to apply this intellectual capital in new and effective ways (Mubarik et al., 2022).

Literature in this field suggests that higher innovation ability correlates with lower turnover among innovative talents. When employees have the capability to innovate and see their ideas valued and utilized, they are more likely to feel satisfied and engaged in their work, reducing their likelihood of seeking employment elsewhere. Therefore, there is a negative correlation between the ability to innovate and the willingness to leave (Bontis et al., 2000; Kirchner et al., 2020; Zeidan, 2021).

2.6.2 Dimensions of innovative capability

Innovative capability is acknowledged as a complex construct that is difficult to measure directly. Many people believe that innovation ability should be composed of wisdom and structure (Bontis, 2001; Jurczak, 2008; Petty & Guthrie, 2000). Wisdom refers to intellectual capital. Medical institutions must first possess intellectual assets, which can then be transformed into intellectual capital. Structure means that the process of transformation from intellectual assets to capital, the strategy and structural composition of the institution play a critical role. This structural aspect is crucial in leveraging institutional structures to make intellectual capital relevant and monetizable (J. Chen et al., 2004).

2.6.3 Antecedent variables of innovative capabilities

In the context of the knowledge economy, the role of innovation and intellectual capital, particularly in the healthcare sector, is pivotal. This relationship is increasingly being recognized as a critical factor in the financial management and competitive positioning of medical institutions.

Intellectual capital, encompassing intellectual property and intangible assets, is foundational in the knowledge economy. It is not a specific physical asset but rather a reservoir of knowledge, expertise, and innovation potential within an organization (Stewart,

1991). He emphasized that the knowledge economy cannot exist without innovation, as it relies on the conversion of intellectual capital into wealth. Thus, innovation is crucial for transforming knowledge and intellectual property into monetary value.

In the era of the knowledge economy, the management of intellectual capital has become a focus for hospital financial management. The challenge lies in developing considerable innovative capabilities within hospital management. With the rise of translational medicine, which aims to translate scientific research more quickly and efficiently into medical practice, innovation has become a critical measure of a hospital's competitiveness (Santos-Rodrigues et al., 2013).

The emphasis on innovation in the medical industry, particularly with the advent of translational medicine, highlights the crucial role of innovative capabilities in determining the competitiveness and success of hospitals in the modern healthcare landscape. Translational medicine aims to bridge the gap between basic research and practical clinical applications. This approach has prompted hospitals to focus more on innovation, recognizing it as a pathway to transform scientific discoveries into practical healthcare solutions. The ability to innovate is increasingly being viewed as a key measure of a hospital's competitiveness. It reflects an institution's capability to adapt, evolve, and incorporate new scientific findings and technologies into clinical practice (Day-Duro et al., 2020; Kirchner et al., 2020; Santos-Rodrigues et al., 2013).

The international medical community, including researchers and practitioners, acknowledges that innovation is crucial for the growth and prosperity of hospitals and healthcare professionals (Covell & Sidani, 2013b). This recognition spans both the development of new treatments and the improvement of existing healthcare practices. Scholars assert that innovation leads to the creation of wealth and enhances the intellectual capital of organizations. In the context of hospitals, this involves leveraging knowledge and technical capabilities to accumulate valuable assets, thereby increasing overall institutional value.

Many hospitals have responded to this paradigm shift by investing significantly in innovation, effectively becoming research hospitals. This investment reflects a commitment to staying at the forefront of medical science and patient care (Bao et al., 2013; Santos-Rodrigues et al., 2013). Innovation has become a focal point in financial management within the healthcare sector. It is viewed not only as a result of R&D activities but also as a vital component of the knowledge economy. The integration of innovation and intellectual capital is a strategy to elevate the value of medical institutions. It demonstrates a hospital's

commitment to professional excellence and scientific research (Day-Duro et al., 2020).

2.6.4 The impact of innovative capability

The relationship between intellectual capital, innovation ability, and organizational performance, especially in high-tech and healthcare industries, has been a subject of extensive research. Various studies have explored this relationship, revealing diverse findings that highlight the complexity of these interconnections.

Bontis et al. (2000) studied the performance of Canadian and Malaysian firms and found a positive correlation between the ability to innovate and firm performance. The study also noted a negative correlation between innovation ability and employee turnover intentions. Similarly, Riahi Belkaoui (2003) studied multinational companies and observed a strong link between innovation and improved performance in companies with many foreign branches.

Maldonado-Guzmán et al. (2018) focused on high-tech companies and echoed earlier findings that innovation ability positively impacts company performance. Utilizing questionnaires, these studies confirmed a positive relationship between innovation ability and company performance in high-tech sectors (Al Naqbia et al., 2020; X. Liu & Yang, 2021).

Tyokwe and Naicker (2021) conducted their study in South African Hospitals. This study found a significant relationship between innovation, employee value, and hospital performance. However, the regional specificity of the study suggests that these relationships might vary based on the nature of the local industry.

S. Li et al.'s (2023) study in the computer industry demonstrated that innovation ability significantly affects performance in the computer industry. Iqbal et al. (2022) investigated the Financial Performance of Listed Companies. This research did not find a significant relationship between innovation and financial performance. Lu (2014) concluded that innovation ability in the real estate industry does not necessarily guarantee high performance in the real estate industry.

These diverse findings illustrate the complexity of defining and measuring innovation ability and its impact on organizational performance. They suggest that while innovation is generally beneficial, its specific effects can depend on industry characteristics, regional factors, and the nature of the innovation process itself. In healthcare, particularly, the implications of innovation extend beyond financial performance to include patient care quality, making it a critical area for ongoing research and investment.

2.7 A need to propose new model for contracted nurses' turnover intention

Existing theories explaining the turnover intention of nursing staff, particularly contracted nurses, are often adaptations from other industries or come with certain contextual limitations. This suggests a need for theories specifically tailored to the unique dynamics of the nursing profession. Intellectual capital is intrinsically linked to innovative capacity. The latter is seen as a necessary condition for the former, as it enables the transformation of intellectual assets into tangible capital. The combination of intellectual capital and innovative capacity is a common theme in management studies, and this study finds a similar trend in nursing (Bao et al., 2013; Luo & He, 2010; J. Wang et al., 2020).

The study acknowledges that the factors influencing turnover intentions among contracted nursing staff in China may differ from those identified in existing literature, necessitating a revised approach. The unique healthcare environment in China, particularly for contracted nurses, requires specific attention in this study. Chapter Three will represent the main research structure, addressing the specificities of contracted nursing staff's turnover intentions in China.

Chapter 3: Research Method

3.1 Study design

3.1.1 Research model

The primary objective of this thesis was to investigate the turnover intentions of contracted nursing staff and to evaluate a proposed research model. The study involved 608 contracted nursing staff members from five tertiary public hospitals in Shenzhen, serving to assess the model's validity. Owing to the complexity and multitude of variables within the model, the researcher faced challenges in effectively elucidating the patterns. Consequently, the study initially employed multiple regression analysis to identify variables significantly associated with turnover intention. Subsequently, it utilized a reduced model of Structural Equation Modelling (SEM) to elucidate the interrelationships among the variables in the model, thereby fulfilling the thesis's main objective.

The conceptual model of this study is shown in Figure 3.1, where the main variables are described as below:

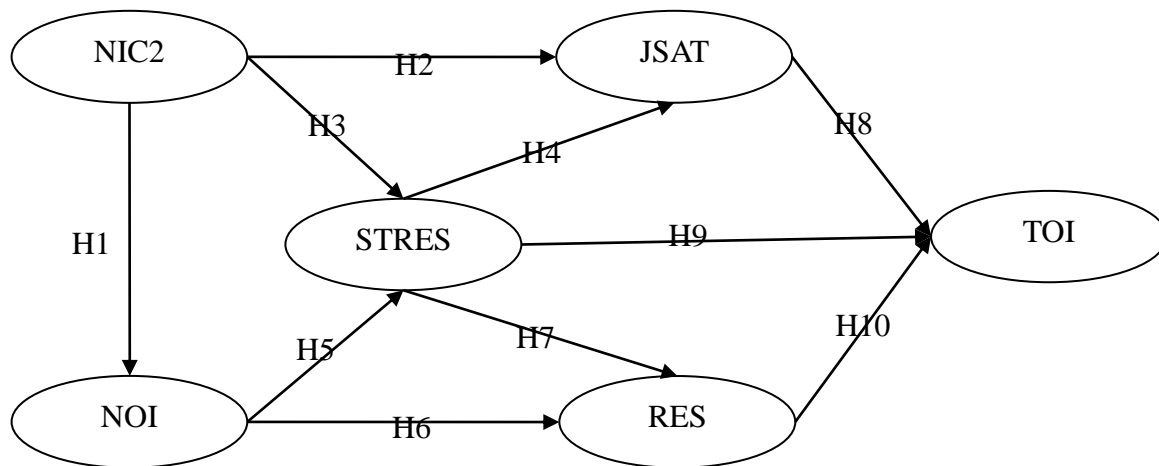


Figure 3.1 The conceptual model of contracted nurse's turnover intention

Note: NOI - Nurses' Occupational Identity; JSAT - Nurse Job Satisfaction Scale; TOI - Turnover Intention; STRES-Nurse Job Stress; NIC2- Nurse Intellectual Capital and Innovative Capabilities; RES-Nurse Mental Resilience

3.1.2 Scale design

(1) Nurses' Occupational Identity Scale (NOI): Numerous methods exist for assessing a

nurse's occupational identity, with the Nurses' NOI being particularly prevalent in China. This scale (as shown in Table 3.1), developed by C. Liu et al. (2012) from the Second Military Medical University, is based on a questionnaire and was constructed by integrating insights from international literature on nurses' professional identity, qualitative interviews, expert consultations, and the contextual realities in China. The NOI encompasses five dimensions and 30 items (each representing a questionnaire question), specifically: nine items for professional cognition evaluation, 6 items each for professional social support, professional social skills, and professional frustration coping, and 3 items for professional self-reflection. It employs a 5-level Likert scoring system, ranging from "very inconsistent" to "very consistent," scored from one to five points. All items are positively stated, with the maximum score being 150 points. The score for each dimension is calculated by dividing the total score of that dimension by the number of items it contains. Higher scores indicate stronger professional identity and a higher level within the respective dimension. Scoring categories are as follows: 30 to 60 points indicate a low level, 61 to 90 points also denote a medium-low level, 91 to 120 points correspond to a medium level, and 121 to 150 points reflect a high level. For each dimension, the average value of the items within that dimension is taken to represent the dimension as empirical data.

Table 3.1 Nurses' Occupational Identity Scale (NOI)

	No.	Item	Strongly Disagree (=1)	Disagree (=2)	Sometimes Agree (=3)	Agree (=4)	Strongly Agree (=5)
Career Cognition and Evaluation Dimension	1	Nursing work gives me a sense of value.					
	2	I feel confident approaching and interacting with anyone I meet.					
	3	Understanding and support from colleagues brings me happiness.					
	4	I firmly believe that people have the agency to adapt and optimize their professional environment.					
	5	I think career choices involve both inevitability and chance; recognizing this leads to action.					
	6	Nursing work matches my interests and personality.					
	7	The nursing profession helps me gain respect from the public.					
	8	I enjoy communicating with people and actively seek social interactions.					
	9	Recognition from doctors and managers brings me happiness.					
Career Social Support Dimension	10	I feel that individuals can develop and grow in their careers.					
	11	I believe those dedicated to their profession will reap rich rewards from their career.					
	12	Leaving the nursing profession would cause me emotional distress.					
	13	My daily work is filled with things that interest me.					
	14	I am confident in my social conduct.					
Career Social Skills Dimension	15	Nursing work provides me and my family with valuable medical resources.					
	16	When facing career challenges, I think positively and strive to find solutions without giving up.					
	17	I feel that analyzing my strengths and weaknesses narrows the gap between my ideal and real self in my career.					
	18	Working in nursing brings me joy.					

Career Setback Coping Dimension	19	Faced with a problem, I usually can find several solutions.
	20	Satisfaction from patients and their families brings me happiness.
	21	I view career setbacks not as obstacles but as stepping stones to higher goals.
	22	Nursing work allows me to utilize my personal abilities and strengths.
	23	I prefer comparing myself with those who are stronger than me to motivate myself.
	24	When in a bad mood, I talk to friends, listen to music, or engage in sports to adjust my mood.
	25	If I try hard, I can always find a solution to problems.
Career Self- Reflection	26	My current position allows me to utilize my abilities and achieve happiness.
	27	Even if others oppose me, I can still achieve what I want.
	28	When facing difficulties, I compare myself with those in harder situations.
	29	I have clear career development goals.
	30	I feel a sense of responsibility to continue in the nursing profession.

(2) The Karlusk-Miller Nurse Job Satisfaction Scale (JSAT, see Table 3.2): Among the extensive literature on measuring job satisfaction among nursing staff, the Karlusk-Miller Nurse Job Satisfaction Scale (JSAT) is frequently referenced. This scale comprises 31 items, designed to measure eight distinct components of nurse job satisfaction. These components include: 1) satisfaction with extrinsic rewards, encompassing six items; 2) scheduling, with 4 items; 3) social and interaction opportunities, featuring 3 items; 4) collegial relationships and support, also with 3 items; 5) scholarly opportunities, consisting of 2 items; 6) salary and benefits, with 3 items; 7) support for family responsibilities, which includes 2 items, as noted by McCloskey and McCain (1987) and Mueller and McCloskey (1990). Respondents assess their job satisfaction for each item using a 5-point Likert scale, which ranges from very dissatisfied (1 point) to very satisfied (5 points). For each dimension, the average value of the items within that dimension is taken to represent the dimension as empirical data.

Table 3.2 The Karlusk-Miller Nurse Job Satisfaction Scale (JSAT)

	No.	Item	Very dissatisfied (=1)	Dissatisfied (=2)	Neutral (=3)	Satisfied (=4)	Very Satisfied (=5)
Salary and Benefits	1	Salary					
	2	Vacation Time					
	3	Related Benefits					
	4	Working Hours					
	5	Scheduling Flexibility					
Scheduling	6	Opportunities for Day Shifts					
	7	Opportunities for Weekend Breaks Each Month					
	8	Flexibility in Arranging Weekend Rest					
	9	Compensation for Weekend Work					
	10	Maternity Leave Duration					
Work-family balance	11	Kindergarten/Childcare Facilities					
	12	Satisfaction with Direct Supervisor					
	13	Colleagues (Nurses) You Work With					
Relationship with colleagues	14	Doctors You Work With					
	15	Nursing Model Used in the Ward					
	16	Opportunities for Social Interaction at Work					
Career opportunities	17	Opportunities for Socializing with Colleagues After Work					
	18	Opportunities for Interprofessional Communication					
	19	Opportunities for Communication with Nursing School Faculty					
	20	Opportunities to Participate in Department or Hospital Committees					
Salary and Benefits	21	Control Over Work Processes					
	22	Opportunities for Career Development					
	23	Recognition of Your Work by Leadership					

Factors Associated with Turnover Intention of Contracted Nurses in Public Shenzhen Municipal Hospitals

	24	Recognition of Your Work by Colleagues
	25	Frequency of Encouragement and Praise
	26	Opportunities for Participation in Nursing Research
	27	Opportunities to Write and Publish Articles
Control and Responsibility	28	Magnitude of Responsibilities Undertaken
	29	Control Over Work Environment
	30	Degree of Participation in Decision Making at Workplace
	31	Overall Satisfaction with Job

(3) Turnover Intention Scale (TOI, see Table 3.3): A prominent tool for assessing turnover intentions among hospital nursing staff in China is the Turnover Intention Questionnaire (TOI). The most extensively utilized version in nursing research within China is the Chinese adaptation, translated and revised by J. Huang (2008). This questionnaire employs a 4-level Likert scoring method and comprises 6 items across 3 dimensions. Items 1 and 2 are categorized under Dimension I, representing the willingness to resign. Items 3 and 4 fall under Dimension II, indicating the individual's propensity to seek alternative employment. Items 5 and 6 are part of Dimension III, reflecting the willingness to leave the current position. The scoring is conducted inversely; for items one, three, and four the scale ranges from 1 (never) to 4 (often); for items 5-6, it spans from 1 (very unlikely) to 4 (very likely); and for item 2, from 1 (definitely not) to 4 (definitely). A higher score suggests a stronger propensity to leave. The overall willingness to resign is determined by the average total score, calculated as the total score of willingness to resign divided by 6. The interpretation of scores is as follows: ≤ 1 indicates low willingness to resign, >1 and ≤ 2 suggests relatively low willingness, >2 and ≤ 3 denotes relatively high willingness, and a score >3 indicates a high willingness to resign. For each dimension, the average value of the items within that dimension is taken to represent the dimension as empirical data.

Table 3.3 Turnover Intention Questionnaire (TOI)

No	Item	Often (=4)	Sometimes (=3)	Rarely (=2)	Never (=1)
1	Are you considering quitting your current job?				
2	Will you quit your current job?				
3	Do you want to look for another job of the same nature?				
4	Do you want to look for a job of a different nature?				
5	Given your current situation and conditions, how likely do you think it is to find a suitable position in another organization?				
6	If you know there is a job vacancy in another organization that suits you, how likely is it that you will get this job?				

(4) Chinese Nurses Stress Scale (STRES, see Table 3.4): In research concerning work stress among nurses in China, the Chinese Nurses Stress Scale (STRES) is a frequently utilized instrument. This scale, originating from a questionnaire, was translated and revised by M. Lee et al. (2007), becoming a prevalent tool for assessing nurses' work stressors in China. The questionnaire consists of 35 items, categorized into five dimensions: nursing professional and work issues, time allocation and workload, work environment and equipment, patient care,

and management and interpersonal relationships. These 35 items are assessed using a 4-point Likert-type scoring method, with all items scored positively. The total score of the scale ranges from 35 to 140 points, with higher scores indicating increased levels of stress. The scale delineates three stress levels: a mild stress level ranging from 35 to 70 points, a moderate stress level from 71 to 105 points, and a severe stress level from 106 to 140 points. For each dimension, the average value of the items within that dimension is taken to represent the dimension as empirical data.

Table 3.4 Chinese Nurses Stress Scale (STRES)

	No	The social status of nursing work is too low	Never encountered or experienced (=1)	Sometimes encountered or experienced (=2)	Often encountered or experienced (=3)	Almost daily encountered or experienced (=4)
Nursing Profession and Work Issues	1	Too few opportunities for further education				
	2	Low wages and other benefits				
	3	Few opportunities for promotion				
	4	Frequent shift work				
Time Allocation and Workload	5	Little independence in work				
	6	Unclear job division				
	7	Excessive workload				
	8	Not enough nurses on duty				
	9	No time for psychological care of patients				
	10	Too many non-nursing tasks				
	11	Excessive unnecessary paperwork				
	12	Poor working environment				
Work Environment and Equipment	13	Insufficient instruments and equipment needed for work				
	14	Crowded wards				
	15	Fear of making mistakes in work				
	16	Nursing work is not acknowledged by patients and their families				
Patient Care	17	Nursing patients with severe illnesses				
	18	Impolite patients' families				
	19	Patients' demands are too high or unreasonable				
	20	Impolite patients				
	21	Uncooperative patients				
	22	Knowledge learned does not meet the psychological needs of patients and their families				
	23	Lack of knowledge about patient education				
	24	Fear that nursing operations will cause pain to patients				
	25	Sudden death of patients being nursed				
	26	Lack of understanding and respect from other healthcare				

Management and Interpersonal Relationships		staff
	27	Insufficient understanding and support from nursing managers
	28	Excessive criticism from nursing managers
	29	Doctors being overly critical of nursing work
	30	Lack of understanding and support among colleagues
	31	Conflicts with nursing managers
	32	Difficulty working with certain nurses in the ward
	33	Conflicts with doctors
	34	Lack of a friendly and cooperative atmosphere among colleagues
	35	The social status of nursing work is too low

(5) Mental Resilience Scale (RES, see Table 3.5): Although mental resilience has not been a common focus in nursing studies in China, the researcher's literature review identified the Mental Resilience Scale (RES), created by Connor and Davidson (2003), as a relevant tool. The Chinese version of this scale (RES), translated and revised by X. N. Yu and Zhang (2007), has become the most widely used scale for measuring mental resilience in China. The scale consists of 25 items, divided into three dimensions reflecting the concept of resilience: toughness (13 items), self-strength (8 items), and optimism (4 items). It employs a 5-level Likert scoring system: "never" scores 0 points, "rarely" 1 point, "sometimes" 2 points, "often" 3 points, and "always" 4 points. The scale's total score is out of 100 points. A score ranging from 0 to 56 points indicates a low level of mental resilience, from 57 to 70 points suggests a medium level, and 71 points or more signifies a high level of mental resilience. Higher scores denote a greater level of mental resilience in participants. For each dimension, the average value of the items within that dimension is taken to represent the dimension as empirical data.

Table 3.5 Mental Resilience Scale (RES)

	No.	Item	Never (=1)	Rarely (=2)	Sometimes (=3)	Often (=4)	Always (=5)
Resilience	1	I can adapt when changes occur.					
	2	When facing stress, I have at least one close and safe person who can help me.					
	3	Sometimes fate or God can help me when my problems cannot be clearly resolved.					
	4	I can handle anything that happens in my life journey.					
	5	Past successes give me confidence to handle new challenges or difficulties.					
	6	When facing problems, I try to see the humorous side of things.					
	7	Having gone through trials, I have become stronger.					
	8	After being sick, injured, or suffering, I can easily recover.					
	9	I believe everything happens for a reason, good or bad.					
	10	No matter the outcome, I always give my best effort.					
	11	Even with obstacles, I believe I can achieve my goals.					
	12	Even when it seems hopeless, I still don't give up.					
	13	When stress or crisis comes, I know where to get help.					
Strength	14	Under pressure, I can concentrate on thinking about the problem.					
	15	I prefer to take the lead in solving problems rather than letting others decide everything.					
	16	I am not easily defeated by failure.					
	17	When dealing with challenges and difficulties in life, I think I am a strong person.					
	18	If necessary, I will make an unpopular or difficult decision to influence others.					
	19	I can deal with unpleasant or painful feelings such as sadness, fear, and anger.					
	20	Sometimes when dealing with life's difficulties, I have to rely on my intuition.					
	21	I have clear goals in my life.					
Optimistic	22	I feel that I can control my own life.					
	23	I enjoy challenges.					
	24	No matter what obstacles I encounter on my life's journey, I will strive to achieve my goals.					
	25	I am proud of my achievements.					

(6) Nurse Intellectual Capital and Innovative Capabilities (NIC2, see Table 3.6): To assess a nurse's intellectual capital and innovative capacity, the NIC2 scale serves as an effective instrument. The intellectual capital and innovative capacity measurement used in this thesis draws inspiration from the scale developed by Subramaniam and Youndt (2005). Their research explored the relationship between intellectual capital, its various dimensions, and innovation ability. The scale encompasses a total of 14 indicators. Within these, human capital, as a measure of innovative capacity, includes five measurement indicators. Organizational capital and social capital are represented by five and four measurement indicators, respectively, as identified in their study (Subramaniam & Youndt, 2005). For each dimension, the average value of the items within that dimension is taken to represent the dimension as empirical data.

Table 3.6 Nurse Intellectual Capital and Innovative Capabilities (NIC2)

	No	Item	1	2	3	4	5	6	7
Human Capital	1	Our employees are skilled technicians.							
	2	Our employees are widely regarded as the best in the industry.							
	3	Our employees are creative and intelligent.							
	4	Our employees are experts in specific tasks and functions.							
	5	Our employees develop new ideas and knowledge.							
Social Capital	6	Our employees are adept at collaborating to diagnose and solve problems.							
	7	Our employees share information and learn from each other.							
	8	Our employees interact and communicate with people in different fields of healthcare.							
	9	Our employees collaborate with suppliers, alliance partners to develop solutions.							
	10	Our employees apply knowledge from one area of healthcare to problems and opportunities in another.							
Organizational Capital	11	Our organization uses patents and licenses as a way to store knowledge.							
	12	Most of the knowledge of our organization is contained in manuals, databases.							
	13	The culture (stories, rituals) of							

- our organization contains
valuable ideas, ways of
operating.
- 14 Our organization embeds most
of its knowledge and
information into structures,
systems, and processes.
-

3.1.3 Research hypotheses

As depicted in Figure 3.1, this study proposes 10 hypotheses, as follows:

Hypothesis 1 (H1): NIC2 positively influences NOI.

Previous studies suggest a positive correlation between intellectual capital, innovation capability, and professional identity (Sullivan, 2012; Waltz et al., 2020; Z. Xu, 2014). Generally, higher acceptance of intellectual capital and innovation capability correlates with increased professional identity. The enhancement of intellectual capital and innovation capacity is crucial for nurses in the healthcare industry. Intellectual capital encompasses not only knowledge and skills but also includes nurses' judgment, problem-solving abilities, and innovative thinking in their actual work. When nurses possess abundant intellectual capital, they can perform nursing tasks more efficiently and accurately, thereby enhancing job quality and patient satisfaction. The ability to innovate enables nurses to adapt to the ever-changing medical environment, propose novel work methods and care strategies, thus providing higher quality nursing services to patients. Therefore, as nurses' intellectual capital and innovation capabilities improve, their job satisfaction also increases, as they feel their work is more valuable and fulfilling.

Hypothesis 2 (H2): NIC2 positively influences JSAT.

Existing research indicates a positive correlation between the intellectual capital and innovation capability of contracted nurses and their job satisfaction (Jarden, Jarden, Weiland, Taylor, & Brockenshire et al., 2021; Sullivan, 2012; Waltz et al., 2020; Z. Xu, 2014). Typically, greater intellectual capital and innovation capability are associated with higher job satisfaction. Job satisfaction is an important indicator for measuring nurses' work performance and the quality of the work environment. When nurses are satisfied with their work, they are more likely to maintain a positive work attitude, establish good relationships with colleagues and patients, thus enhancing overall work efficiency. Nurses with high satisfaction are more willing to actively participate in teamwork, share their knowledge and experience, thereby fostering the development of the entire team. Additionally, increased satisfaction can enhance nurses' professional identity and loyalty, reducing staff turnover rates.

Hypothesis 3 (H3): NIC2 negatively influences STRES.

There is evidence of a negative correlation between intellectual capital, innovation capability, and work stress among contracted nurses (García Izquierdo et al., 2018; Waltz et al., 2020). Generally, higher levels of intellectual capital and innovation capability are linked to lower work stress. Work stress has a significant impact on nurses' work performance and mental and physical health. Long hours and high-intensity work, dealing with emergencies, and interactions with patients can all contribute to stress for nurses. However, intellectual capital and innovation capacity play a key role in coping with and managing stress. Nurses with a wealth of knowledge and skills may be better equipped to handle emergencies and solve complex problems, thus reducing the occurrence of stressful situations. Innovative thinking can help nurses find more effective coping strategies, reducing the impact of work stress on job performance.

Hypothesis 4 (H4): STRES negatively influences JSAT.

Prior studies show a negative correlation between job satisfaction and work stress among contracted nurses (García Izquierdo et al., 2018; Jarden, Jarden, Weiland, Taylor, & Brockenshire et al., 2021). Typically, lower job satisfaction is associated with higher work stress. There is a close relationship between work stress and job satisfaction. On one hand, work stress may lead to a decrease in nurses' job satisfaction, as excessive stress can cause emotional exhaustion and job burnout, making nurses lose passion and motivation for their work. On the other hand, higher job satisfaction may help nurses better cope with and manage stress, as their positive attitude and emotional investment in their work make it easier for them to relieve stress and remain calm.

Hypothesis 5 (H5): NOI negatively influences STRES.

Research indicates a negative correlation between professional identity and work stress in contracted nurses (Bu et al., 2016; S. C. Liu, 2020; Modaresnezhad et al., 2021; R. G. Zhu, 2019). Nurses with lower professional identity typically experience higher work stress. Professional identity refers to nurses' sense of identification and pride in their profession. When nurses identify more with their professional identity, they are more likely to adhere to professional ethics and standards and actively maintain their professional image. This sense of identity makes them more focused on their work and derive greater satisfaction from it. With the enhancement of professional identity, nurses may value their profession more and be willing to provide higher quality care to patients. At the same time, the enhancement of professional identity may also make nurses more confident and self-respecting, thereby reducing the work stress they experience.

Hypothesis 6 (H6): NOI positively influences RES.

Studies suggest a positive correlation between a contracted nurse's professional identity and mental resilience (Aburn et al., 2016; Bernard, 2021; Bu et al., 2016; Daou et al., 2019; Gensimore et al., 2020; Jiang et al., 2016; Linnenluecke, 2017; Modaresnezhad et al., 2021; Pingo et al., 2020; Van Camp & Chappy, 2017). Nurses with lower professional identity tend to have higher mental resilience. Professional identity refers to an individual's sense of identification and pride in their chosen profession. Research shows that nurses with a higher professional identity are more likely to adhere to professional ethics and standards and actively maintain their professional image. This sense of identity may make nurses more focused on their work and derive greater satisfaction from it. When nurses identify more with their profession, they may be more willing to take on work responsibilities and face challenges in their work, thereby demonstrating greater psychological resilience.

Hypothesis 7 (H7): STRES negatively influences RES.

There is a negative correlation between work stress and mental resilience in contracted nurses (Aburn et al., 2016; Bernard, 2021; Cao & Chen, 2021; Daou et al., 2019; Gensimore et al., 2020; Linnenluecke, 2017; Mubarik et al., 2022; Pingo et al., 2020; Van Camp & Chappy, 2017). Nurses with lower work stress typically exhibit higher mental resilience. Work stress can have a negative impact on psychological resilience. Long hours and high-intensity work, dealing with emergencies, and interactions with patients can all cause stress for nurses. When nurses face greater work stress, they may feel exhausted and anxious, which can weaken their psychological resilience. Nurses with lower psychological resilience may find it more difficult to cope with challenges and stress at work, leading to a higher risk of turnover.

Hypothesis 8 (H8): JSAT negatively influences TOI.

Research indicates a negative correlation between job satisfaction and turnover intention among contracted nurses (Aljohani, 2016; Alshawush et al., 2020; Fasanya & Dada, 2016; Jarden, Jarden, Weiland, Taylor, & Brockenshire et al., 2021). Higher job satisfaction is generally associated with lower turnover intention. When nurses are satisfied with their work, they are more likely to remain loyal to the organization and tend to stay within the organization for a longer period. Conversely, lower job satisfaction may lead to a loss of confidence and a sense of belonging to the organization among nurses, thereby increasing their intention to leave.

Hypothesis 9 (H9): STRES positively influences TOI.

Studies show a positive correlation between work stress and turnover intention in

contracted nurses (Aljohani, 2016; Alshawush et al., 2020; H. Y. Chang et al., 2019; Fasanya & Dada, 2016; García Izquierdo et al., 2018). Higher work stress is typically linked to higher turnover intention. Long hours and high-intensity work can cause nurses to feel exhausted and overstressed, which may decrease their commitment and satisfaction with the organization, leading to an increased intention to leave.

Hypothesis 10 (H10): RES negatively influences TOI.

There is a negative correlation between mental resilience and turnover intention in contracted nurses (Aljohani, 2016; Alshawush et al., 2020; Borg et al., 2021; Daou et al., 2019; Duh-Leong et al., 2021; Fasanya & Dada, 2016; Gensimore et al., 2020; Mubarik et al., 2022). Nurses with higher mental resilience tend to have lower turnover intention. Psychological resilience refers to an individual's ability to adapt and recover when faced with stress, setbacks, or adversity. Nurses with higher psychological resilience can better cope with the challenges and stress in their work, which may make them more willing to remain in the organization. Conversely, nurses with lower psychological resilience may be more easily affected by work stress and consider leaving.

3.2 Questionnaire design

3.2.1 Survey procedure

According to literature, the researcher comprehends the dynamics of contracted nurses' turnover intentions based on scientific evidence. To this end, research published from January 1980 to December 2021 was methodically searched from databases such as PubMed, Web of Science, Embase, and SCOPUS. The search terms included “turnover,” “intellectual capital,” “resilience,” and “retention.” The researcher extracted and narratively synthesized details relevant to the study's topic from the previous research.

The initial phase of the review involved the defining turnover intention, assessing tools, and identifying influential factors. Subsequently, the study reviewed literature on the connotation, components, management, and identification of intellectual capital. The final focus was on the interrelationships among various variables, including intellectual capital, resilience, occupational identity, and turnover intention.

Following this extensive literature review, the determined that a large-scale cross-hospital survey would be the most effective method for gathering data on the turnover intentions of contracted nurses and the influencing factors. This approach was chosen to ensure the

collection of a reliable and accurate dataset, which would be pivotal for further analysis in the study.

The researcher employed a convenience sampling method to gather data from contracted nurses working in five tertiary public hospitals in Shenzhen, Guangdong Province, China. These hospitals were selected based on their location in one of the five out of eleven administrative districts in Shenzhen, each containing a municipal hospital that meets the criteria set by the National Academy of Engineering.

Data collection was structured into two primary sections:

1. Socio-demographic Data: This section encompassed information such as the hospital's level, as well as the nurses' age, gender, and marital status.
2. Questionnaires Related to Turnover Intention: This section included main questionnaires that incorporated variables like Turnover Intention Questionnaire (TOI), Nurses' Professional Identity Scale (NOI), Mental Resilience Scale (RES), Chinese Nurses Stress Scale (STRES), Karlusk-Miller Nurse Job Satisfaction Scale (JSAT), and Nurse Intellectual Capital and Innovative Capabilities (NIC2).

For data collection, two experienced nurses from each participating hospital were selected as partners. They received uniform training to collect data from their respective hospitals, which was then collated and entered in a standardized format.

The inclusion criteria for the tertiary hospitals were:

1. Recognition and recording by government departments.
2. Having over 800 beds.
3. Employing more than 200 nurses.

The exclusion criteria for the hospitals included:

1. Nurses with less than one year of experience in a tertiary hospital.
2. Nurses who refused to participate in the study.

The inclusion criteria for the nurses were:

1. Holding a certificate of registration of nursing qualification.
2. Having worked in the hospital for more than one year.
3. Being contractual nurses.

The exclusion criterion for nurses was an unwillingness to participate in the study.

The questionnaire survey covered comprehensive details including 14 general information points such as gender, age, and department. The six scales comprised: TOI with 6 items, NOI with 30 items, STRES with 35 items, JSAT with 31 items, RES with 25 items, and NIC2 with 14 items. Hence, the questionnaire for this study included a total of 145 items.

3.2.2 Expert interview

In the process of conducting the questionnaire survey for this study, experts played two critical roles: firstly, in determining the content validity of the questionnaire, and secondly, in assessing whether the method of distributing the questionnaire necessitated any special treatment. To ensure the study's robustness and identify any potential areas for improvement, the researcher employed expert validity.

The outcomes of the expert validity assessment revealed that, overall, there were no significant issues with the validity of the questionnaire's content. However, the experts recommended that pre-testing should be conducted when utilizing other questionnaire scales. A notable limitation of this study was the oversight of not considering expert validity during the initial design phase of the questionnaire, which could impact the overall reliability and applicability of the findings.

Additionally, the experts provided two key suggestions:

1. Detailed Description of the Research Model: One group of experts suggested that the research model should be described in more detail to enhance clarity and understanding.

2. Inclusion of Non-Contracted Nurses: Another group, primarily comprising middle and senior nursing managers, recommended including non-contracted nurses in the study for comparative purposes. This inclusion could provide a broader perspective and enrich the study's findings.

Furthermore, the researcher presented a brief summary of potential survey subjects to the experts, who unanimously agreed that the study should proceed. This consensus underscores the relevance and importance of the research, despite the identified limitations and areas for improvement.

3.3 Sampling, data collection and quality control

3.3.1 Sampling

For this study, which focuses on contracted nurses, clinical nurses from five public hospitals in Shenzhen were chosen as the sample population. The inclusion and exclusion criteria were established to ensure that the sample was representative and relevant to the study's objectives.

Inclusion Criteria:

The sample had to meet three specific conditions:

1. The individuals must have been employed at the hospital for a minimum of one year.

2. Their primary role must have been in clinical nursing, with over 80% of their work involving direct patient contact.

3. At the time of completing the questionnaire, their role was in clinical nursing. Additionally, looking back one year from the time of the survey, they must have performed at least nine months of clinical nursing work.

Exclusion Criteria:

Two exclusion criteria were defined:

1. Individuals who, in the 12 months preceding the survey, had been away for training, seconded to other departments, or on maternity leave for more than six months.

2. Those who were unable to concentrate on the questionnaire for various reasons at the time of response.

These criteria ensured that the study's sample was composed of nurses with substantial clinical experience and active engagement in clinical nursing at the time of the study. This focus was vital for accurately assessing factors like turnover intention and job satisfaction among nurses actively involved in patient care.

3.3.2 Data collection (investigation phase)

The development of the research questionnaire involved thorough literature reviews and discussions with experts, ensuring its validity and reliability. Following its formulation, the researcher engaged in strategic planning for the distribution of the questionnaire.

Key steps in the questionnaire distribution process included:

1. Engagement with Nursing Department Directors: The researcher explained the study's objectives to the directors of nursing departments in the five participating hospitals, aiming to gain their support for the successful completion of the study.

2. Assignment of Contact Persons: In each hospital, a contact person (a nurse not involved in the study) was designated to assist nursing staff with any queries regarding the questionnaire. This approach facilitated smooth communication and efficient resolution of any issues that arose during the survey process.

3. Daily Communication with the researcher: The contact persons were instructed to communicate with the researcher daily. If they were unable to address any questions from the participants, the researcher would directly interact with the participants to ensure the questionnaire was completed logically and accurately.

4. Independent and Confidential Completion of the Questionnaire: It was reiterated to

both the contact persons and the participants that the questionnaire should be completed independently, and the confidentiality of responses was to be strictly maintained.

5. Efficient Collection of Responses: The aim was to collect all questionnaires in the shortest possible time, ensuring timely data processing.

6. Use of Questionnaire Stars Platform: To maintain a consistent environment for all participants, Questionnaire Stars Platform was employed as the research tool for distributing the questionnaire. The choice of this software was driven by its capabilities to anonymously detect systematic responses, identify unanswered questions, and automatically convert responses into electronic files, thereby enhancing the efficiency and accuracy of data collection.

By adopting these methods, the study aimed to ensure a high response rate, maintain the integrity of the data collection process, and uphold the ethical standards of confidentiality and independence in participants' responses.

3.3.3 Data collection (data entry phase)

The research questionnaire for this study was comprehensive, encompassing both general information and specific scales relevant to the study's model. The questionnaire included the following components (see Annex A):

1. General Information: This section contained 14 variables, including gender, age, working department, and other relevant demographic details.

2. Scales of the Studied Model:

Turnover Intention Questionnaire (TOI): Consisting of 6 items.

Nurses' Professional Identity Scale (NOI): Comprising 30 items.

Chinese Nurses Stress Scale (STRES): With 35 items.

Karlusk-Miller Nurse Job Satisfaction Scale (JSAT): Including 31 items.

Mental Resilience Scale (RES): Featuring 25 items.

NIC2: Encompassing 14 items.

In total, the questionnaire comprised 145 questions. Participants were expected to take approximately 15 minutes to complete the entire questionnaire. This design ensured a thorough collection of data while being considerate of the respondents' time constraints, aiming to maximize response rates and the quality of the data collected.

3.3.4 Quality control

To ensure the collection of reliable and valid data, the researcher employed the Questionnaire Stars Platform for administering the survey. This tool was chosen for its specific features that enhance the quality and completeness of the responses. Key functionalities of Questionnaire Stars Platform that were particularly important in this study included:

1. Pre-Survey Information and Response Timing Control:

Prior to participating in the survey, respondents were required to read the study's purpose and description.

The software also informed participants that they could not answer more than 2 questions within three seconds. This feature was designed to prevent rushed responses and ensure thoughtful participation.

2. Prompt for Unanswered Questions:

If an unanswered question was detected, whether overlooked or deliberately ignored, Questionnaire Stars would prompt the respondent to complete it. This feature aimed to achieve a high response rate and minimize data gaps.

3. Minimization of Systematic or Wasteful Responses:

Due to the nature of Questionnaire Stars, the likelihood of missing questionnaire answers was reduced. Consequently, the researcher's focus shifted to collaborating with hospital liaisons to remind participants not to respond to questions in a systematic or perfunctory manner, thus avoiding uninformative responses.

For data entry and quality control of the final dataset, the study utilized Epidata 3.0. This software was chosen to ensure accurate and efficient data entry, crucial for the subsequent analysis phase. The combined use of Questionnaire Stars for data collection and Epidata 3.0 for data entry and quality control represents a comprehensive approach to managing and safeguarding the integrity of the research data.

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Chapter 4: Research Results

4.1 Description of subjects

4.1.1 A description of subjects

The study distributed 650 questionnaires across various hospitals, allocating 130 samples per hospital, using Questionnaire Star, a popular software for similar studies in China. Despite the compulsory nature of Questionnaire Star, ensuring a 100% return rate, only 608 of the 650 questionnaires were deemed valid for further analysis, resulting in a valid return rate of 93.54%. Systematically answered questionnaires, identified, and excluded by two experts, contributed to the high return rate. The demographic breakdown of the valid responses included 92.8% (564) female nurses, with 74.4% (452 individuals) aged between 25-39 years. Educational qualifications showed that 73.4% (446 individuals) held a university degree. Work experience was distributed among 2-5 years (26.0%, 158 individuals), 5-10 years (27.3%, 166 individuals), and 10-20 years (22.7%, 138 individuals). The predominant income bracket was between 10,000-14,999, accounting for 49.9% of the participants. Nursing staff with junior, intermediate, and senior titles comprised 26.6%, 33.6%, and 28.0% of the sample, respectively. Regarding departmental distribution, 27.3% of the participants worked in internal medicine, and 17.8% in subordinate units. Notably, 36.1% of respondents expressed dissatisfaction or strong dissatisfaction with their job roles (refer to Table 4.1 for detailed information).

Table 4.1 Description of samples

Items	N (%)	Items	N (%)
Sex		Income(month)	
Male	44(7.2)	<5,000	10(1.6)
Female	564(92.8)	5,000-9,999	184(30.3)
Age		10,000-14,999	298(49.0)
18~24	82(13.5)	14,999-20,000	98(16.1)
25~29	248(40.8)	>20,000	18(3.0)
30~39	204(33.6)	Position	
40~49	60(9.9)	Nurse	590(97.0)
50~59	10(1.6)	Head Nurse	10(1.6)
>60	4(0.7)	Nurse Superior	8(1.3)
Education level		(hospital level)	
Technical secondary	2(0.3)	Job Title	
		Assistant Nurse	58(9.5)

school			
Junior college	154(25.3)	Nurse	162(6.6)
Undergraduate	446(73.4)	Nurse: Advanced	204(33.6)
Postgraduate	6(1.0)	Nurse: Supervisor	170(28)
Working		Chief Nurse (Deputy)	8(1.3)
years(year)		Chief Nurse	6(1.0)
<1	26(4.3)	Status of children	
≥1 and <2	56(9.2)	None	342(56.3)
≥2 and <5	158(26.0)	infant	118(19.4)
≥5 and <10	166(27.3)	Elementary school	86(14.1)
≥10 and <20	138(22.7)	Junior and High school	38(6.3)
≥20 and <30	52(8.6)	University/College	24(3.9)
≥30	12(2.0)	Department/Unit	
Marital status		Obstetrics and	66(10.9)
Married	300(49.3)	Gynaecology	36(5.9)
Unmarried	302(49.7)	Paediatrics	30(4.9)
Divorced/widowed	6(1.0)	Emergency Department	166(27.3)
Night		Internal Medicine	108(17.8)
work(month)		Unit in Internal	28(4.6)
0-4	210(34.5)	Medicine	50(8.2)
5-9	208(34.2)	ICU	50(8.2)
10-14	170(28)	Surgery	74(12.2)
≥15	20(3.3)	Outpatient Department	
Hospital level		Others	
Class I grade A	554(91.12)	Willing to choose	
tertiary hospital		nursing work again	
Class I Grade B	54(8.88)	Strongly disagree	100(16.4)
tertiary hospital		Disagree	120(19.7)
		Unclear	264(43.4)
		Agree	106(17.4)
		Strongly agree	18(3)

4.1.2 Descriptive statistics of variables in the model

The study's research model comprised several critical variables: Nurse Occupational Identity, Job Satisfaction, Turnover Intention, Job Stress, Psychological Job Fitness, Mental Resiliency, Nurse Intellectual Capital and Innovative Capabilities. Descriptive statistics for these variables are presented in Table 4.2. Given that all variables were measured on a Likert scale, they are represented by their means \pm standard deviations. This format provides a clear overview of the central tendencies and variability within each variable, crucial for understanding their roles and interrelations within the research model.

Table 4.2 The variable level status quo of nurses in public hospitals

Variables	Mean \pm S.D.
Occupational Identity (NOI)	97.41 \pm 23.6
Job Satisfaction (JSAT)	93.5 \pm 23.46
Turnover Intention (TOI)	14.38 \pm 3.98

Job Stress (STRES)	83.47±18.05
Mental Resilient (RES)	84.5±16.83
Nurse Intellectual Capital and Innovative Capabilities (NIC2)	70.41±17.22

4.2 Reliability and validity analysis

4.2.1 Reliability test

The reliability coefficient is 0.877 (see Table 4.3), which is greater than 0.8, indicating high data reliability. Regarding the "alpha coefficient if item deleted", the reliability coefficient does not show a significant increase after any item is deleted, suggesting that items should not be eliminated. All the CITC value are greater than 0.4. In summary, the data demonstrate high reliability and are suitable for further analysis.

Table 4.3 Cronbach alpha reliability analysis

Item	CITC	alpha coefficient if item deleted	Cronbach α
NOI1	0.804	0.862	0.877
NOI2	0.821	0.862	
NOI3	0.847	0.862	
NOI4	0.854	0.862	
NOI5	0.833	0.861	
JSAT1	0.655	0.866	
JSAT2	0.595	0.867	
JSAT3	0.733	0.865	
JSAT4	0.768	0.864	
JSAT5	0.734	0.864	
JSAT6	0.808	0.863	
JSAT7	0.762	0.864	
TOI1	-0.604	0.897	
TOI2	-0.521	0.895	
TOI3	-0.463	0.889	
STRES1	-0.489	0.887	
STRES2	-0.496	0.888	
STRES3	-0.423	0.887	
STRES4	-0.488	0.883	
STRES5	-0.511	0.886	
RES1	0.752	0.866	
RES2	0.674	0.867	
RES3	0.729	0.866	
NIC21	0.744	0.861	
NIC22	0.777	0.86	
NIC23	0.754	0.861	
Standardized Cronbach α : 0.846			

4.2.2 Validity test

4.2.2.1 KMO and Bartlett tests

The KMO value is 0.944 as shown in Table 4.4, greater than 0.8, meeting the prerequisites for

principal component analysis, and main components is a good method for synthesizing the information. The data also passed the Bartlett's test of sphericity ($p < 0.05$), suggesting suitability for principal component analysis.

Table 4.4 KMO and Bartlett test results

KMO		0.944
Chi-Squared Test		18464.423
Bartlett's test of sphericity	<i>Df</i>	325
	<i>p</i>	0.000

4.2.2.2 Principal component analysis and common method bias : Harman's single factor test

Principal component analysis shows that the variance explained by the main components accounts for 44.865% of the total variance (see Table 4.5), less than 50%, conforming to the standard for the common method bias: Harman's single factor test. This indicates that there is no severe common method bias, and the data collected in this study can be used for regression analysis.

Table 4.5 Variance explanation and principal component extraction

	Eigenvalues	Variance Explana tion %	Accumulation %		Eigenvalues	Variance Explana tion %	Accumulation %
1	14.265	35.98819	35.98819		14.265	54.865	44.865
2	7.868	19.84964	55.83783		7.868	11.03	65.895
3	5.593	14.1102	69.94803		5.593	6.129	72.023
4	3.17	7.997376	77.94541		3.17	4.499	76.522
5	1.593	4.018871	81.96428		1.593	3.678	80.201
6	1.17	2.951713	84.91599		1.17	2.799	82.999
7	0.956	2.411827	87.32782	-	-	-	-
8	0.728	1.836621	89.16444	-	-	-	-
9	0.59	1.488471	90.65291	-	-	-	-
10	0.491	1.23871	91.89162	-	-	-	-
11	0.446	1.125183	93.0168	-	-	-	-
12	0.427	1.077249	94.09405	-	-	-	-
13	0.306	0.771986	94.86604	-	-	-	-
14	0.294	0.741712	95.60775	-	-	-	-
15	0.255	0.643322	96.25107	-	-	-	-
16	0.216	0.544932	96.796	-	-	-	-
17	0.195	0.491952	97.28796	-	-	-	-
18	0.181	0.456633	97.74459	-	-	-	-
19	0.157	0.396085	98.14067	-	-	-	-
20	0.136	0.343105	98.48378	-	-	-	-
21	0.135	0.340582	98.82436	-	-	-	-
22	0.114	0.287603	99.11196	-	-	-	-
23	0.106	0.26742	99.37938	-	-	-	-
24	0.09	0.227055	99.60644	-	-	-	-
25	0.079	0.199304	99.80574	-	-	-	-
26	0.077	0.194258	100	-	-	-	-

4.2.2.3 Convergent and discriminant validity test

Next, the results of the convergent and discriminant validity tests are presented in Table 4.6.

In conclusion, both convergent and discriminant validity are good.

Table 4.6 Convergent validity and discriminant test results

	1	2	3	4	5	6
NOI	<i>0.929</i>					
JSAT	0.517	<i>0.863</i>				
TOI	-0.532	-0.550	<i>0.801</i>			
STRES	-0.400	-0.564	0.307	<i>0.798</i>		
RES	0.511	0.585	-0.450	-0.260	<i>0.943</i>	
NIC2	0.583	0.662	-0.462	-0.372	0.589	<i>0.942</i>
Cronbach's Alpha	0.968	0.952	0.821	0.895	0.959	0.958
AVE	0.863	0.745	0.642	0.637	0.89	0.888
CR	0.969	0.953	0.836	0.898	0.96	0.96

Note: The bold italicized number on the diagonal represents the square root of AVE.

Convergent Validity: All six factors have Average Variance Extracted (AVE) values greater than 0.5, and all Composite Reliability (CR) values are above 0.7, indicating good convergent validity of the data.

Discriminant Validity: Two methods are used to analyse discriminant validity. Method one checks if the square root of AVE is greater than the correlation of the variable with other variables, with greater values indicating good discriminant validity. Method two compares the correlation coefficients of each factor with other factors to the Cronbach's Alpha. Both methods indicate good results. Each construct's AVE square root is greater than its correlation with other variables, and the correlation coefficients of each factor with others are lower than Cronbach's Alpha, indicating good discriminant validity.

4.2.2.4 Factor loading analysis

Based on the tests for convergent validity and discriminant validity, a factor loading analysis was conducted, and the results are presented in Table 4.7. According to these results, NOI1, NOI2, NOI3, NOI4, NOI5 all have factor loadings greater than 0.4 (0.691, 0.708, 0.721, 0.685, 0.7 respectively) under Factor 3, and less than 0.4 under other factors, indicating that NOI1, NOI2, NOI3, NOI4, NOI5 are under the same dimension, Factor 3. Similarly, JSAT1, JSAT2, JSAT3, JSAT4, JSAT5, JSAT6, JSAT7 have factor loadings greater than 0.4 (0.746, 0.724, 0.688, 0.638, 0.716, 0.67, 0.655 respectively) under Factor 1, and less than 0.4 under other factors, demonstrating that JSAT1, JSAT2, JSAT3, JSAT4, JSAT5, JSAT6, JSAT7 are under the same dimension, Factor 1. In the same vein, TOI1, TOI2, TOI3 have absolute factor loadings greater than 0.4 (-0.728, -0.753, -0.788 respectively) under Factor 6, and less than 0.4 under other factors, indicating that TOI1, TOI2, TOI3 are under the same dimension,

Factor 6. Likewise, STRES1, STRES2, STRES3, STRES4, STRES5 have absolute factor loadings greater than 0.4 (0.759, 0.783, 0.765, 0.867, 0.837 respectively) under Factor 2, and less than 0.4 under other factors, showing that STRES1, STRES2, STRES3, STRES4, STRES5 are under the same dimension, Factor 2. Similarly, RES1, RES2, RES3 have absolute factor loadings greater than 0.4 (-0.728, -0.753, -0.788 respectively) under Factor 4, and less than 0.4 under other factors, indicating that RES1, RES2, RES3 are under the same dimension, Factor 4. Furthermore, NIC21, NIC22, NIC23 have absolute factor loadings greater than 0.4 (0.805, 0.855, 0.832 respectively) under Factor 5, and less than 0.4 under other factors, signifying that NIC21, NIC22, NIC23 are under the same dimension, Factor 5. In summary, the factor loading coefficient analysis results demonstrate that the dimensions and results of the questionnaire in this thesis are rational and suitable for further data analysis.

Table 4.7 Factor loading coefficients

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
NOI1	0.321	-0.149	0.691	0.225	0.261	0.26
NOI2	0.301	-0.181	0.708	0.269	0.236	0.259
NOI3	0.325	-0.149	0.721	0.383	0.279	0.218
NOI4	0.377	-0.133	0.685	0.305	0.258	0.2
NOI5	0.355	-0.114	0.7	0.363	0.273	0.159
JSAT1	0.746	-0.325	0.233	0.12	0.161	0.301
JSAT2	0.724	-0.307	0.171	0.115	0.142	0.266
JSAT3	0.688	-0.224	0.273	0.199	0.294	0.197
JSAT4	0.638	-0.258	0.339	0.234	0.238	0.143
JSAT5	0.716	-0.205	0.342	0.214	0.206	0.172
JSAT6	0.67	-0.232	0.359	0.28	0.3	0.202
JSAT7	0.655	-0.234	0.315	0.271	0.286	0.233
TOI1	-0.287	0.216	-0.34	-0.141	-0.2	-0.728
TOI2	-0.24	0.172	-0.294	-0.161	-0.095	-0.753
TOI3	-0.209	-0.099	-0.039	-0.106	-0.091	-0.788
STRES1	-0.262	0.759	-0.066	-0.041	-0.069	0.002
STRES2	-0.377	0.783	-0.087	-0.097	-0.046	-0.199
STRES3	-0.231	0.765	-0.007	-0.064	-0.165	-0.028
STRES4	-0.02	0.867	-0.18	-0.025	-0.003	-0.013
STRES5	-0.107	0.837	-0.116	-0.081	-0.18	-0.058
RES1	0.232	-0.098	0.282	0.813	0.285	0.134
RES2	0.177	-0.05	0.218	0.909	0.178	0.139
RES3	0.212	-0.091	0.297	0.848	0.213	0.135
NIC21	0.26	-0.201	0.22	0.253	0.805	0.191
NIC22	0.269	-0.13	0.24	0.251	0.855	0.111
NIC23	0.259	-0.133	0.266	0.222	0.832	0.105

4.3 Hypotheses testing

4.3.1 Test results for H1: NIC2 positively influences NOI

H1 was tested using Mplus8.3 for fit regression. The model fit indices for NIC2 and NOI are

summarized in Table 4.8 and Figure 4.1. Firstly, the fit indices were examined: the RMSEA value was 0.097, which is below the acceptable standard of 0.10 and within an acceptable range. The χ^2/df value was 2.39, within the qualified range of less than 3-5, indicating relatively good fit. The CFI value was 0.984, above the qualifying standard of 0.9, representing a good model fit. The TLI value was 0.976, also above the 0.9 standard, showing high model fit. The SRMR value was 0.016, below the qualifying standard of 0.1, indicating good model fit. The VIF value was 3.46, within the acceptable range of 1-10, showing moderate collinearity among model variables. Overall, the above fit indices suggest that the model fits well and is within an acceptable range. After the data confirmed that the H1 model had good fit, the regression results of the model were further analysed. The regression results of the hypothesis NIC2→NOI are reported in Table 4.8. The hypothesis testing criterion is that any interval between the numbers corresponding to Lower 5% and Upper 5%, Lower 2.5% and Upper 2.5%, and Lower 0.5% and Upper 0.5% does not cross zero, indicating the hypothesis is supported. For example, Lower 0.5% corresponds to 0.379, and Upper 0.5% corresponds to 0.51. The line connecting the numbers corresponding to Lower 0.5% and Upper 0.5% (the line connecting 0.379 and 0.51) does not cross zero, indicating the hypothesis is supported, and the coefficient is 0.442, indicating a positive effect, i.e., NIC2 positively influences NOI, thus confirming H1.

Table 4.8 Fitness and regression coefficient results of NIC2 and NOI

Indicator	Value	RMSEA	χ^2/df	CFI	TLI	SRMR	VIF	
		<0.10	<3-5	>0.9	>0.9	<0.1	1-10	
		0.097	2.39	0.98	0.976	0.016	3.46	
			4					
Result	Path	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
	NIC2→NOI	0.379	0.392	0.402	0.442	0.484	0.494	0.51

4.3.2 Test results for H2: NIC2 positively influences JSAT

Similarly, Mplus8.3 was used to fit and regress H2. The model fit indices for NIC2 and JSAT are summarized in Table 4.9. Firstly, examining the fit indices, the RMSEA value was 0.093, below the acceptable standard of 0.10 and within an acceptable range. The χ^2/df value was 3.39, within the qualified range of less than 3-5, indicating relatively good fit. The CFI value was 0.9, almost meeting the qualifying standard of above 0.9, representing a good model fit. The TLI value was 0.909, above the 0.9 standard, showing a high model fit. The SRMR value was 0.035, below the qualifying standard of 0.1, indicating good model fit. The VIF value was

4.517, within the acceptable range of 1-10, showing moderate collinearity among model variables. Overall, the fit indices for H2 suggest that the model fits well and is within an acceptable range.

Table 4.9 Fitness and regression coefficient results of NIC2 and JSAT

Indicator	Value	RMSEA	χ^2 /df	CFI	TLI	SRMR	VIF	
		<0.10	<3-5	>0.9	>0.9	<0.1	1-10	
		0.093	3.39	0.9	0.909	0.035	4.517	
Result	Path	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
	NIC2→ JSAT	1.155	1.21 7	1.25 2	1.436	1.641	1.673	1.747

After the data confirmed that the H2 model had good fit, the regression results of the model were further analysed. The regression results for the hypothesis NIC2→JSAT are reported in Table 4.9. The lines connecting the numbers corresponding to Lower 5% (1.252) and Upper 5% (1.641), Lower 2.5% (1.217) and Upper 2.5% (1.673), and Lower 0.5% (1.155) and Upper 0.5% (1.747) do not cross zero, indicating the hypothesis is supported. The coefficient of 1.436 indicates a positive effect, i.e., NIC2 positively influences JSAT, thus supporting H2.

4.3.3 Test results for H3: NIC2 negatively influences STRES

Mplus8.3 was also used for fitting and regression of H3. The model fit indices for NIC2 and STRES are summarized in Table 4.10. Firstly, examining the fit indices, the RMSEA value was 0.089, below the acceptable standard of 0.10 and within an acceptable range. The χ^2 /df value was 3.14, within the qualified range of less than 3-5, indicating relatively good fit. The CFI value was 0.934, almost meeting the qualifying standard of above 0.9, representing a good model fit. The TLI value was 0.918, above the 0.9 standard, showing a high model fit. The SRMR value was 0.060, below the qualifying standard of 0.1, indicating good model fit. The VIF value was 3.44, within the acceptable range of 1-10, showing moderate collinearity among model variables. Overall, the fit indices for Hypothesis H3 suggest that the model fits well and is within an acceptable range.

Table 4.10 Fitness and regression coefficient results of NIC2 and STRES

Indicator	Value	RMSEA	χ^2 /df	CFI	TLI	SRMR	VIF	
		<0.10	<3-5	>0.9	>0.9	<0.1	1-10	
		0.089	3.14	0.934	0.918	0.060	3.44	
Result	Path	Lower .5%	Lower er	Lower er	Estimate	Upper 5%	Upper 2.5%	Upper .5%

NIC2→ STRES	-0.481	2.5%	5%	-0.349	-0.26	-0.241	-0.205
		-	-				
		0.45	0.43				
		1	4				

After confirming that the H3 model had good fit, further analysis of the model regression results was conducted. The regression results for the hypothesis NIC2→STRES are reported in Table 4.10. The lines connecting the numbers corresponding to Lower 5% (-0.434) and Upper 5% (-0.26), Lower 2.5% (-0.451) and Upper 2.5% (-0.241), and Lower 0.5% (-0.481) and Upper 0.5% (-0.205) do not cross zero, indicating the hypothesis is supported. The coefficient of -0.349 indicates a negative effect, i.e., NIC2 negatively influences STRES, thus supporting Hypothesis H3.

4.3.4 Test results for H4: STRES negatively influences JSAT

Mplus8.3 was also used to fit and regress H4. The model fit indices for STRES and JSAT are summarized in Table 4.11. Firstly, examining the fit indices, the RMSEA value was 0.087, below the acceptable standard of 0.10 and within an acceptable range. The χ^2/df value was 4.054, within the qualified range of less than 3-5, indicating relatively good fit. The CFI value was 0.966, almost meeting the qualifying standard of above 0.9, representing a good model fit. The TLI value was 0.946, above the 0.9 standard, showing a high model fit. The SRMR value was 0.084, below the qualifying standard of 0.1, indicating good model fit. The VIF value was 3.15, within the acceptable range of 1-10, showing moderate collinearity among model variables. Overall, the fit indices for H4 suggest that the model fits well and is within an acceptable range.

Table 4.11 Fitness and regression coefficient results of STRES and JSAT

Indicator	Value	RMSEA	χ^2/df	CFI	TLI	SRMR	VIF
		<0.10	<3-5	>0.9	>0.9	<0.1	1-10
		0.087	4.054	0.966	0.946	0.084	3.15
Result	Path	Lower	Lower	Lower	Estimate	Upper	Upper
		.5%	2.5%	5%		5%	2.5%
	STRES→ JSAT	-0.671	-0.647	-0.632	-0.555	-0.47	-0.45
							-0.421

After confirming that the H4 model had good fit, further analysis of the model regression results was conducted. The regression results for the hypothesis STRES→JSAT are reported in Table 4.11. The lines connecting the numbers corresponding to Lower 5% (-0.632) and Upper 5% (-0.47), Lower 2.5% (-0.647) and Upper 2.5% (-0.45), and Lower 0.5% (-0.671) and Upper 0.5% (-0.421) do not cross zero, indicating the hypothesis is supported. The coefficient of -0.555 indicates a negative effect, i.e., STRES negatively influences JSAT, thus

supporting H4.

4.3.5 Test results for H5: NOI negatively influences STRES

Mplus8.3 was also used to fit and regress H5. The model fit indices for NOI and STRES are summarized in Table 4.12. Firstly, examining the fit indices, the RMSEA value was 0.094, below the acceptable standard of 0.10 and within an acceptable range. The χ^2/df value was 3.43, within the qualified range of less than 3-5, indicating relatively good fit. The CFI value was 0.992, almost meeting the qualifying standard of above 0.9, representing a good model fit. The TLI value was 0.974, above the 0.9 standard, showing a high model fit. The SRMR value was 0.080, below the qualifying standard of 0.1, indicating good model fit. The VIF value was 3.96, within the acceptable range of 1-10, showing moderate collinearity among model variables. Overall, the fit indices for H5 suggest that the model fits well and is within an acceptable range.

Table 4.12 Fitness and regression coefficient results of NOI and STRES

Indicator	Value	RMSEA	χ^2/df	CFI	TLI	SRMR	VIF	
		<0.10	<3-5	>0.9	>0.9	<0.1	1-10	
		0.094	3.43	0.992	0.974	0.080	3.96	
Result	Path	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
	NOI→STRES	-0.404	-0.38	-0.367	-0.297	-0.229	-0.217	-0.192

After confirming that the H5 model had good fit, further analysis of the model regression results was conducted. The regression results for the hypothesis NOI→STRES are reported in Table 4.12. The lines connecting the numbers corresponding to Lower 5% (-0.367) and Upper 5% (-0.229), Lower 2.5% (-0.38) and Upper 2.5% (-0.217), and Lower 0.5% (-0.404) and Upper 0.5% (-0.192) do not cross zero, indicating the hypothesis is supported. The coefficient of -0.297 indicates a negative effect, i.e., NOI negatively influences STRES, thus supporting H5.

4.3.6 Test results for H6: NOI positively influences RES

Mplus8.3 was used for fitting and regression of H6. The model fit indices for STRES and JSAT are summarized in Table 4.13. Firstly, examining the fit indices, the RMSEA value was 0.095, below the acceptable standard of 0.10 and within an acceptable range. The χ^2/df value

was 3.48, within the qualified range of less than 3-5, indicating relatively good fit. The CFI value was 0.958, almost meeting the qualifying standard of above 0.9, representing a good model fit. The TLI value was 0.938, above the 0.9 standard, showing a high model fit. The SRMR value was 0.033, below the qualifying standard of 0.1, indicating good model fit. The VIF value was 4.15, within the acceptable range of 1-10, showing moderate collinearity among model variables. Overall, the fit indices for Hypothesis H6 suggest that the model fits well and is within an acceptable range.

Table 4.13 Fitness and regression coefficient results of NOI and RES

Indicator	Value	RMSEA	χ^2/df	CFI	TLI	SRMR	VIF	
		<0.10	<3-5	>0.9	>0.9	<0.1	1-10	
		0.095	3.48	0.958	0.938	0.033	4.15	
Result	Path	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
	NOI→RES	0.511	0.53	0.543	0.607	0.667	0.679	0.702

After confirming that the H6 model had good fit, further analysis of the model regression results was conducted. The regression results for the hypothesis STRES→JSAT are reported in Table 4.3: The lines connecting the numbers corresponding to Lower 5% (0.543) and Upper 5% (0.667), Lower 2.5% (0.53) and Upper 2.5% (0.679), and Lower 0.5% (0.511) and Upper 0.5% (0.702) do not cross zero, indicating the hypothesis is supported. The coefficient of 0.607 indicates a positive effect, i.e., STRES positively influences JSAT, thus supporting H6.

4.3.7 Test results for H7: STRES negatively influences RES

Mplus8.3 was used for fitting and regression of H7. The model fit indices for STRES and RES are summarized in Table 4.14. Firstly, examining the fit indices, the RMSEA value was 0.094, below the acceptable standard of 0.10 and within an acceptable range. The χ^2/df value was 4.59, within the qualified range of less than 3-5, indicating relatively good fit. The CFI value was 0.968, almost meeting the qualifying standard of above 0.9, representing a good model fit. The TLI value was 0.948, above the 0.9 standard, showing a high model fit. The SRMR value was 0.080, below the qualifying standard of 0.1, indicating good model fit. The VIF value was 3.51, within the acceptable range of 1-10, showing moderate collinearity among model variables. Overall, the fit indices for H7 suggest that the model fits well and is within an acceptable range.

Table 4.14 Fitness and regression coefficient results of STRES and RES

Indicator	Value	RMSEA	χ^2/df	CFI	TLI	SRMR	VIF
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		<0.10 0.094	<3-5 4.59	>0.9 0.96 8	>0.9 0.948	<0.1 0.080	1-10 3.51	
Result	Path	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
	STRES → RES	-0.442	- 0.40 1	- 0.38 3	-0.28	-0.181	-0.161	-0.123

After confirming that the H7 model had good fit, further analysis of the model regression results was conducted. The regression results for the hypothesis STRES→RES are reported in Table 2. The lines connecting the numbers corresponding to Lower 5% (-0.383) and Upper 5% (-0.181), Lower 2.5% (-0.401) and Upper 2.5% (-0.161), and Lower 0.5% (-0.442) and Upper 0.5% (-0.123) do not cross zero, indicating the hypothesis is supported. The coefficient of -0.28 indicates a negative effect, i.e., STRES negatively influences RES, thus supporting H7.

4.3.8 Test results for H8: JSAT negatively influences TOI

Mplus8.3 was used for fitting and regression of H8. The model fit indices for JSAT and TOI are summarized in Table 4.15. Firstly, examining the fit indices, the RMSEA value was 0.092, below the acceptable standard of 0.10 and within an acceptable range. The χ^2/df value was 4.25, within the qualified range of less than 3-5, indicating relatively good fit. The CFI value was 0.920, almost meeting the qualifying standard of above 0.9, representing a good model fit. The TLI value was 0.910, above the 0.9 standard, showing a high model fit. The SRMR value was 0.052, below the qualifying standard of 0.1, indicating good model fit. The VIF value was 4.11, within the acceptable range of 1-10, showing moderate collinearity among model variables. Overall, the fit indices for Hypothesis H8 suggest that the model fits well and is within an acceptable range.

Table 4.15 Fitness and regression coefficient results of JSAT and TOI

		<0.10 0.092	<3-5 4.25	>0.9 0.92 0	>0.9 0.910	<0.1 0.052	1-10 4.11	
Result	Path	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
	JSAT→ TOI	-0.758	- 0.74 5	- 0.73 9	-0.703	-0.662	-0.655	-0.639

After confirming that the H8 model had good fit, further analysis of the model regression results was conducted. The regression results for the hypothesis JSAT→TOI are reported in

Table 4.15. The lines connecting the numbers corresponding to Lower 5% (-0.739) and Upper 5% (-0.662), Lower 2.5% (-0.745) and Upper 2.5% (-0.655), and Lower 0.5% (-0.758) and Upper 0.5% (-0.639) do not cross zero, indicating the hypothesis is supported. The coefficient of -0.703 indicates a negative effect, i.e., JSAT negatively influences TOI, thus supporting H8.

4.3.9 Test results for H9: STRES positively influences TOI

Mplus8.3 was used for fitting and regression of H9. The model fit indices for STRES and TOI are summarized in Table 4.16. Firstly, examining the fit indices, the RMSEA value was 0.087, below the acceptable standard of 0.10 and within an acceptable range. The χ^2/df value was 3.39, within the qualified range of less than 3-5, indicating relatively good fit. The CFI value was 0.943, almost meeting the qualifying standard of above 0.9, representing a good model fit. The TLI value was 0.924, above the 0.9 standard, showing a high model fit. The SRMR value was 0.084, below the qualifying standard of 0.1, indicating good model fit. The VIF value was 5.22, within the acceptable range of 1-10, showing moderate collinearity among model variables. Overall, the fit indices for H9 suggest that the model fits well and is within an acceptable range.

Table 4.16 Fitness and regression coefficient results of STRES and TOI

Indicator	Value	RMSEA	χ^2/df	CFI	TLI	SRMR	VIF	
		<0.10	<3-5	>0.9	>0.9	<0.1	1-10	
		0.087	3.39	0.94	0.924	0.084	5.22	
			3					
Result	Path	Lower .5%	Low er 2.5%	Low er 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
	STRES →TOI	0.234	0.26 3	0.28	0.369	0.447	0.462	0.492

After confirming that the H9 model had good fit, further analysis of the model regression results was conducted. The regression results for the hypothesis STRES→TOI are reported in Table 4.16. The lines connecting the numbers corresponding to Lower 5% (0.28) and Upper 5% (0.447), Lower 2.5% (0.263) and Upper 2.5% (0.462), and Lower 0.5% (0.234) and Upper 0.5% (0.492) do not cross zero, indicating the hypothesis is supported. The coefficient of 0.369 indicates a positive effect, i.e., STRES positively influences TOI, thus supporting H9.

4.3.10 Test results for H10: RES negatively influences TOI

Mplus8.3 was used for fitting and regression of H10. The model fit indices for RES and TOI are summarized in Table 4.17. Firstly, examining the fit indices, the RMSEA value was 0.090, below the acceptable standard of 0.10 and within an acceptable range. The χ^2/df value was

3.87, within the qualified range of less than 3-5, indicating relatively good fit. The CFI value was 0.928, almost meeting the qualifying standard of above 0.9, representing a good model fit. The TLI value was 0.901, above the 0.9 standard, showing a high model fit. The SRMR value was 0.062, below the qualifying standard of 0.1, indicating good model fit. The VIF value was 6.22, within the acceptable range of 1-10, showing moderate collinearity among model variables. Overall, the fit indices for H10 suggest that the model fits well and is within an acceptable range.

Table 4.17 Fitness and regression coefficient results of RES and TOI

Indicator	Value	RMSEA	χ^2/df	CFI	TLI	SRMR	VIF	
		<0.10	<3-5	>0.9	>0.9	<0.1	1-10	
		0.090	3.87	0.928	0.901	0.062	6.22	
Result	Path	Lower .5%	Lower 2.5%	Lower 5%	Estimate	Upper 5%	Upper 2.5%	Upper .5%
	RES→TOI	-0.56	-0.539	-0.53	-0.475	-0.416	-0.404	-0.38

After confirming that the H10 model had good fit, further analysis of the model regression results was conducted. The regression results for the hypothesis RES→TOI are reported in Table 2. The lines connecting the numbers corresponding to Lower 5% (-0.53) and Upper 5% (-0.416), Lower 2.5% (-0.539) and Upper 2.5% (-0.404), and Lower 0.5% (-0.56) and Upper 0.5% (-0.38) do not cross zero, indicating the hypothesis is supported. The coefficient of -0.475 indicates a negative effect, i.e., RES negatively influences TOI, thus supporting H10.

4.4 Summary of multiple regression analysis

Summarizing the results of the hypotheses tests as shown in Table 4.18, it is evident that all hypotheses are valid. The findings reveal the following relationships. These results provide a comprehensive understanding of the various factors and their interrelations within the studied model.

Table 4.18 Summary of hypotheses testing

	Fit Results	Interval Crossing Zero	Hypothesis Test Result	Relationship coefficient
H1: NIC2 positively influences NOI	Meet Criteria	No	Supported	0.442
H2: NIC2 positively influences JSAT	Meet Criteria	No	Supported	1.436
H3: NIC2 negatively influences	Meet	No	Supported	-0.349

STRES	Criteria				
H4: STRES negatively influences JSAT	Meet	No	Supported	-0.555	
H5: NOI negatively influences STRES	Meet	No	Supported	-0.297	
H6: NOI positively influences RES	Meet	No	Supported	0.607	
H7: STRES negatively influences RES	Meet	No	Supported	-0.28	
H8: JSAT negatively influences TOI	Meet	No	Supported	-0.703	
H9: STRES positively influences TOI	Meet	No	Supported	0.369	
H10: RES negatively influences TOI	Meet	No	Supported	-0.475	
	Criteria				

4.5 SEM results

After completing the individual testing of each hypothesis, further Structural Equation Modelling (SEM) analysis was conducted. Utilizing the Mplus software as per the structural model diagram (Figure 3.1), the results were compiled as shown in Table 4.19 and Figure 4.1.

Table 4.19 Fitness and regression coefficient results of RES and TOI

Indicator	Value	RMSEA	χ^2/df	CFI	TLI	SRMR
		<0.10	<3-5	>0.9	>0.9	<0.1
		0.090	1.67	0.909	0.906	0.099

Upon examining the various fit indices, it can be observed that RMSEA equals 0.090 which is less than 0.1, conforming to the Structural Equation Modelling (SEM) standards; χ^2/df equals 1.67 which is less than 3, also meets SEM standards; CFI equals 0.909 which is greater than 0.9, aligns with SEM standards; TLI equals 0.906 which is greater than 0.9, adheres to SEM standards; SRMR equals 0.099 which is less than 0.1, fits within SEM standards. The fit indices in Table 4.19 indicate that the model meets the standards and has high credibility. Further examining the model results in Figure 4.1, it can be observed that the hypothesized path relationships are all valid, with values in parentheses all being less than 0.05.

Specifically, the standardized coefficients and P value of each path is illustrated in following Table 4.20.

Table 4.20 SEM path coefficients

Path	Standardized Coefficients	P Value
NIC2→NOI	0.452	0.026
NIC2→JSAT	0.353	0.029
NIC2→STRES	-0.42	0.028
STRES→JSAT	-0.635	0.035
NOI→STRES	-0.271	0.048
NOI→RES	0.632	0.04
STRES→RES	0.073	0.046
JSAT→TOI	-0.671	0.03
STRES→TOI	0.011	0.046
RES→TOI	-0.112	0.045

The P-value for NIC2→NOI equals 0.026 which is less than 0.05, indicating a significant correlation, with a standard coefficient equals 0.452 which is greater than 0, demonstrating that NIC2 positively influences NOI. In the SEM, hypothesis H1 is validated. The P-value for NIC2→JSAT equals 0.029, signifying a significant correlation, with a standard coefficient equals 0.353 which is greater than 0, proving that NIC2 positively influences JSAT in the SEM, thus validating hypothesis H2. The P-value for NIC2→STRES equals 0.028, indicating a significant correlation, with a standard coefficient equals -0.42 which is less than 0, demonstrating that NIC2 negatively influences JSAT in the SEM, confirming hypothesis H3. The P-value for STRES→JSAT equals 0.035, showing a significant correlation, with a standard coefficient equals -0.635 which is less than 0, proving that STRES negatively affects JSAT in the SEM, thus hypothesis H4 is established. The P-value for NOI→STRES equals 0.048, signifying a significant correlation, with a standard coefficient equals -0.271 which is less than 0, indicating that NOI negatively affects JSAT in the SEM, validating hypothesis H5. The P-value for NOI→RES equals 0.04, indicating a significant correlation, with a standard

coefficient equals 0.632 which is greater than 0, showing that NOI positively influences JSAT in the SEM, hence hypothesis H6 is proven. The P-value for STRES→RES equals 0.046, indicating a significant correlation, with a standard coefficient equals 0.073 which is greater than 0, proving that STRES positively affects JSAT in the SEM, thus confirming hypothesis H7. The P-value for JSAT→TOI equals 0.03, showing a significant correlation, with a standard coefficient equals -0.671 which is less than 0, indicating that JSAT negatively influences TOI in the SEM, thereby establishing hypothesis H8. The P-value for STRES→TOI equals 0.046, indicating a significant correlation, with a standard coefficient equals 0.011 which is greater than 0, demonstrating that STRES positively affects JSAT in the SEM, thus validating hypothesis H9. The P-value for RES→TOI equals 0.045, indicating a significant correlation, with a standard coefficient equals -0.112 which is less than 0, proving that RES negatively influences JSAT in the SEM, thus hypothesis H10 is substantiated. This indicates that the path hypotheses are substantiated, and the results are consistent with the individual hypothesis testing outcomes detailed earlier in section 4.3.

Chapter 5: Results Discussion and Managerial Recommendations

Building upon the research hypotheses, data collection, data analysis, and the results of hypotheses testing in this study, an extended discourse is articulated in this chapter. Corresponding managerial recommendations are also furnished.

5.1 Results discussion

5.1.1 Result discussion of H1: Nurse Intellectual Capital and Innovative Capabilities (NIC2) positively influences Nurse Occupational Identity (NOI)

The study provides empirical support for Hypothesis 1 (H1): NIC2 positively influences NOI. This finding aligns with the perspectives of various studies (Sullivan, 2012; Waltz et al., 2020; Z. Xu, 2014). Generally, the greater the acceptance of intellectual capital and innovation capabilities, the stronger the sense of professional identity. Enhancing knowledge capital and innovation capabilities is crucial for nurses. Intellectual capital encompasses not only knowledge and skills but also the judgment, problem-solving abilities, and innovative thinking of nurses in their practical work. When nurses possess a rich intellectual capital, they can execute nursing tasks more efficiently and accurately, thereby enhancing the quality of their work and increasing patient satisfaction. The ability to innovate empowers nurses to adapt to the ever-changing medical environment and propose novel work methods and nursing strategies, thus delivering higher quality care to patients. Consequently, as nurses bolster their intellectual capital and innovation capabilities, their job satisfaction also rises because they perceive their work as more valuable and fulfilling. This, in turn, reduces their intentions to leave their positions.

5.1.2 Result discussion of H2: NIC2 positively influences Job Satisfaction (JSAT)

The study provides empirical support for Hypothesis 2 (H2): NIC2 positively influences JSAT. This finding aligns with the perspectives of many studies (Jarden & Jarden et al., 2023; Kirchner et al., 2020; Sullivan, 2012). Increased intellectual capital and innovation capabilities are linked to higher levels of job satisfaction. Job satisfaction serves as a critical indicator of nurses' work performance and the quality of their work environment. When

nurses experience satisfaction with their work, they are more likely to maintain a positive attitude, foster positive relationships with colleagues and patients, thus enhancing overall work efficiency. Nurses who exhibit higher satisfaction levels have propensity to actively engage in teamwork, sharing their knowledge and experiences, thereby contributing to the development of the entire team. Moreover, heightened job satisfaction can bolster nurses' professional identity and loyalty, resulting in reduced staff turnover rates. Consequently, as nurses' intellectual capital and innovation capabilities (NIC2) increase, their job satisfaction (JSAT) correspondingly improves.

5.1.3 Result discussion of H3: NIC2 negatively influences Job Stress (STRES)

The study provides empirical support for Hypothesis 3 (H3): NIC2 negatively influences STRES. This aligns with previous studies (García Izquierdo et al., 2018; Yao et al., 2018). Typically, elevated levels of intellectual capital and innovation capabilities are correlated with reduced job stress. Job stress profoundly affects nurses' work efficacy and their physical and mental well-being. Factors like prolonged hours, high-intensity tasks, handling emergencies, and interactions with patients contribute to nurses' stress. Nonetheless, intellectual capital and innovation capabilities are crucial in managing and mitigating stress. Nurses with a broad spectrum of knowledge and skills are often more adept at addressing emergencies and complex challenges, which can alleviate stressful scenarios. Innovative approaches enable nurses to discover more effective coping strategies, diminishing the influence of work stress on their performance. Hence, as nurses' intellectual capital and innovation abilities (NIC2) enhance, their job stress (STRES) may correspondingly lessen.

5.1.4 Result discussion of H4: STRES negatively influences JSAT

The study provides empirical support for Hypothesis 4 (H4): STRES negatively influences JSAT. This is in line with the findings of previous studies (García Izquierdo et al., 2018; Jarden, Jarden, Weiland, Taylor, & Brockenshire et al., 2021). Generally, higher levels of job stress result in lower job satisfaction. There exists a significant interrelation between job stress and job satisfaction. On one hand, job stress can precipitate a reduction in nurses' job satisfaction, as excessive pressures may lead to emotional exhaustion and job burnout, diminishing nurses' enthusiasm and motivation for their work. Conversely, elevated job satisfaction can enable nurses to better manage and mitigate stress, as their positive demeanour and emotional engagement in their work facilitate stress relief and maintenance of

composure. Therefore, an increase in job stress (STRES) is likely to lead to a corresponding decrease in nurses' job satisfaction (JSAT).

5.1.5 Result discussion of H5: Nurse Occupational Identity (NOI) negatively influences STRES

The study provides empirical support for Hypothesis 5 (H5): STRES negatively influences JSAT. This concurrence is reflected in the previous studies (Bu et al., 2016; S. C. Liu, 2020; Modaresnezhad et al., 2021). Nurses with a less pronounced professional identity often encounter elevated levels of work stress. Professional identity embodies the sense of belonging and pride nurses hold in their profession. A stronger identification with their professional role typically results in nurses adhering more closely to ethical standards and diligently maintaining their professional image. This identity enhances focus on their work and increases job satisfaction. As professional identity intensifies, nurses may value their profession more and strive to provide superior patient care. Furthermore, an augmented professional identity can bolster nurses' confidence and self-esteem, leading to reduced work stress. Consequently, as professional identity (NOI) strengthens, work stress (STRES) among nurses is likely to diminish correspondingly.

5.1.6 Result discussion of H6: NOI positively influences Mental Resiliency (RES)

The study provides empirical support for Hypothesis 6 (H6): NOI positively impacts RES. This is in accord with previous studies (Aburn et al., 2016; Daou et al., 2019; Linnenluecke, 2017). Nurses with a more pronounced professional identity tend to possess higher levels of psychological resilience. Professional identity encompasses an individual's sense of belonging and pride in their chosen profession. Evidence suggests that nurses with a stronger professional identity have propensity to adhere to ethical standards and conscientiously maintain their professional image. This sense of identity may prompt nurses to be more engaged in their work and derive increased satisfaction from it. When nurses exhibit a robust identification with their profession, they are likely to be more amenable to embracing work responsibilities and confronting workplace challenges, thereby demonstrating enhanced psychological resilience. Consequently, bolstering professional identity (NOI) can reinforce nurses' psychological resilience (RES).

5.1.7 Result discussion of H7: STRES negatively influences RES

The study provides empirical support for Hypothesis 7 (H7): STRES negatively impacts RES. This finding is congruent with previous research (Aburn et al., 2016; Daou et al., 2019; Linnenluecke, 2017). Nurses experiencing lower job stress typically demonstrate higher levels of psychological resilience. Job stress can adversely affect psychological resilience. Factors such as prolonged and intense work demands, handling emergencies, and interactions with patients all contribute to the stress experienced by nurses. With increased job stress, nurses may encounter feelings of exhaustion and anxiety, which can erode their psychological resilience. Nurses with diminished psychological resilience may find it more challenging to cope with workplace stressors, leading to an elevated risk of turnover. Consequently, a rise in job stress (STRES) is likely to result in a reduction in psychological resilience (RES).

5.1.8 Result discussion of H8: JSAT negatively influences Turnover Intention (TOI)

The study provides empirical support for Hypothesis 8 (H8): JSAT negatively influences TOI. This concurs with previous findings (Aljohani, 2016; Fasanya & Dada, 2016; Jarden, Jarden, Weiland, Taylor, & Bujalka et al., 2021). Nurses who experience high levels of job satisfaction are more likely to demonstrate organizational loyalty and a propensity to remain longer in their positions. In contrast, diminished job satisfaction may lead nurses to a loss of confidence and a weakened sense of belonging to the organization, thereby amplifying their intent to leave. Consequently, an enhancement in job satisfaction (JSAT) is likely to reduce turnover intentions (TOI).

5.1.9 Result discussion of H9: STRES positively influences TOI

The study validates Hypothesis 9 (H9): STRES positively influences TOI. This finding is in line with previous studies (García Izquierdo et al., 2018; Yao et al., 2018). Elevated levels of job stress correlate with increased turnover intentions. Extended periods of intense work can induce feelings of exhaustion and heightened stress among nurses, potentially diminishing their organizational commitment and job satisfaction, thereby escalating their turnover intentions. Thus, an augmentation in job stress (STRES) is likely to result in an elevation of turnover intentions (TOI).

5.1.10 Result discussion of H10: RES negatively influences TOI

This study provides empirical support for Hypothesis 10 (H10): RES exerts a negative

influence on TOI. This corroboration aligns with previous research (Daou et al., 2019; Gensimore et al., 2020; Mubarik et al., 2022). Nurses possessing elevated levels of psychological resilience exhibit reduced turnover intentions. Psychological resilience is defined as an individual's capacity for adaptation and recuperation in the face of stress, obstacles, or adversity. Nurses with heightened psychological resilience are more adept at managing workplace challenges and stress, which potentially increases their propensity to remain with the organization. In contrast, nurses with diminished psychological resilience might be more susceptible to occupational stress and contemplate departure from their roles. Consequently, fostering psychological resilience (RES) could lead to a decrease in turnover intentions (TOI).

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Chapter 6: Research Conclusions and Prospects

6.1 Research conclusions

This research adopts questionnaire surveys and qualitative research methodologies to explore the turnover intentions of contracted nurses in five public hospitals in Shenzhen. In accordance with the research objectives, this research synthesizes six principal constructs related to nurses' turnover intentions, identified through a comprehensive literature review, and elucidates each construct thoroughly. The thesis then amalgamates theoretical frameworks and literature to establish the research methodology, formulate hypotheses and models, and accordingly, devise a survey instrument. Subsequent to this, the thesis executes a questionnaire survey and undertakes quantitative analysis of the gathered data. During this analysis, the research initially conducts descriptive statistics of the sample, evaluates the reliability and validity of the data, tests each research hypothesis, and applies structural equation modelling for additional validation. Following the affirmation of the hypotheses and the alignment results of the structural equation model, the research elaborates on these findings and proffers research recommendations. The research culminates with a synthesis of the entire research and delineates future research directions.

The thesis fulfils its envisaged research objectives.

A primary objective of this thesis is to identify and elucidate the factors and mechanisms impacting the turnover of contracted nurses in five public hospitals in Shenzhen, thereby augmenting the extant research on nurse turnover. Through theoretical and literature scrutiny, the research posits ten hypotheses concerning the turnover intentions of contracted nurses in these facilities, formulates a structural equation model, and subsequently validates these hypotheses and the model through survey data. The empirical results indicate that all hypotheses are substantiated, and the structural equation model exhibits robust congruence, affirming the hypotheses. Hence, the thesis accomplishes this research objective.

The second objective is to propose strategies for mitigating the turnover intentions of contracted nurses in these hospitals, predicated on the findings of the research hypotheses and structural equation model analysis. This, in turn, aims to preserve nursing talent and foster the development of these institutions. Chapter Six drawing on the analysis of research findings,

presents strategic recommendations encompassing five dimensions to efficaciously diminish nurses' turnover intentions. Consequently, the thesis achieves this research objectives.

The third objective is to offer insights for analogous public hospitals in nurse management, assisting them in implementing more effective management strategies to reduce nurse turnover intentions. Although the study is centred on contracted nurses, in five public hospitals in Shenzhen, its insights are broadly representative, given the similarity in work stress, psychology, and turnover intentions among nurses across similar public hospitals.

According to the results presented in the previous chapter, there is empirical support for the hypotheses. Thus, the study provides empirical support for Hypothesis 1, demonstrating that NIC2 significantly impacts NOI, in line with prior research (Sullivan, 2012; Waltz et al., 2020). It emphasizes that nurses' intellectual capital and innovation capabilities, encompassing knowledge, skills, problem-solving, and innovative thinking, directly enhance work quality and patient satisfaction. This enhancement in capabilities leads to increased job satisfaction and reduced turnover intentions among nurses, as they find their work more meaningful and fulfilling.

The study provides empirical support for Hypothesis 2, showing that enhanced intellectual capital and innovation capabilities in nurses (NIC2) positively affect their job satisfaction (JSAT), echoing findings from several studies (Jarden & Jarden et al., 2023; Kirchner et al., 2020; Sullivan, 2012). This increased job satisfaction not only improves nurses' work performance and environment quality but also leads to greater team engagement and reduced staff turnover.

The study provides empirical support for Hypothesis 3, indicating that increased intellectual capital and innovation capabilities (NIC2) in nurses negatively impact their job stress (STRES), in line with earlier research (García Izquierdo et al., 2018; Yao et al., 2018). Enhanced knowledge and skills, along with innovative approaches, enable nurses to effectively manage challenging work situations, thus reducing job stress and its adverse effects on performance and well-being.

The study provides empirical support for Hypothesis 4, showing that higher job stress (STRES) negatively impacts nurses' job satisfaction (JSAT), consistent with previous research (García Izquierdo et al., 2018; Jarden, Jarden, Weiland, Taylor, & Brockenshire et al., 2021). This relationship is characterized by stress diminishing satisfaction through emotional exhaustion and burnout, while increased satisfaction aids in stress management and emotional resilience.

The study provides empirical support for Hypothesis 5, revealing that a stronger nurse

occupational identity (NOI) significantly reduces work stress (STRES), aligning with earlier research (Bu et al., 2016; Modaresnezhad et al., 2021). A pronounced professional identity in nurses fosters a sense of belonging and pride, enhancing job focus and satisfaction, thereby effectively diminishing work stress.

The study provides empirical support for Hypothesis 6, indicating that a well-defined nurse occupational identity (NOI) positively influences psychological resilience (RES), consistent with existing literature (Aburn et al., 2016; Daou et al., 2019; Linnenluecke, 2017). Nurses with a strong professional identity exhibit greater psychological resilience, as this identity fosters work engagement, ethical adherence, and a readiness to tackle workplace challenges.

The study provides empirical support for Hypothesis 7, showing that increased job stress (STRES) negatively affects nurses' psychological resilience (RES), aligning with existing research findings (Aburn et al., 2016; Daou et al., 2019; Linnenluecke, 2017). Elevated stress, driven by factors like intense work demands and patient interactions, can lead to exhaustion and anxiety, thereby reducing nurses' ability to effectively cope with workplace stressors.

The study provides empirical support for Hypothesis 8, establishing that higher job satisfaction (JSAT) among nurses leads to a decrease in their turnover intentions (TOI), which is consistent with prior research (Aljohani, 2016; Fasanya & Dada, 2016; Jarden, Jarden, Weiland, Taylor, & Brockenshire et al., 2021). Enhanced job satisfaction strengthens organizational loyalty and reduces the likelihood of nurses leaving their positions, whereas lower satisfaction increases their intent to leave.

The study provides empirical support for Hypothesis 9, demonstrating that increased job stress (STRES) positively correlates with higher turnover intentions (TOI) among nurses, aligning with previous research (García Izquierdo et al., 2018; Yao et al., 2018). Prolonged intense work leading to exhaustion and reduced job satisfaction amplifies nurses' intentions to leave their positions.

The study provides empirical support for Hypothesis 10, indicating that higher psychological resilience (RES) in nurses is associated with lower turnover intentions (TOI), in agreement with existing studies (Daou et al., 2019; Gensimore et al., 2020; Mubarik et al., 2022). Nurses with greater resilience are better equipped to handle workplace challenges and stress, thus less likely to consider leaving their roles.

In this study, the turnover intentions of contracted nurses are influenced by factors like Intellectual Capital and Innovative Capabilities, Job Satisfaction, and Occupational Identity. Hospital administrators can focus on these areas for improvement. Contract conditions,

including the three-yearly contracts, lower salaries, and excessive night shifts, contribute to high turnover rates.

A strategy to address this issue is converting contracted nurses into non-contract staff. The study suggests that unfair pay and lack of professional development opportunities lead to turnover, as these conditions hinder the nurses' ability to innovate and build intellectual capital. Considering the distinct working conditions of contracted and non-contracted nurses, it is imperative to study them separately for effective management strategies.

Moreover, the resilience of nursing staff, a critical concern in recent times, especially with new infections and public health challenges, has become a pivotal element in hospital management. Enhancing nurses' resilience is key not only for their well-being but also for maintaining high-quality medical services and ensuring patient safety. Therefore, strategies to improve nurses' resilience are essential for strengthening the overall resilience of hospitals.

6.2 Research contributions

6.2.1 Theoretical contributions

This research conducts a thorough investigation into the determinants of nurses' turnover intentions, affirming the significant correlation between these elements and turnover intentions. Identifying pivotal variables such as nurses' professional identity, job satisfaction, psychological resilience, knowledge capital, innovation capabilities, and work stress not only augments the existing theoretical frameworks of turnover intentions but also unravels the interconnections among these variables. This elucidation contributes to an enhanced comprehension of the intricacies of nurses' turnover intentions and provides theoretical substantiation.

Firstly, the incorporation of variables like nurses' professional identity aids in the theoretical development within the realm of nursing management. The integration of these variables renders the model more holistic and precisely delineates the dynamics underlying nurses' turnover intentions. Furthermore, the study underscores the significance of knowledge capital and innovation capacities in nursing, introducing novel dimensions to nursing management theory.

Secondly, this study delineates the theoretical interplay among these variables. For instance, job satisfaction and psychological resilience exert a positive influence on professional identity, which subsequently impacts turnover intentions. Grasping these

interactions facilitates a more nuanced understanding of the complexities of nurses' turnover intentions and lays the foundation for crafting efficacious management strategies.

In addition, this study also examines the phenomenon from the point of organizational support, probing its effect on nurses' job satisfaction and professional identity. This approach yields fresh perspectives and methodologies for deciphering nurses' turnover intentions. By concentrating on organizational dynamics, the study offers deeper insights into nurses' needs and aspirations within their professional contexts, thereby enabling targeted initiatives to bolster their job satisfaction and professional identity, which in turn, mitigates turnover intentions.

6.2.2 Practical contributions

The outcomes of this research bear significant implications for the domain of nursing management. In the context of escalating societal demand for nursing services, the challenge of retaining nursing talent has emerged as a critical concern. It is imperative for policymakers to acquire an in-depth understanding of the elements influencing nurses' turnover intentions and the dynamics among these factors. This understanding is crucial for devising effective strategies that enhance the work environment and conditions for nurses, thereby fostering the attraction and retention of skilled nursing professionals.

By augmenting the work environment and remuneration of nurses, policymakers can provide superior career advancement prospects, fortify the organizational ethos, and enhance remuneration and benefits. Such initiatives are instrumental in elevating job satisfaction and professional identity among nurses, which in turn, diminishes their propensity to leave the profession. Consequently, this leads to an enhancement in the overall quality of nursing services within society.

Moreover, the insights derived from this study can guide policymakers in formulating policies that encourage the development of nurses' knowledge capital and innovative skills. Through the provision of training and developmental programs, policymakers can aid nurses in honing their expertise, thereby elevating the standard of nursing services and contributing more significantly to societal advancement.

6.3 Managerial recommendations

Based on the results of the empirical research, it is evident that NIC2, NOI, JSAT, and RES can directly or indirectly negatively influence TOI, while STRES has a positive impact on

TOI. This implies that by enhancing NIC2, NOI, JSAT, and RES, the propensity of nurses to leave their jobs can be reduced, and by decreasing STRES, this propensity can also be diminished. Based on these findings, we propose the following recommendations from these five aspects to reduce the turnover intention of nurses.

6.3.1 Enhancing nurses' knowledge capital and innovation abilities

Empirical analysis has supported that enhancing nurses' knowledge capital and innovation abilities can effectively reduce their turnover intentions. To achieve this goal, the following recommendations are proposed:

1. Establish a Comprehensive Continuing Education Mechanism:

Hospitals and medical institutions should create a robust system for ongoing learning and training opportunities for nurses, ensuring that they remain current with the latest nursing knowledge and skills. This not only enhances the quality and efficiency of nursing work but also stimulates nurses' innovative thinking.

2. Encourage Research and Practical Innovation:

Hospitals should allocate resources for research funds or innovation projects to incentivize nurses to engage in research activities and practical innovation. Participation in research projects enhances problem-solving abilities and integrates theoretical knowledge with practical experience, thereby advancing the nursing field.

3. Promote Knowledge Sharing and Exchange:

Establish a dedicated platform for knowledge sharing, encouraging nurses to exchange experiences and share innovative outcomes. This initiative helps foster a conducive learning environment, promoting cooperation and mutual growth among team members.

4. Develop Individualized Professional Development Plans:

Create personalized professional growth plans for each nurse, assisting them in defining their career goals and directions. Setting clear career objectives can ignite nurses' passion for learning and ambition.

5. Enhance Incentive Mechanisms:

Implement comprehensive incentive mechanisms to reward nurses who excel in accumulating knowledge capital and demonstrating innovation. This approach can stimulate their desire to learn and explore, ultimately driving the development of the entire nursing team.

In summary, by implementing a comprehensive continuing education system and

providing continuous learning and training opportunities, hospitals can ensure that nurses acquire up-to-date nursing knowledge and skills, thereby enhancing the quality and efficiency of nursing work. Encouraging participation in research and innovation, fostering a culture of knowledge sharing, and developing personalized professional growth plans can stimulate innovation and problem-solving skills among nurses. Additionally, effective incentive mechanisms can motivate nurses, leading to overall team development and progress in the nursing field.

6.3.2 Enhancing nurses' professional identity

Empirical analysis has established that enhancing nurses' professional identity can be instrumental in reducing their turnover intentions. To foster the improvement of nurses' professional identity, the following recommendations are proposed:

1. Strengthen Career Development Planning Guidance:

Provide nurses with comprehensive guidance and counselling services for career development planning, enabling them to gain a better understanding of their career paths, directions, and opportunities. Clear career planning empowers nurses to more effectively recognize their professional value and set meaningful goals.

2. Increase Societal Recognition of Nurses:

Employ media campaigns and engage in social activities aimed at enhancing societal recognition and respect for the nursing profession. This concerted effort serves to boost nurses' pride and sense of belonging, thereby igniting their enthusiasm for their work.

3. Offer Professional Training and Certification Opportunities:

Hospitals should proactively offer opportunities for professional training and certification, enabling nurses to continuously enhance their professional skills and knowledge. Acquiring professional certifications helps nurses perceive their work as valuable and meaningful.

4. Empower Nurses and Involve Them in Decision-Making:

Grant nurses a significant degree of autonomy and the opportunity to actively participate in decision-making processes. This involvement allows nurses to feel valued and respected in their roles, subsequently elevating their job enthusiasm and satisfaction.

5. Strengthen Professional Support and Care:

Hospital leadership should prioritize the provision of robust professional support and care for nurses, taking into account their needs and challenges in the workplace, and offering appropriate assistance and support. This care and support can assist nurses in effectively

managing workplace pressures and contribute to improved job satisfaction.

In summary, the implementation of these recommendations can significantly contribute to the enhancement of nurses' professional identity. By offering career development guidance, increasing societal recognition, providing training and certification opportunities, empowering nurses, and strengthening professional support and care, hospitals can create an environment where nurses feel valued and respected, leading to increased job satisfaction and a reduction in turnover intentions.

6.3.3 Enhancing nurses' job satisfaction

Empirical analysis has indicated that enhancing nurses' job satisfaction plays a vital role in reducing their turnover intentions. To improve nurses' job satisfaction, the following recommendations are proposed:

1. Optimize the Work Environment and Facilities:

Ensure the provision of a safe and comfortable work environment equipped with state-of-the-art facilities to create favourable conditions for nurses. This includes upgrading medical equipment, establishing rest areas, and streamlining work processes.

2. Enhance Compensation and Benefits:

Rationalize salary systems, offer comprehensive insurance benefits, and thoughtfully plan holidays to enhance nurses' financial security and overall job satisfaction. Improved compensation is instrumental in both attracting and retaining skilled nursing professionals.

3. Prioritize Personal Growth and Development:

Provide ample career development opportunities and actively encourage continuous learning and professional growth. This can involve offering training courses, facilitating participation in professional seminars, and promoting internal career advancement. Emphasizing personal growth enables nurses to visualize their potential career development within their roles.

4. Foster Team Building and Effective Communication:

Invest in team-building activities and bolster internal communication mechanisms to promote cooperation and knowledge exchange among nurses. A positive team atmosphere not only enhances work efficiency but also contributes to increased job satisfaction and team cohesion.

5. Address Mental Health and Well-being:

Implement mental health education programs and provide counselling services to assist

nurses in coping with work-related pressures and emotional distress. Support for mental health ensures that nurses maintain a positive mindset and remain in optimal working condition.

In summary, the implementation of these recommendations can lead to a significant improvement in nurses' job satisfaction. By optimizing the work environment, revising compensation and benefits, emphasizing personal growth and development, fostering effective team dynamics, and addressing mental health and well-being, healthcare institutions can create a more supportive and satisfying workplace for nurses. This, in turn, can reduce turnover intentions and contribute to a more stable and motivated nursing workforce.

6.3.4 Enhancing nurses' psychological resilience

Empirical analysis has confirmed that enhancing nurses' psychological resilience is a key factor in reducing their turnover intentions. To promote and strengthen nurses' psychological resilience, the following recommendations are proposed:

1. Offer Mental Health Education:

Implement regular mental health education activities for nurses, focusing on the significance of psychological resilience and stress coping techniques. These educational initiatives should prioritize the development of self-regulation skills and fostering a positive mindset.

2. Cultivate a Supportive Work Environment:

Foster a work environment that encourages mutual assistance and support among colleagues. Promote a positive team atmosphere where nurses feel accepted and understood. Such an environment can significantly enhance nurses' psychological resilience, better equipping them to handle work-related challenges and stress.

3. Encourage Self-Care and Emotional Regulation Skills:

Encourage nurses to acquire self-care techniques and emotional regulation strategies through training and guidance. Proficiency in self-regulation skills can enable nurses to effectively manage stress and adversity, maintaining psychological equilibrium and sustaining work motivation.

4. Implement Regular Mental Health Assessments and Counselling:

Conduct periodic mental health assessments for nurses and provide timely counselling and support to those in need. Early identification and intervention in psychological issues through health assessments can prevent the exacerbation of problems. Timely counselling and

support can facilitate mindset adjustments and reinforce psychological resilience.

In summary, the implementation of these recommendations aims to enhance nurses' psychological resilience by providing mental health education, creating a supportive work environment, promoting self-care and emotional regulation skills, and conducting regular mental health assessments and counselling. These measures can contribute significantly to nurses' well-being, enabling them to better cope with work-related challenges and ultimately reducing turnover intentions within the nursing workforce.

6.3.5 Reducing nurses' work stress

Empirical analysis has underscored the importance of reducing nurses' work-related stress to mitigate turnover intentions. To address this issue and enhance the well-being of nurses, the following recommendations are proposed:

- 1. Optimize Work Processes and Scheduling Systems:**

Arrange work tasks and hours in a manner that prevents excessive fatigue and prolonged periods of continuous work. Streamlining work processes and scheduling can help alleviate the workload and stress experienced by nurses.

- 2. Implement Human-Centered Management:**

Hospitals should adopt a human-centred management approach, with a focus on nurses' stress levels and providing necessary support. This may include offering psychological counselling services, creating dedicated stress relief spaces, and organizing regular relaxation activities to help nurses manage and reduce work-related stress.

- 3. Establish Effective Communication Mechanisms:**

Promote effective internal communication within the hospital to ensure a smooth flow of information. A robust communication system can assist nurses in resolving issues promptly, reducing stress caused by communication barriers.

- 4. Balance Workload and Rest Time Appropriately:**

Ensure that nurses' workload and rest time are well-balanced to prevent extended periods of continuous work. Adequate rest and recovery intervals can contribute to stress reduction and improved work efficiency.

- 5. Provide Training in Stress Management:**

Offer training courses for nurses on effective stress management techniques and methods. Such training equips nurses with the skills needed to cope with and alleviate work-related stress, thereby enhancing their self-regulation abilities.

6. Strengthen Social Support and Understanding:

Enhance society's understanding and support for the nursing profession, alleviating excessive expectations and pressure on nurses. Promote public awareness and education to improve societal recognition and respect for nursing work, fostering a more supportive work environment for nurses.

In summary, the reduction of nurses' work-related stress requires a multifaceted approach, including optimizing work processes, implementing human-centred management, establishing effective communication mechanisms, balancing workload, and rest periods, providing stress management training, and strengthening societal support. By implementing these comprehensive strategies, it is possible to effectively reduce work-related stress among nurses, ultimately leading to increased job satisfaction and improved mental health within the nursing workforce.

6.4 Research limitations

While providing pivotal insights into the determinants of nurses' turnover intentions, this research, acknowledges certain limitations:

(1) Sample Constraint

The research was confined to contracted nurses in municipal hospitals within Shenzhen, which might induce regional biases in the outcomes.

Differences in management frameworks, cultural contexts, and the pressures faced by nurses in diverse regions imply that the research's concentration on a singular locale may not entirely capture the nationwide nuances of nurses' turnover intentions.

(2) Imperative for Enhanced Theoretical Framework and Model Validation

Though the research empirically substantiated the significant linkages between key determinants and turnover intentions, these connections could be subject to influences from additional, unidentified elements. There might be overlooked variables and interrelations within the research's theoretical framework that necessitate further theoretical investigation and empirical scrutiny for refinement and corroboration.

These limitations underscore the necessity for an expanded research ambit and more profound theoretical elaboration to thoroughly comprehend and address the elements affecting nurses' turnover intentions.

6.5 Future research prospects

First, expanding Sample Scope and Diversity is an important direction by the following measures: a). Broadening sample range. Future studies should aim to include a wider range of hospitals, encompassing different regions, levels, and types to gain a more comprehensive understanding of the factors influencing nurses' turnover intentions. b). enhancing sample diversity. It is crucial to incorporate nurses of varied ages, genders, and years of experience to fully grasp the multifaceted nature of nurses' turnover intentions. c). cross-national or cross-cultural studies. Considering cross-national or cross-cultural research is essential to compare nurses' turnover intentions across different cultural backgrounds.

Furthermore, strengthening the refinement and validation of theoretical frameworks and models constitutes a central task for future research. Future studies can validate and enhance the theoretical model presented in this research through a greater number of empirical studies and cross-cultural comparative research. Simultaneously, attention can be directed towards interdisciplinary research with other fields to gain a deeper understanding of the complexity and universality of nurses' turnover intentions. By continuously refining and validating theoretical frameworks and models, a more scientifically grounded and reliable theoretical guidance can be provided for nursing management practices. Additionally, future research may consider the development of new theoretical models or frameworks to elucidate the mechanisms of nurses' turnover intentions and their impact effects, offering more effective theoretical guidance and practical recommendations for nursing management practices.

Bibliography

- Abd-Elseyed, A., & Karri, J. (2020). Utility of substandard face mask options for health care workers during the COVID-19 pandemic. *Anesthesia and Analgesia*, 10(1213), 4841.
- Aburn, G., Gott, M., & Hoare, K. (2016). What is resilience? An integrative review of the empirical literature. *Journal of Advanced Nursing*, 72(5), 980-1000.
- Abu-Tineh, A. M., Romanowski, M. H., Chaaban, Y., Alkhatib, H., Ghamrawi, N., & Alshaboul, Y. M. (2023). Career Advancement, Job Satisfaction, Career Retention, and Other Related Dimensions for Sustainability: A Perception Study of Qatari Public School Teachers. *Sustainability*, 15(5), 4370.
- Aiken, L. H., Sloane, D. M., Bruyneel, L., Van den Heede, K., Griffiths, P., Busse, R., Diomidous, M., Kinnunen, J., Kózka, M., & Lesaffre, E. (2014). Nurse staffing and education and hospital mortality in nine European countries: A retrospective observational study. *The Lancet*, 383(9931), 1824-1830.
- Al Naqbia, E., Alshuridehb, M., AlHamadc, A., & Al, B. (2020). The impact of innovation on firm performance: A systematic review. *International Journal of Innovation, Creativity and Change*, 14(5), 31-58.
- Aljohani, O. (2016). A comprehensive review of the major studies and theoretical models of student retention in higher education. *Higher Education Studies*, 6(2), 1-18.
- Al-Qadi, M. M. (2021). Workplace violence in nursing: A concept analysis. *Journal of Occupational Health*, 63(1), e12226.
- Alshawush, K. A., Hallett, N., & Bradbury-Jones, C. (2020). Impact of transition programmes for students and new graduate nurses on workplace bullying, violence, stress and resilience: A scoping review protocol. *Bmj Open*, 10(10), e38893.
- AMA. (2021). *AMA statement on U.S. nursing shortage*.
- Amabile, T. M., Hill, K. G., Hennessey, B. A., & Tighe, E. M. (1994). The work preference inventory: Assessing intrinsic and extrinsic motivational orientations. *Journal of Personality and Social Psychology*, 66(5), 950.
- An, Y., Davey, H., Eggleton, I. R., & Wang, Z. (2015). Intellectual capital disclosure and the information gap: Evidence from China. *Advances in Accounting*, 31(2), 179-187.
- Andersen, L. P. S., Biering, K., & Conway, P. M. (2023). Negative acts as risk factor for work-related violence and threats from clients towards employees: A follow-up study. *International Journal of Environmental Research and Public Health*, 20(4), 3358.
- Anshasi, H. A., Fawaz, M., Alhalalmeh, S., Ahmad, W. Q., & Tassi, A. (2020). Nurses' stressors and their quality of life: A study on nurses caring for older patients. *Nursing Open*, 7(6), 1698-1706.
- Arslan Yurumezoglu, H., & Kocaman, G. (2016). Predictors of nurses' intentions to leave the organisation and the profession in Turkey. *Journal of Nursing Management*, 24(2), 235-243.
- Babapour, A., Gahassab-Mozaffari, N., & Fathnezhad-Kazemi, A. (2022). Nurses' job stress and its impact on quality of life and caring behaviors: A cross-sectional study. *BMC nursing*, 21(1), 1-10.
- Badu, E., O'Brien, A. P., Mitchell, R., Rubin, M., James, C., McNeil, K., Nguyen, K., & Giles, M. (2020). Workplace stress and resilience in the Australian nursing workforce: A comprehensive integrative review. *International Journal of Mental Health Nursing*, 29(1), 5-34.

- Bakker, A. B., & Demerouti, E. (2007). The job demands - resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309-328.
- Bambi, S., Foà, C., De Felippis, C., Lucchini, A., Guazzini, A., & Rasero, L. (2018). Workplace incivility, lateral violence and bullying among nurses. A review about their prevalence and related factors. *Acta Bio Medica: Atenei Parmensis*, 89(Suppl 6), 51.
- Bao, L., Zhang, Y. Q., Zhang, Y., Wang, H. C., & Qian, Y. (2013). 护士创新行为的现状及其影响因素分析 [Analysis of the current situation of nurses' innovative behavior and its influencing factors]. *Journal of Shanghai Jiao Tong University: Medical Edition*, 33(5), 593-596.
- Belete, A. K. (2018). Turnover intention influencing factors of employees: An empirical work review. *Journal of Entrepreneurship & Organization Management*, 7(3), 1-7.
- Bender, E., Schaper, N., & Schürmann, M. (2019). Factors driving employee's intention to stay: Combining retention management and research in voluntary turnover. *Zeitschrift für Arbeits-und Organisationspsychologie*, 64(3), 238-250.
- Bernard, N. (2021). The relationships between resilience, job satisfaction, and anticipated turnover in CNOs. *Nurse Leader*, 19(1), 101-107.
- Bing, Z., Lei, Z., & Na, Z. (2013). Research on the relationship between job burnout and turnover intention among clinical nurses born in the 80s. *Journal of Nursing Science*, 28(8), 16-18.
- Bluedorn, A. C. (1982). A unified model of turnover from organizations. *Human Relations*, 35(2), 135-153.
- Bontis, N. (1998). Intellectual capital: An exploratory study that develops measures and models. *Management Decision*, 36(2), 63-76.
- Bontis, N. (2001). Assessing knowledge assets: A review of the models used to measure intellectual capital. *International Journal of Management Reviews*, 3(1), 41-60.
- Bontis, N., Crossan, M. M., & Hulland, J. (2002). Managing an organizational learning system by aligning stocks and flows. *Journal of Management Studies*, 39(4), 437-469.
- Bontis, N., Keow, W. C. C., & Richardson, S. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of Intellectual Capital*, 1(1), 85-100.
- Bontis, N., & Fitz Enz, J. (2002). Intellectual capital ROI: A causal map of human capital antecedents and consequents. *Journal of Intellectual Capital*, 3(3), 223-247.
- Borg, J., Borg, N., Scott-Young, C. M., & Naderpajouh, N. (2021). The work readiness - career resilience linkage: implications for project talent management. *International Journal of Managing Projects in Business*, 14(4), 917-935.
- Brooking, A., Board, P., & Jones, S. (1998). The predictive potential of intellectual capital. *International Journal of Technology Management*, 16(1-3), 115-125.
- Bu, M., Qian, Y. X., & Huang, Z. L. (2016). 广州市三甲医院手术室护士职业认同水平及影响因素调查 [Investigation on occupational identity level and influencing factors of operating room nurses in Guangzhou Third Class A Hospital]. *Guangdong Medical Journal*, 37(12), 1866-1869.
- Cao, X., & Chen, L. (2021). Relationships between resilience, empathy, compassion fatigue, work engagement and turnover intention in haemodialysis nurses: A cross - sectional study. *Journal of Nursing Management*, 29(5), 1054-1063.
- Chang, H. Y., Chu, T. L., Liao, Y. N., Chang, Y. T., & Teng, C. I. (2019). How do career barriers and supports impact nurse professional commitment and professional turnover intention? *Journal of Nursing Management*, 27(2), 347-356.
- Chang, H. Y., Huang, T. L., Wong, A. M. K., & Ho, L. H. (2019). How career facilitators and barriers influence nurses' professional turnover intention. *Journal of Advanced Nursing*, 75(12), 3577-3587.

- Chang, Y. P., Lee, D. C., & Wang, H. H. (2018). Violence - prevention climate in the turnover intention of nurses experiencing workplace violence and work frustration. *Journal of Nursing Management*, 26(8), 961-971.
- Chen, H., Xu, Y., Xu, X., Yu, K., & Hu, M. (2020). 三级医院临床护士工作场所心理暴力与应对方式相关性研究 [A study on the correlation between psychological violence and coping style in the workplace of clinical nurses in grade-A tertiary hospitals]. *Chinese Journal of General Practice*, (10), 1770-1773.
- Chen, J. (2012). 护士职业认同感, 工作压力和满意度及离职意愿调查 [Survey on nurses' professional identity, job stress and satisfaction and intention to leave]. *China Nursing Management*, 12(6), 43-46.
- Chen, J., Zhu, Z., & Xie, H. Y. (2004). Measuring intellectual capital: A new model and empirical study. *Journal of Intellectual Capital*, 5(1), 195-212.
- Chen, M. E., Wu, W. H., & Yu, L. X. (2016). 中国排名前三的医院新护士离职意愿影响因素及管理策略 [Influencing factors and management strategies of new nurses' turnover intention in top three Chinese hospitals]. *China Health Service Management*, (33), 735-738.
- Chen, M. X., Xian, Y., Huang, Y. H., Zhang, X. P., Hu, M. G., Guo, S. S., Chen, L. K., & Liang, L. W. (2022). Fine-scale population spatialization data of China in 2018 based on real location-based big data. *Scientific Data*, 9(1), 624.
- Chiha, Y. A., & Link, C. R. (2003). The shortage of registered nurses and some new estimates of the effects of wages on registered nurses labor supply: A look at the past and a preview of the 21st century. *Health Policy*, 64(3), 349-375.
- Cline, S. (2015). Nurse leader resilience. *Nursing Administration Quarterly*, 39(2), 117-122.
- Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor - Davidson resilience scale (CD - RISC). *Depression and Anxiety*, 18(2), 76-82.
- Connor, L., Dean, J., McNett, M., Tydings, D. M., Shrout, A., Gorsuch, P. F., Hole, A., Moore, L., Brown, R., & Melnyk, B. M. (2023). Evidence - based practice improves patient outcomes and healthcare system return on investment: Findings from a scoping review. *Worldviews on Evidence - Based Nursing*, 20(1), 6-15.
- Cooper, A. L., Brown, J. A., Rees, C. S., & Leslie, G. D. (2020). Nurse resilience: A concept analysis. *International Journal of Mental Health Nursing*, 29(4), 553-575.
- Copeland, D., & Henry, M. (2018). The relationship between workplace violence, perceptions of safety, and professional quality of life among emergency department staff members in a level 1 trauma centre. *International Emergency Nursing*, 39, 26-32.
- Covell, C. L., & Sidani, S. (2013a). Nursing intellectual capital theory: Implications for research and practice. *Online Journal of Issues in Nursing*, 18(2), 2.
- Covell, C. L., & Sidani, S. (2013b). Nursing intellectual capital theory: Operationalization and empirical validation of concepts. *Journal of Advanced Nursing*, 69(8), 1785-1796.
- Cui, Z., & Yi, C. (2013). 护士人格特质与工作倦怠、离职倾向的关系 [Relationship among the personality traits of nurses, job burnout, and turnover intention]. *Chinese Preventive Medicine*, 14(7), 546-547.
- Dahlman, C. J., & Aubert, J. (2001). *China and the knowledge economy: Seizing the 21st century*. World Bank Publications.
- Danesh, M. K., Garosi, E., & Golmohamadpour, H. (2021). The COVID-19 Pandemic and nursing challenges: A review of the early literature. *Work-a Journal of Prevention Assessment & Rehabilitation*, 69(1), 23-36.
- Danish, R. Q., & Usman, A. (2010). Impact of reward and recognition on job satisfaction and motivation: An empirical study from Pakistan. *International Journal of Business and Management*, 5(2), 159.

- Daou, A., Joseph, J., Yousif, D. S., Fathallah, R., & Reyes, G. (2019). Intellectual capital and resilience in torn societies. *Journal of Intellectual Capital*, 20(4), 598-618.
- Day-Duro, E., Lubitsh, G., & Smith, G. (2020). Understanding and investing in healthcare innovation and collaboration. *Journal of Health Organization and Management*, 34(4), 469-487.
- De Jonge, J., Dollard, M. F., Dormann, C., Le Blanc, P. M., & Houtman, I. L. (2000). The demand-control model: Specific demands, specific control, and well-defined groups. *International Journal of Stress Management*, 7(4), 269-287.
- De Vries, H., & Shields, M. (2006). Towards a theory of entrepreneurial resilience: A case study analysis of New Zealand SME owner operators. *New Zealand Journal of Applied Business Research*, 5(1), 33-43.
- Delgado, C., Upton, D., Ranse, K., Furness, T., & Foster, K. (2017). Nurses' resilience and the emotional labour of nursing work: An integrative review of empirical literature. *International Journal of Nursing Studies*, 70, 71-88.
- Demerouti, E., & Bakker, A. B. (2011). The job demands-resources model: Challenges for future research. *SA Journal of Industrial Psychology*, 37(2), 1-9.
- Díaz-Sáenz, H. R. (2011). Transformational leadership. *The SAGE Handbook of Leadership*, 5(1), 299-310.
- Ding, R. (2019). 我国企业ICM研究综述 [A Summary of research on enterprise ICM in China]. *Jiangsu Commercial Forum*, (7), 96-100.
- Dolors Celma-Benaiges, M., Martínez-García, E., & Raya, J. (2016). An analysis of CSR in human resource management practices and its impact on employee job satisfaction in Catalonia, Spain. *European Accounting and Management Review*, 3(1), 45-71.
- Donaher, K., Russell, G., Scoble, K. B., & Chen, J. (2007). The human capital competencies inventory for developing nurse managers. *The Journal of Continuing Education in Nursing*, 38(6), 277-283.
- Duffield, C., Diers, D., O'Brien-Pallas, L., Aisbett, C., Roche, M., King, M., & Aisbett, K. (2011). Nursing staffing, nursing workload, the work environment and patient outcomes. *Applied Nursing Research*, 24(4), 244-255.
- Duh-Leong, C., Dreyer, B. P., Huang, T. T., Katzow, M., Gross, R. S., Fierman, A. H., Tomopoulos, S., Di Caprio, C., & Yin, H. S. (2021). Social capital as a positive social determinant of health: a narrative review. *Academic Pediatrics*, 21(4), 594-599.
- Edvinsson, L. (1997). Developing intellectual capital at Skandia. *Long Range Planning*, 30(3), 366-373.
- Edvinsson, L. (2002). *Corporate longitude: What you need to know to navigate the knowledge economy*. Financial Times Prentice Hall.
- Edvinsson, L., & Malone, M. S. (1997). *Intellectual capital: Realizing your company's true value by finding its hidden roots*. Harper Business.
- Edvinsson, L., & Sullivan, P. (1996). Developing a model for managing intellectual capital. *European Management Journal*, 14(4), 356-364.
- Edwards, J. R., Cable, D. M., Williamson, I. O., Lambert, L. S., & Shipp, A. J. (2006). The phenomenology of fit: linking the person and environment to the subjective experience of person-environment fit. *Journal of Applied Psychology*, 91(4), 802.
- Ellis, B., & Gates, J. (2005). Achieving magnet status. *Nursing Administration Quarterly*, 29(3), 241-244.
- Escartín, J. (2016). Insights into workplace bullying: Psychosocial drivers and effective interventions. *Psychology Research and Behavior Management*, 9, 157-169.
- Fagermoen, M. S. (1997). Professional identity: Values embedded in meaningful nursing practice. *Journal of Advanced Nursing*, 25(3), 434-441.
- Fasanya, B. K., & Dada, E. A. (2016). Workplace violence and safety issues in long-term

- medical care facilities: Nurses' perspectives. *Safety and Health at Work*, 7(2), 97-101.
- Flynn, W. J., Mathis, R. L., Jackson, J. H., & Langan, P. J. (2016). *Healthcare human resource management*. Thomson Learning.
- Force, M. V. (2005). The relationship between effective nurse managers and nursing retention. *The Journal of Nursing Administration*, 35(7), 336-341.
- Fournet, G. P., Distefano Jr, M. K., & Pryer, M. W. (1966). Job satisfaction: Issues and problems. *Personnel Psychology*, 19(2), 165-183.
- Friganović, A., Selič, P., & Ilić, B. (2019). Stress and burnout syndrome and their associations with coping and job satisfaction in critical care nurses: A literature review. *Psychiatria Danubina*, 31(suppl. 1), 21-31.
- Furnham, A., Eracleous, A., & Chamorro Premuzic, T. (2009). Personality, motivation and job satisfaction: Hertzberg meets the Big Five. *Journal of Managerial Psychology*, 24(8), 765-779.
- Galbraith, J. R. (1982). Designing the innovating organization. *Organizational Dynamics*, 10(3), 5-25.
- Gan, L., Zhang, H., Shang, W., Li, X., Ma, X., & Wu, Z. (2020). 护士流失率及其影响因素 [Nursing turnover rate and its influencing factors]. *Chinese Journal of Nursing*, 55(2), 198-203.
- García Izquierdo, M., Meseguer De Pedro, M., Ríos Risquez, M. I., & Sánchez, M. I. S. (2018). Resilience as a moderator of psychological health in situations of chronic stress (burnout) in a sample of hospital nurses. *Journal of Nursing Scholarship*, 50(2), 228-236.
- Gensimore, M. M., Maduro, R. S., Morgan, M. K., McGee, G. W., & Zimbro, K. S. (2020). The effect of nurse practice environment on retention and quality of care via burnout, work characteristics, and resilience: A moderated mediation model. *The Journal of Nursing Administration*, 50(10), 546-553.
- Gillespie, C. F., Phifer, J., Bradley, B., & Ressler, K. J. (2009). Risk and resilience: genetic and environmental influences on development of the stress response. *Depression and Anxiety*, 26(11), 984-992.
- Gogan, L., Rennung, F., Fistis, G., & Draghici, A. (2014). A proposed tool for managing intellectual capital in small and medium size enterprises. *Procedia Technology*, 16, 728-736.
- Gong, Y. (2020). 消毒供应科护士工作压力应对策略及原因分析 [Coping strategy and causal analysis of nurses' work stress in disinfection supply division]. *Cardiovascular Disease Electronic Journal of Integrated Traditional Chinese and Western Medicine*, 8(21), 16.
- Grafton, E., Gillespie, B., & Henderson, S. (2010). Resilience: The power within. *Oncology Nursing Forum*, 37(6), 698.
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10(1), 76-88.
- Gunawan, J., Aungsuroch, Y., & Fisher, M. L. 2019 *Competence -based human resource management in nursing: A literature review*. Paper presented at the Nursing Forum.
- Guo, Y. F., Cross, W., Plummer, V., Lam, L., Luo, Y. H., & Zhang, J. P. (2017). Exploring resilience in Chinese nurses: A cross - sectional study. *Journal of Nursing Management*, 25(3), 223-230.
- Guo, Y. F., Plummer, V., Lam, L., Wang, Y., Cross, W., & Zhang, J. P. (2019). The effects of resilience and turnover intention on nurses' burnout: Findings from a comparative cross - sectional study. *Journal of Clinical Nursing*, 28(3-4), 499-508.
- Hall, L. (2001). Burnout: Results of an empirical study of New Zealand nurses. *Contemporary Nurse: A Journal for the Australian Nursing Profession*, 11(1), 71-83.

- Halter, M., Boiko, O., Pelone, F., Beighton, C., Harris, R., Gale, J., Gourlay, S., & Drennan, V. (2017). The determinants and consequences of adult nursing staff turnover: A systematic review of systematic reviews. *Bmc Health Services Research*, 17(1), 1-20.
- Harris, A. (2016). *Nursing to achieve organizational performance: consider the role of nursing intellectual capital*. Paper presented at the Healthcare Management Forum.
- Harzer, C., & Ruch, W. (2015). The relationships of character strengths with coping, work-related stress, and job satisfaction. *Frontiers in Psychology*, 6, 165.
- Harzer, C., & Ruch, W. (2016). Your strengths are calling: Preliminary results of a web-based strengths intervention to increase calling. *Journal of Happiness Studies*, 17, 2237-2256.
- Hatam, N., Jalali, M. T., Askarian, M., & Kharazmi, E. (2016). Relationship between family-work and work-family conflict with organizational commitment and desertion intention among nurses and paramedical staff at hospitals. *International Journal of Community Based Nursing and Midwifery*, 4(2), 107.
- Heilala, C., Kalland, M., Lundkvist, M., Forsius, M., Vincze, L., & Santavirta, N. (2021). Work demands and work resources: Testing a model of factors predicting turnover intentions in early childhood education. *Early Childhood Education Journal*, 1-11.
- Hogg, M. A., Terry, D. J., & White, K. M. (1995). A tale of two theories: A critical comparison of identity theory with social identity theory. *Social Psychology Quarterly*, 58(4), 255-269.
- Hsu, C. P., Chiang, C. Y., Chang, C. W., Huang, H. C., & Chen, C. C. (2015). Enhancing the commitment of nurses to the organisation by means of trust and monetary reward. *Journal of Nursing Management*, 23(5), 567-576.
- Hu, Y. (2017). *Research on the relationship among organizational justice, working pressure and the tendency of resignation of the contract nurses in public hospitals* [Master's Thesis]. Wuhan University.
- Huang, J., Li, L. Z., Peng, D., Wu, L. J., & Jiang, D. J. (2008). 三级医院聘用制护士工作满意度与离职意愿的现状调查 [Investigation on the current situation of job satisfaction and turnover intention of nurses under employment system in tertiary hospitals]. *Chinese Nursing Journal*, 43(6), 527-530.
- Huang, R. (2008). *Research on medical high-level talents' acquisition, retaining, and development mechanism* [Doctoral dissertation]. Xiamen University.
- Hudgins, T. A. (2016). Resilience, job satisfaction and anticipated turnover in nurse leaders. *Journal of Nursing Management*, 24(1), E62-E69.
- Iqbal, N., Xu, J. F., Fareed, Z., Wan, G., & Ma, L. (2022). Financial leverage and corporate innovation in Chinese public-listed firms. *European Journal of Innovation Management*, 25(1), 299-323.
- Islam, R., & Ismail, A. Z. H. (2008). Employee motivation: A Malaysian perspective. *International Journal of Commerce and Management*, 18(4), 344-362.
- Jarden, R. J., Jarden, A. J., Weiland, T. J., Taylor, G., Brockenshire, N., Rutherford, M., Carbery, C., Moroney, K., Joshanloo, M., & Gerdtz, M. (2023). Nurses' well - being during the coronavirus (2019) pandemic: A longitudinal mixed - methods study. *Nursing Open*, 10(1), 24-35.
- Jarden, R. J., Jarden, A., Weiland, T. J., Taylor, G., Brockenshire, N., & Gerdtz, M. (2021). Registered Nurses' experiences of psychological well - being and ill - being in their first year of practice: A qualitative meta - synthesis. *Journal of Advanced Nursing*, 77(3), 1172-1187.
- Jarden, R. J., Jarden, A., Weiland, T. J., Taylor, G., Bujalka, H., Brockenshire, N., & Gerdtz, M. F. (2021). New graduate nurse wellbeing, work wellbeing and mental health: A quantitative systematic review. *International Journal of Nursing Studies*, 121, 103997.

- Jarden, R. J., Scott, S., Rickard, N., Long, K., Burke, S., Morrison, M., Mills, L., Barker, E., Sharma, K., & Twomey, B. (2023). Factors contributing to nurse resignation during COVID - 19: A qualitative descriptive study. *Journal of Advanced Nursing*,
- Jiang, H., Li, C., Gu, Y., & Lu, H. (2016). Nurse satisfaction and burnout in Shanghai neurology wards. *Rehabilitation Nursing Journal*, 41(2), 120-127.
- John, B., & Jeffrey, G. (1999). *Human resource management: Theory and practice*. Macmillan Press Ltd.
- Jun, J., Ojemeni, M. M., Kalamani, R., Tong, J., & Crecelius, M. L. (2021). Relationship between nurse burnout, patient and organizational outcomes: Systematic review. *International Journal of Nursing Studies*, 119, 103933.
- Jurczak, J. (2008). Intellectual capital measurement methods. *Economics and Organization of Enterprise*, 1(1), 37-45.
- Kawauchi, E., & Ohashi, K. (2011). Relationship among work engagement, job satisfaction and turnover intention of registered midwives and nurses working in public hospitals providing secondary medical care. *The Journal of the Japan Academy of Nursing Administration and Policies*, 15(1), 39-46.
- Kenny, P., Reeve, R., & Hall, J. (2016). Satisfaction with nursing education, job satisfaction, and work intentions of new graduate nurses. *Nurse Education Today*, 36, 230-235.
- Kester, K., & Wei, H. (2018). Building nurse resilience. *Nursing Management*, 49(6), 42-45.
- Kim, E. A., & Jang, K. S. (2011). Development of a measurement of intellectual capital for hospital nursing organizations. *Journal of Korean Academy of Nursing*, 41(1), 129-140.
- Kim, M. R., & Seomun, G. (2013). Relationships among burnout, job satisfaction, organizational commitment and turnover intention to resign in hospital nurses. *Korean Journal of Occupational Health Nursing*, 22(2), 93-101.
- Kim, S., Price, J. L., Mueller, C. W., & Watson, T. W. (1996). The determinants of career intent among physicians at a US Air Force hospital. *Human Relations*, 49(7), 947-976.
- Kirchner, J. E., Smith, J. L., Powell, B. J., Waltz, T. J., & Proctor, E. K. (2020). Getting a clinical innovation into practice: An introduction to implementation strategies. *Psychiatry Research*, 283, 112467.
- Klopper, H. C., Coetzee, S. K., Pretorius, R., & Bester, P. (2012). Practice environment, job satisfaction and burnout of critical care nurses in South Africa. *Journal of Nursing Management*, 20(5), 685-695.
- Kunzler, A. M., Chmitorz, A., Röthke, N., Staginnus, M., Schäfer, S. K., Stoffers-Winterling, J., & Lieb, K. (2022). Interventions to foster resilience in nursing staff: A systematic review and meta-analyses of pre-pandemic evidence. *International Journal of Nursing Studies*, 134, 104312.
- Labrague, L. J., McEnroe Petite, D. M., Gloe, D., Tsaras, K., Arteche, D. L., & Maldia, F. (2017). Organizational politics, nurses' stress, burnout levels, turnover intention and job satisfaction. *International Nursing Review*, 64(1), 109-116.
- Lambert, S. C., & Davidson, R. A. (2013). Applications of the business model in studies of enterprise success, innovation and classification: An analysis of empirical research from 1996 to 2010. *European Management Journal*, 31(6), 668-681.
- Lawler III, E. E., & Porter, L. W. (1967). Antecedent attitudes of effective managerial performance. *Organizational Behavior and Human Performance*, 2(2), 122-142.
- Lawler III, E. E., & Suttle, J. L. (1973). Expectancy theory and job behavior. *Organizational Behavior and Human Performance*, 9(3), 482-503.
- Lee, E., & Jang, I. (2020). Nurses' fatigue, job stress, organizational culture, and turnover intention: A culture - work - health model. *Western Journal of Nursing Research*, 42(2), 108-116.
- Lee, M., Holzemer, W. L., & Faucett, J. (2007). Psychometric evaluation of the Nursing

- Stress Scale (NSS) among Chinese nurses in Taiwan. *Journal of Nursing Measurement*, 15(2), 133-144.
- Li, A. Y. (2008). 护士工作满意度的研究进展 [Research progress on nurses' job satisfaction]. *Tianjin Nursing*, 16(2), 113-115.
- Li, S., Gao, L., Han, C., Gupta, B., Alhalabi, W., & Almakdi, S. (2023). Exploring the effect of digital transformation on firms' innovation performance. *Journal of Innovation & Knowledge*, 8(1), 100317.
- Liang, J., Chen, Q., Li, Y., Fan, X., Wang, Q., & Wang, J. (2021). 湖南省4237名护士焦虑、抑郁、失眠现状及影响因素 [Current situation and influencing factors of anxiety, depression and insomnia among 4237 nurses in Hunan Province]. *Journal of Central South University (Medical Edition)*, 46(8), 822-830.
- Lin, C. Y. (2014). *Intellectual capital explains a country's resilience to financial crisis: A resource-based view*. IGI Global.
- Lin, C. (2019). Modeling corporate citizenship and turnover intention: Social identity and expectancy theories. *Review of Managerial Science*, 13, 823-840.
- Lin, C., Tsai, Y., & Mahatma, F. (2017). Understanding turnover intention in cross-country business management. *Personnel Review*, 46(8), 1717-1737.
- Linnenluecke, M. K. (2017). Resilience in business and management research: A review of influential publications and a research agenda. *International Journal of Management Reviews*, 19(1), 4-30.
- Liu, C., Zhang, L., Ye, W., Zhu, J., Cao, J., Lu, X., & Li, F. (2012). Job satisfaction and intention to leave: A questionnaire survey of hospital nurses in Shanghai of China. *Journal of Clinical Nursing*, 21(1 - 2), 255-263.
- Liu, J., Zhu, Y., Li, M. M., & Fan, G. M. (2014). 儿科门诊护士工作家庭冲突对离职意愿的影响 [The effect of work-family conflict on turnover intention among nurses in paediatric outpatient department]. *Chinese Nursing Management*, 14(12), 1265-1268.
- Liu, S. C. (2020). *A study on the correlation between the satisfaction of inpatients with nursing services and the job satisfaction of responsible nurses: A case study of a top three hospital in Shanxi Province* [Doctoral dissertation]. Shanxi Medical University.
- Liu, W. H., Zhao, S. H., Shi, L., Zhang, Z., Li, L., Duan, X. J., Li, G. Q., Lou, F. G., & Jia, X. L. (2018). Workplace violence, job satisfaction, burnout, perceived organisational support and their effects on turnover intention among Chinese nurses in tertiary hospitals: A cross-sectional study. *Bmj Open*, 8(6), e19525.
- Liu, X., Hu, Y. L., Yang, H. J., Zhou, Y. J., Ma, N., & Gu, Y. R. (2021). 我国部分地区护士离职意愿现状及其影响因素分析 [Analysis of the current status of nurses' resignation intention and its influencing factors in some areas of my country]. *China Nursing Management*, 21(10), 1543-1548.
- Liu, X., Wang, S., Chang, G., Zhang, S., Xie, F., & Shi, Y. (2017). 新护士主动社会化行为测量量表的研制及其对离职意向的影响 [The development of a scale to measure the proactive socialization behaviour and its impact on turnover intention of new nurses]. *Chinese Journal of Practical Nursing*, 33(3), 216-219.
- Liu, X., & Yang, S. (2021). The influence of core technology capability of high-tech industry on sustainable competitive advantage. *Discrete Dynamics in Nature and Society*, 2021, 1-10.
- Locke, E. A. (1969). What is job satisfaction? *Organizational Behavior and Human Performance*, 4(4), 309-336.
- Lu, T. (2014). 创新实践正在重新定义房地产 [Innovative practices are redefining real estate]. *Property Market*, 26(18), 20.
- Luo, H., & He, Z. H. (2010). 466 名护士心理资本与职业倦怠及离职意愿的关系 [The

- relationships among psychological capital, job burnout, and turnover intention in 466 nurses]. *Chinese Journal of Nursing*, (10), 933-935.
- Luthans, K. W., & Sommer, S. M. (2005). The impact of high performance work on industry-level outcomes. *Journal of Managerial Issues*, 17(3), 327-345.
- Maimako, L. B., & Bambale, A. J. (2016). Human resource management practices and employee job satisfaction in Kano stateowned universities: A conceptual model. *Journal of Marketing & Management*, 7(2), 45-71.
- Maldonado-Guzmán, G., Garza-Reyes, J. A., Pinzón-Castro, S. Y., & Kumar, V. (2018). Innovation capabilities and performance: Are they truly linked in SMEs? *International Journal of Innovation Science*, 11(1), 48-62.
- Mallak, L. A. (1998). Measuring resilience in health care provider organizations. *Health Manpower Management*, 24(4), 148-152.
- March, J. G., & Simon, H. A. (1993). *Organizations*. John Wiley & Sons.
- Matta, F. K., Scott, B. A., Colquitt, J. A., Koopman, J., & Passantino, L. G. (2017). Is consistently unfair better than sporadically fair? An investigation of justice variability and stress. *Academy of Management Journal*, 60(2), 743-770.
- McCloskey, J. C., & McCain, B. E. (1987). Satisfaction, commitment and professionalism of newly employed nurses. *Image: The Journal of Nursing Scholarship*, 19(1), 20-24.
- Meng, L., Zhou, Y., & Cheng, R. (2010). 护士离职意愿与工作环境关系文献综述 [Review of literatures on the relationship between nurses' turnover intention and work environment]. *Journal of Nursing Science*, 25(12), 95-97.
- Mills, J., Woods, C., Harrison, H., Chamberlain-Salaun, J., & Spencer, B. (2017). Retention of early career registered nurses: the influence of self-concept, practice environment and resilience in the first five years post-graduation. *Journal of Research in Nursing*, 22(5), 372-385.
- Milne, P. (2007). Motivation, incentives and organisational culture. *Journal of Knowledge Management*, 11(6), 28-38.
- Mobley, W. H. (1977). Intermediate linkages in the relationship between job satisfaction and employee turnover. *Journal of Applied Psychology*, 62(2), 237.
- Modaresnezhad, M., Andrews, M. C., Mesmer Magnus, J., Viswesvaran, C., & Deshpande, S. (2021). Anxiety, job satisfaction, supervisor support and turnover intentions of mid-career nurses: A structural equation model analysis. *Journal of Nursing Management*, 29(5), 931-942.
- Mohammad Mosadeghrad, A. (2014). Occupational stress and its consequences: Implications for health policy and management. *Leadership in Health Services*, 27(3), 224-239.
- Moloney, W., Boxall, P., Parsons, M., & Cheung, G. (2018). Factors predicting registered nurses' intentions to leave their organization and profession: A job demands - resources framework. *Journal of Advanced Nursing*, 74(4), 864-875.
- Moorman, R. H., Niehoff, B. P., & Organ, D. W. (1993). Treating employees fairly and organizational citizenship behavior: Sorting the effects of job satisfaction, organizational commitment, and procedural justice. *Employee Responsibilities and Rights Journal*, 6, 209-225.
- Motlagh, F. G., Nobahar, M., & Raiesdana, N. (2020). The relationship of moral intelligence and social capital with job satisfaction among nurses working in the emergency department. *International Emergency Nursing*, 52, 100911.
- Mubarik, M. S., Bontis, N., Mubarik, M., & Mahmood, T. (2022). Intellectual capital and supply chain resilience. *Journal of Intellectual Capital*, 23(3), 713-738.
- Mueller, C. W., & McCloskey, J. C. (1990). Nurses' job satisfaction: A proposed measure. *Nursing Research*, 39(2), 113-116.
- Nancarrow, S., Bradbury, J., Pit, S. W., & Ariss, S. (2014). Intention to stay and intention to

- leave: Are they two sides of the same coin? A cross - sectional structural equation modelling study among health and social care workers. *Journal of Occupational Health*, 56(4), 292-300.
- Naseem, M. A., Lin, J., Ur Rehman, R., Ahmad, M. I., & Ali, R. (2019). Does capital structure mediate the link between CEO characteristics and firm performance? *Management Decision*, 58(1), 164-181.
- Nedjati, A., & Izbirak, G. (2013). Evaluating the intellectual capital by ANP method in a dairy company. *Procedia-Social and Behavioral Sciences*, 107, 136-144.
- Nelson, J. W. (2002). *A professional nursing care model and satisfaction of the staff nurse* [Doctoral dissertation]. University of Minnesota.
- Ngo-Henha, P. E. (2018). A review of existing turnover intention theories. *International Journal of Economics and Management Engineering*, 11(11), 2760-2767.
- Nuryaman, N. (2015). The influence of intellectual capital on the firm's value with the financial performance as intervening variable. *Procedia - Social and Behavioral Sciences*, 211, 292-298.
- Nwachukwu, B. U., McCormick, F., Provencher, M. T., Roche, M., & Rubash, H. E. (2015). A comprehensive analysis of Medicare trends in utilization and hospital economics for total knee and hip arthroplasty from 2005 to 2011. *The Journal of Arthroplasty*, 30(1), 15-18.
- O'Brien Pallas, L., Murphy, G. T., Shamian, J., Li, X., & Hayes, L. J. (2010). Impact and determinants of nurse turnover: A pan - Canadian study. *Journal of Nursing Management*, 18(8), 1073-1086.
- Öksüz, E., Demiralp, M., Mersin, S., Tüzer, H., Aksu, M., & Sarıkoc, G. (2019). Resilience in nurses in terms of perceived social support, job satisfaction and certain variables. *Journal of Nursing Management*, 27(2), 423-432.
- Olarewaju, O. M., & Msomi, T. S. (2021). Intellectual capital and financial performance of South African development community's general insurance companies. *Heliyon*, 7(4)
- Oman, K. S., Makic, M. B. F., Fink, R., Schraeder, N., Hulett, T., Keech, T., & Wald, H. (2012). Nurse-directed interventions to reduce catheter-associated urinary tract infections. *American Journal of Infection Control*, 40(6), 548-553.
- Organ, D. W., & Lingl, A. (1995). Personality, satisfaction, and organizational citizenship behavior. *Journal of Social Psychology*, 135(3), 339.
- Organ, D. W., & Near, J. P. (1985). Cognition vs affect in measures of job satisfaction. *International Journal of Psychology*, 20(2), 241-253.
- Pan, A. D., & Zhang, G. F. (2006). 护士工作压力源及相关因素调查 [Investigation on work stress sources and related factors of nurses]. *Chinese Journal of Misdiagnosis*, 6(22), 4501-4503.
- Park, B., & Ko, Y. (2020). Turnover rates and factors influencing turnover of Korean acute care hospital nurses: A retrospective study based on survival analysis. *Asian Nursing Research*, 14(5), 293-299.
- Patterson, B., Bayley, E. W., Burnell, K., & Rhoads, J. (2010). Orientation to emergency nursing: Perceptions of new graduate nurses. *Journal of Emergency Nursing*, 36(3), 203-211.
- Peng, W., Liu, Y., Huang, J. B., Jia, Y. L., Xu, J. L., & Liu, Y. (2019). 三级医院护士绩效评价指标的构建研究 [Construction of the performance evaluation index of nurses in tertiary hospitals]. *Modern Preventive Medicine*, 14(6), 122.
- Peterson, M., & Wilson, J. F. (2002). The culture-work-health model and work stress. *American Journal of Health Behavior*, 26(1), 16-24.
- Petty, R., & Guthrie, J. (2000). Intellectual capital literature review: Measurement, reporting

- and management. *Journal of Intellectual Capital*, 1(2), 155-176.
- Philippa, R., Ann, H., Jacqueline, M., & Nicola, A. (2021). Professional identity in nursing: A mixed method research study. *Nurse Education in Practice*, 52, 103039.
- Piko, B. F. (2006). Satisfaction with life, psychosocial health and materialism among Hungarian youth. *Journal of Health Psychology*, 11(6), 827-831.
- Pingo, J. C., Dixon, M. R., & Paliliunas, D. (2020). Intervention enhancing effects of acceptance and commitment training on performance feedback for direct support professional work performance, stress, and job satisfaction. *Behavior Analysis in Practice*, 13, 1-10.
- Pishgooie, A. H., Atashzadeh Shoorideh, F., Falcó Pegueroles, A., & Lotfi, Z. (2019). Correlation between nursing managers' leadership styles and nurses' job stress and anticipated turnover. *Journal of Nursing Management*, 27(3), 527-534.
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly*, 1(2), 107-142.
- Podsakoff, P. M., MacKenzie, S. B., & Bommer, W. H. (1996). Transformational leader behaviors and substitutes for leadership as determinants of employee satisfaction, commitment, trust, and organizational citizenship. *Journal of Management*, 22(2), 259-298.
- Porter, L. W., & Steers, R. M. (1973). Organizational, work, and personal factors in employee turnover and absenteeism. *Psychological Bulletin*, 80(2), 151.
- Price, J. L. (1989). The impact of turnover on the organization. *Work and Occupations*, 16(4), 461-473.
- Price, J. L. (2001). Reflections on the determinants of voluntary turnover. *International Journal of Manpower*, 22(7), 600-624.
- Qiang, X. (2018). *Employee turnover, intellectual capital and enterprise performance* [Doctoral dissertation]. Donghua University.
- Quratulain, S., & Al-Hawari, M. A. (2021). Interactive effects of supervisor support, diversity climate, and employee cynicism on work adjustment and performance. *International Journal of Hospitality Management*, 93, 102803.
- Rabinowitz, S., & Hall, D. T. (1977). Organizational research on job involvement. *Psychological Bulletin*, 84(2), 265.
- Rahman, W., & Nas, Z. (2013). Employee development and turnover intention: Theory validation. *European Journal of Training and Development*, 37(6), 564-579.
- RCN. (2015). *RCN London safe staffing report 2015*.
- Reineck, C., & Furino, A. (2005). Nursing career fulfillment: Statistics and statements from registered nurses. *Nursing Economics*, 23(1), 25-30.
- Reynolds, K. J., & Subasic, E. (2016). "We see things not as they are, but as we are": Social identity, self-categorization, and perception. *Psychological Inquiry*, 27(4), 348-351.
- Riahi Belkaoui, A. (2003). Intellectual capital and firm performance of US multinational firms: A study of the resource - based and stakeholder views. *Journal of Intellectual Capital*, 4(2), 215-226.
- Roche, M. A., Duffield, C. M., Homer, C., Buchan, J., & Dimitrelis, S. (2015). The rate and cost of nurse turnover in Australia. *Collegian*, 22(4), 353-358.
- Rondeau, K. V., Williams, E. S., & Wagar, T. H. (2009). Developing human capital: What is the impact on nurse turnover? *Journal of Nursing Management*, 17(6), 739-748.
- Rose, D., Evans, J., Laker, C., & Wykes, T. (2015). Life in acute mental health settings: Experiences and perceptions of service users and nurses. *Epidemiology and Psychiatric Sciences*, 24(1), 90-96.
- Rudman, A., Gustavsson, P., & Hultell, D. (2014). A prospective study of nurses' intentions to leave the profession during their first five years of practice in Sweden. *International*

- Journal of Nursing Studies*, 51(4), 612-624.
- Rushton, C. H., Batcheller, J., Schroeder, K., & Donohue, P. (2015). Burnout and resilience among nurses practicing in high-intensity settings. *American Journal of Critical Care*, 24(5), 412-420.
- Rutter, M. (1995). Psychosocial adversity: Risk, resilience & recovery. *Southern African Journal for Child & Adolescent Psychiatry & Allied Profession*, 7(2), 75-88.
- Rutter, M. (1999). Resilience concepts and findings: Implications for family therapy. *Journal of Family Therapy*, 21(2), 119-144.
- Rutter, M. (2012). Resilience as a dynamic concept. *Development and Psychopathology*, 24(2), 335-344.
- Sabanciogullari, S., & Dogan, S. (2015). Relationship between job satisfaction, professional identity and intention to leave the profession among nurses in Turkey. *Journal of Nursing Management*, 23(8), 1076-1085.
- Sabbath, E. L., Hurtado, D. A., Okechukwu, C. A., Tamers, S. L., Nelson, C., Kim, S. S., Wagner, G., & Sorenson, G. (2014). Occupational injury among hospital patient - care workers: what is the association with workplace verbal abuse? *American Journal of Industrial Medicine*, 57(2), 222-232.
- Santos-Rodrigues, H., Faria, J., Morais, C., & Cranfield, D. (2013, April 11). *Intellectual capital and innovation: A hospital case study*. The 5th European Conference on Intellectual Capital, Bilbao, Spain.
- Sapri, N. D., Ng, Y. T., Wu, V. X., & Klainin-Yobas, P. (2022). Effectiveness of educational interventions on evidence-based practice for nurses in clinical settings: A systematic review and meta-analysis. *Nurse Education Today*, 111, 105295.
- Schablon, A., Wendeler, D., Kozak, A., Nienhaus, A., & Steinke, S. (2018). Prevalence and consequences of aggression and violence towards nursing and care staff in Germany—A survey. *International Journal of Environmental Research and Public Health*, 15(6), 1274.
- Shang, J., You, L., Ma, C., Altares, D., Sloane, D. M., & Aiken, L. H. (2014). Nurse employment contracts in Chinese hospitals: Impact of inequitable benefit structures on nurse and patient satisfaction. *Human Resources for Health*, 12(1), 1-10.
- Shi, R., Liu, Y., & Zhang, Z. (2016). 广东省三级医院护士流动现状 [The turnover status of nurses in tertiary hospitals of Guangdong Province]. *Chinese Nursing Management*, (11), 1503-1506.
- Siu, O., Hui, C. H., Phillips, D. R., Lin, L., Wong, T., & Shi, K. (2009). A study of resiliency among Chinese health care workers: Capacity to cope with workplace stress. *Journal of Research in Personality*, 43(5), 770-776.
- Sokhanvar, M., Hasanpoor, E., Hajhashemi, S., & Kakemam, E. (2016). The relationship between organizational justice and turnover intention: A survey on hospital nurses. *Journal of Patient Safety & Quality Improvement*, 4(2), 358-362.
- Soltani, I., Hajatpour, S., Khorram, J., & Nejati, M. (2013). Investigating the effect of role conflict and role ambiguity on employees' job stress: Articulating the role of work-family conflict. *Management Science Letters*, 3(7), 1927-1936.
- Spector, P. E., & Jex, S. M. (1991). Relations of job characteristics from multiple data sources with employee affect, absence, turnover intentions, and health. *Journal of Applied Psychology*, 76(1), 46.
- Stets, J. E., & Burke, P. J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly*, 224-237.
- Stewart, T. A. (1991). *Brainpower: How intellectual capital is becoming America's most valuable asset*. IGI Global.
- Stewart, T. A. (2007). *The wealth of knowledge: Intellectual capital and the twenty-first century organization*. Currency.

- Stewart, T. A. (2010). *Intellectual capital: The new wealth of organization*. Currency.
- Su, H., Xu, P. R., Li, J. L., Bai, Q. S., Li, X. Y., & Pan, J. (2019). 公立医院非编制护士工作倦怠, 组织支持感与离职倾向的关系研究 [Study on the relationship between job burnout, perceived organizational support and turnover intention among non-staff nurses in public hospitals]. *Health Soft Sciences*, 33(2), 85-89.
- Subramaniam, M., & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal*, 48(3), 450-463.
- Sullivan, P. H. (2012). An intellectual property perspective on intellectual capital *Perspectives on Intellectual Capital* (137-151). Routledge.
- Sumedrea, S. (2013). Intellectual capital and firm performance: A dynamic relationship in crisis time. *Procedia Economics and Finance*, 6, 137-144.
- Sun, F. (2016). *Job stress and its relationship with quality of life and turnover intention of ICU nurses in general hospital*. Shandong University.
- Sveiby, K. E. (2001). A knowledge - based theory of the firm to guide in strategy formulation. *Journal of Intellectual Capital*, 2(4), 344-358.
- Swensen, S. J., & Shanafelt, T. (2017). An organizational framework to reduce professional burnout and bring back joy in practice. *Joint Commission Journal on Quality and Patient Safety*, 43(6), 308-313.
- Takase, M., Maude, P., & Manias, E. (2005). Nurses' job dissatisfaction and turnover intention: Methodological myths and an alternative approach. *Nursing & Health Sciences*, 7(3), 209-217.
- Takase, M., Maude, P., & Manias, E. (2006). The impact of role discrepancy on nurses' intention to quit their jobs. *Journal of Clinical Nursing*, 15(9), 1071-1080.
- Tett, R. P., & Meyer, J. P. (1993). Job satisfaction, organizational commitment, turnover intention, and turnover: path analyses based on meta - analytic findings. *Personnel Psychology*, 46(2), 259-293.
- Tian, K., Xiao, X., Zeng, R., Xia, W., Feng, J., Gan, Y., & Zhou, Y. (2022). Prevalence of workplace violence against general practitioners: A systematic review and meta - analysis. *The International Journal of Health Planning and Management*, 37(3), 1238-1251.
- Tyokwe, B., & Naicker, V. (2021). The effectiveness of a performance management system at a South African public hospital in Cape Town. *Africa's Public Service Delivery and Performance Review*, 9(1), 99-109.
- Underdahl, L., Jones-Meineke, T., & Duthely, L. M. (2018). Reframing physician engagement: An analysis of physician resilience, grit, and retention. *International Journal of Healthcare Management*, 11(3), 243-250.
- Van Camp, J., & Chappy, S. (2017). The effectiveness of nurse residency programs on retention: A systematic review. *Aorn Journal*, 106(2), 128-144.
- Van der Heijden, B., Brown Mahoney, C., & Xu, Y. (2019). Impact of job demands and resources on nurses' burnout and occupational turnover intention towards an age-moderated mediation model for the nursing profession. *International Journal of Environmental Research and Public Health*, 16(11), 2011.
- Waltz, L. A., Munoz, L., Weber Johnson, H., & Rodriguez, T. (2020). Exploring job satisfaction and workplace engagement in millennial nurses. *Journal of Nursing Management*, 28(3), 673-681.
- Wang, J., Sang, S., & Zhang, J. (2020). 心理资本和付出-回报失衡对重症监护室护士离职意愿的影响 [Influence of psychological capital and effort-reward imbalance on the turnover intention of nurses in intensive care unit]. *Guangxi Medical Journal*, (16), 77-84.
- Wang, L., Tao, H., & Liu, X. H. (2011). 护士留职意愿与工作满意度的相关性研究 [Study on the correlation between nurses' willingness to stay and job satisfaction]. *Chinese*

- Nursing Journal*, 46(1), 19-22.
- Wang, Q., L., Y., & Ji, X. Y. (2013). 护士工作嵌入感、工作满意度与留任意愿关系研究 [A study on the relationship among job embeddedness, job satisfaction and retention intention of nurses]. *Chinese Journal of Nursing*, 48(1), 55-57.
- Wang, T. (2006). *Research of ICM based on the enterprise performance* [Doctoral dissertation]. Wuhan University of Technology.
- Wang, X. H. (2010). 哈尔滨市 12 所三级甲等医院护理管理者变革型领导行为调查 [A survey on transformational leadership behavior of nursing managers in 12 tertiary-level hospitals in Harbin]. *China Nursing Management*, 10(11), 41-43.
- Wargo Sugleris, M., Robbins, W., Lane, C. J., & Phillips, L. R. (2018a). Job satisfaction, work environment and successful ageing: Determinants of delaying retirement among acute care nurses. *Journal of Advanced Nursing*, 74(4), 900-913.
- Wargo Sugleris, M., Robbins, W., Lane, C. J., & Phillips, L. R. (2018b). Job satisfaction, work environment and successful ageing: Determinants of delaying retirement among acute care nurses. *Journal of Advanced Nursing*, 74(4), 900-913.
- Wei, F., Abbas, J., Alarifi, G., Zhang, Z., Adam, N. A., & de Queiroz, M. J. (2023). Role of green intellectual capital and top management commitment in organizational environmental performance and reputation: Moderating role of pro-environmental behavior. *Journal of Cleaner Production*, 405, 136847.
- Weisberg, J., & Kirschenbaum, A. (1991). Employee turnover intentions: Implications from a national sample. *International Journal of Human Resource Management*, 2(3), 359-375.
- Westphaln, K. K., Fry-Bowers, E. K., & Georges, J. M. (2020). Social capital: A concept analysis. *Advances in Nursing Science*, 43(2), E80-E111.
- Wildeman, C., Wakefield, S., & Turney, K. (2013). Misidentifying the effects of parental incarceration? A comment on Johnson and Easterling (2012). *Journal of Marriage and Family*, 75(1), 252-258.
- Wolfgang, A. P. (1988). Job stress in the health professions: A study of physicians, nurses, and pharmacists. *Behavioral Medicine*, 14(1), 43-47.
- Wu, R., & Lin, M. (2017). 大型三甲医院护士职业认同现状调查 [Investigation on the status quo of nurses' professional identity in large tertiary hospitals]. *International Journal of Nursing*, 36(8), 1030-1034.
- Wu, Y., Mao, J., Wang, L., Lu, D., Yang, L., & Zhao, L. (2020). 三级医院磁力护理工作环境及护士离职意愿评价研究 [Research on evaluation of magnetism nursing work environment and turnover intention of nurses in tertiary hospitals]. *Chinese Hospital Management*, 38(5), 64-66.
- Xiao, Y., Liu, X. X., & Lin, M. T. (2020). Professional identity and the relationship between job satisfaction and turnover intention among operating room nurses in Qingdao. *Industry Health & Occupation Diseases*, 46(4), 290-292.
- Xie, L. Q., Guo, S. W., Lin, X. R., & Chen, K. Z. (2015). 某三甲医院 73 名护士离职原因及再就业情况调查分析 [Investigation and analysis on the reasons for resignation and re-employment situation of 73 nurses in a tertiary hospital]. *Journal of Nursing: Surgery Edition*, 30(6), 9-12.
- Xing, K., Zhang, X., Jiao, M., Cui, Y., Lu, Y., Liu, J., Zhang, J., Zhao, Y., Zhao, Y., & Li, Y. (2016). Concern about workplace violence and its risk factors in Chinese township hospitals: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 13(8), 811.
- Xiong, Y. (2017). 助产专业职称晋升体系的构建 [Construction of title promotion system in midwifery specialty]. *Chinese Journal of Modern Nursing*, 23(1), 10-13.
- Xu, T. (2008). *Analysis of influencing factors of migrant workers' job satisfaction* [Doctoral

- dissertation]. Sun Yat-sen University.
- Xu, Z. (2014). *A research on effects of intellectual capital and dynamic capability on enterprise performance* [Master's Thesis]. Shandong University.
- Yang, L. C., Chen, J. G., Gao, Y. J., & Cao, W. M. (2020). 基于 Price-Mueller 模型的护士离职影响因素研究 [Research on the factors influencing nurses' turnover based on Price-Mueller model]. *Chinese Nursing Research*, 34(3), 486-490.
- Yang, M. Y. (2016). *The study of nurses' turnover intention and influencing factors on Wuxi Public Hospital* [Doctoral dissertation]. East China University of Political Science and Law.
- Yang, T. T., Li, X. Y., Yu, L. P., Li, Y. L., Li, S. Y., & Yan, H. (2020). 工作-家庭冲突在护士工作压力与离职意愿关系中的中介作用 [Mediating role of work-family conflict between work stress and turnover intention of nurses]. *Chinese Nursing Research*, 34(3), 61-65.
- Yang, W. W., & Huang, Q. J. (2015). 三级医院新护士职业价值观及离职意愿现状调查 [Status quo of career values and turnover intention of new nurses in tertiary hospitals]. *Chinese Hospital Management*, 35(3), 62-64.
- Yang, Y., Ju, Z., & Liu, K. (2012). 我国护士流失原因分析 [Causative analysis on nurse turnover in China]. *Chinese Nursing Research*, (29), 2699-2701.
- Yang, Z. Z., Shi, Z. X., & Du, Q. (2016). 三级综合性医院手术室护士专业技术职称晋升考核体系的质性研究 [A qualitative research on professional title promotion's evaluation system of the Operating Room nurses in III general hospital]. *Chinese Modern Nursing Magazine*, 22(10), 1452-1454.
- Yao, Y., Zhao, S., Gao, X., An, Z., Wang, S., Li, H., Li, Y., Gao, L., Lu, L., & Dong, Z. (2018). General self-efficacy modifies the effect of stress on burnout in nurses with different personality types. *Bmc Health Services Research*, 18(1), 1-9.
- Yarbrough, S., Martin, P., Alfred, D., & McNeill, C. (2017). Professional values, job satisfaction, career development, and intent to stay. *Nursing Ethics*, 24(6), 675-685.
- Ye, J., Mao, A., Wang, J., Okoli, C. T., Zhang, Y., Shuai, H., Lin, M., Chen, B., & Zhuang, L. (2020). From twisting to settling down as a nurse in China: A qualitative study of the commitment to nursing as a career. *BMC nursing*, 19(1), 1-11.
- Yildiz, Z., Ayhan, S., & Erdoğan, S. (2009). The impact of nurses' motivation to work, job satisfaction, and sociodemographic characteristics on intention to quit their current job: An empirical study in Turkey. *Applied Nursing Research*, 22(2), 113-118.
- Yu, F., Raphael, D., Mackay, L., Smith, M., & King, A. (2019). Personal and work-related factors associated with nurse resilience: A systematic review. *International Journal of Nursing Studies*, 93, 129-140.
- Yu, H. (2007). 中国护士工作压力源量表信度与效度分析 [Analysis of the reliability and validity of the Work Stress Source Scale for Chinese Nurses]. *Nursing Studies: Midterm Edition*, 21(8), 2090-2093.
- Yu, M., & Lee, H. (2018). Impact of resilience and job involvement on turnover intention of new graduate nurses using structural equation modeling. *Japan Journal of Nursing Science*, 15(4), 351-362.
- Yu, X. N., & Zhang, J. X. (2007). Factor analysis and psychometric evaluation of the Connor-Davidson Resilience Scale (CD-RISC) with Chinese people. *Social Behavior and Personality*, 35(1), 19-30.
- Yue, L., Wang, S., Wang, Y., Fan, L., & Xia, X. (2013). 以核心能力为导向的临床护士专业晋升指标体系 [A core competency-oriented indicator system for clinical nurses' professional promotion]. *Journal of Nursing Science*, 28(16), 68-71.
- Yun, M. R., & Yu, B. (2021). Strategies for reducing hospital nurse turnover in South Korea:

- Nurses' perceptions and suggestions. *Journal of Nursing Management*, 29(5), 1256-1262.
- Zeidan, S. (2021). Organisational commitment, intentions to quit, intellectual capital and firm's market value and innovation performance. *International Journal of Knowledge Management Studies*, 12(3), 227-242.
- Zhang, X. G., & Guo, Y. (2008). 工作满意度研究的特质取向 [Trait orientation of job satisfaction research]. *Advances in Psychological Science*, 16(1), 143-153.
- Zhang, Y., LePine, J. A., Buckman, B. R., & Wei, F. (2014). It's not fair... or is it? The role of justice and leadership in explaining work stressor – job performance relationships. *Academy of Management Journal*, 57(3), 675-697.
- Zhao, Y., Wang, H., Sun, D., Ma, D., Li, H., Li, Y., Zhang, X., Xie, Z., & Sun, J. (2021). Job satisfaction, resilience and social support in relation to nurses' turnover intention based on the theory of planned behaviour: A structural equation modelling approach. *International Journal of Nursing Practice*, 27(6), e12941.
- Zheng, D., Wei, P. M., & Wang, D. P. (2017). 盐城市社区护士离职倾向及其影响因素 [Turnover intention of community nurses in Yancheng city and its influencing factors]. *Chinese Nursing Research*, 31(1), 277-280.
- Zhong, M., Yang, H., & Zhang, Q. (2019). 新医改下绩效评价体系和激励体系对三级公立医院护理人员护理服务质量的影响 [Influence of performance evaluation system and incentive system on the quality of nursing services of nursing personnel in tertiary public hospitals under the new medical reform]. *Journal of Practical Medical Techniques*, 26(10), 1347-1349.
- Zhong, X., Chen, W., & Yang, Y. (2021). 收入差距视角下四川省公立医院医务人员薪酬现状研究 [A study on the salary status of medical staff in public hospitals of Sichuan province based on the income-gap perspective]. *Chinese Health Economics*, 40(11), 28-32.
- Zhou, F., & Wang, D. H. (2015). Correlation of emergency nurses' demission intention and social support in hospitals of different levels. *Journal of Nursing Administration*, 15(9), 611-614.
- Zhu, R. G. (2019). *Research on the correlation between occupational identity, quality of life and job satisfaction of male nurses in Qingdao* [Doctoral dissertation]. Qingdao University.

Webliography

- American Association of Colleges of Nursing. (2022, October 26). *Data spotlight: Nurse faculty vacancies*. AACN. Retrieved December 30, 2023, from <https://www.aacnnursing.org/news-data/all-news/article/data-spotlight-nurse-faculty-vacancies>
- National Council of State Boards of Nursing. (2013, October 29). *National nursing workforce study*. National Council of State Boards of Nursing. Retrieved December 30, 2023, from www.ncsbn.org
- Nursing School Hub. (2023, March 7). *The demand for nurses*. Nursing School Hub. Retrieved December 30, 2023, from www.nursingschoolhub.com

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Other References

- China Ministry of Health. (2005). *Hospital management evaluation guide*.
- NHC. (2019). *China health statistical yearbook 2018*.
- NHFPC. (2017). *National nursing development plan (2016-2020)*.
- NHPC. (2014). *China health statistics yearbook 2014*.
- NHPC. (2015). *China healthcare development report 2015: Special issues on reform and development of Chinese public hospitals*.
- WHO. (2020). *State of the world's nursing report 2020*.

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Annex A: Questionnaire

Dear participants:

This questionnaire aims to gather your insights. Your responses will contribute significantly to our understanding and analysis. Please be assured that all responses will be kept confidential.

Read each question carefully before responding. Answer all questions honestly based on your own opinions and experiences. Select the option that best represents your level of agreement, from "Strongly Agree" to "Strongly Disagree."

Thank you very much for your cooperation.

Part One: Personal information

1. Gender: ☐Male ☐Female
2. Age (years old): ☐18-25 ☐25-30 ☐30-40 ☐40-50 ☐50-60 ☐Over 60
3. Education: ☐Technical secondary school ☐Junior college ☐Undergraduate
☐Postgraduate
4. Working years: ☐Less than 1 year ☐1-2 years ☐2-5 years
☐5-10 years ☐10-20 years ☐20-30 years ☐working years ≥ 30
5. Personal monthly income (yuan): ☐Less than 5000 ☐5000-10000 ☐10000-15000
☐More than 15000
6. Type of work: ☐Formal staff ☐Contract system
7. Position: ☐Nurse ☐Head Nurse ☐Director of Nursing Department
8. Job Title: ☐Assistant Nurse ☐Nurse ☐Nurse practitioner ☐Supervisor nurse ☐Deputy Chief Nurse ☐Chief Nurse

9. Marital status: ☐Married ☐Unmarried ☐Divorced/widowed
10. Status of children: ☐No children ☐Infants ☐Elementary school ☐Junior high school
☐High school ☐University and above
11. How many night shifts are on average each month: ☐0-4 ☐5-9 ☐10-14 ☐15 or more
12. Your department: ☐Obstetrics and Gynecology ☐Pediatrics ☐Emergency Department
☐Internal Medicine ☐Surgery
13. There is a chance to choose a job again, you still choose a nursing job: ☐Strongly disagree ☐Disagree ☐Unclear ☐Agree ☐Strongly agree
14. Satisfaction with the current job: ☐Very dissatisfied ☐Dissatisfied/Unsatisfied
☐Unclear ☐Basically satisfied ☐Very satisfied

Part Two:**Nurse Occupational Identity Scale**

Every question is a single answer one. There is no right or wrong repose. Please answer based on your first feeling or thoughts. Mark “√” in the box that you think is most suitable.

No.	Item	Very inconsistent	Inconsistent	Sometimes consistent	Consistent	Very consistent
1	Nursing can give me a sense of value					
2	I feel sure to approach and deal with anyone I meet					
3	My colleagues' understanding and support can make me feel happy					
4	I firmly believe that people have subjective choice and initiative, and can not only adapt to the professional environment, but also create and optimize the professional environment					
5	I think there are both inevitability and contingency in choosing a career. Only when you approve of it can you make a difference					
6	The nursing work matches my interest and personality					
7	The nursing profession makes it easier for me to win the respect of the public					
8	I like to communicate with people and am keen to find opportunities for social contact					
9	The recognition of doctors and administrators made me feel happy					
10	I feel that individuals can get exercise and growth in their career					
11	I think people who devote themselves to their career will surely get rich rewards from their career					
12	Leaving the nursing profession will cause me some emotional trauma					
13	My daily work is full of things that interest me					
14	I'm confident in my social behaviour					
15	Nursing can make my family and I have valuable medical resources					
16	When I encounter difficulties in my career, I will think positively, try to find solutions and never give up					
17	I feel that by analysing my strengths and weaknesses, I can narrow					

- the gap between my ideal self and my real self in my career
- 18 Working as a nurse makes me happy
- 19 When faced with a difficult problem, I can usually find several solutions
- 20 The satisfaction evaluation of patients and their families can make me feel happy
- 21 When I encounter setbacks in my career, I do not regard it as a stumbling block, but as a steppingstone, and regard it as a training for climbing higher goals
- 22 Nursing can make me use of my personal ability and specialty
- 23 I am more willing to compare with those who are better than myself to motivate myself
- 24 When I am in a bad mood, I will talk to my friends, listen to music or participate in sports activities to adjust myself
- 25 If I try my best, I can always solve the problem
- 26 My present position will enable me to give full play to my ability and gain happiness
- 27 Even if others oppose me, I still have a way to get what I want
- 28 When I meet people in more difficult situations than I do
- 29 I have clear career goals
- 30 I feel a sense of responsibility for continuing to work as a nurse

Job Satisfaction Scale

How satisfied are you with the following aspects of your work? Each question is evaluated according to the following five levels. Please mark √ (single choice) in the corresponding box.

Number	Item	Very dissatisfied	Not satisfied	General level	Generally satisfied	Very satisfied
1	Salary					
2	Vacation					
3	Benefits					
4	Work hours					
5	Schedule flexibility					
6	Workdays					
7	Part-time					

8	Weekends off
9	Flexibility weekends
10	Weekend pay
11	Maternity leave
12	Childcare
13	Supervisor
14	Peers
15	Physicians
16	Care delivery
17	Work social contact
18	Social contact outside
19	Interact disciplines
20	Interact faculty
21	Committee
22	Control setting
23	Career advance
24	Superior recognition
25	Peer recognition
26	Feedback
27	Research
28	Publish
29	Responsibility
30	Control conditions
31	Decision making

Turnover Intention Scale

1. Are you considering quitting your current job?

☐often ☐occasionally ☐seldom ☐never

2. Do you want to find other jobs of the same nature?

☐often ☐occasionally ☐seldom ☐never

3. Do you want to find other jobs of a different nature?

☐often ☐occasionally ☐seldom ☐never

4. Based on your current situation and conditions, what do you think is the possibility of finding a suitable position in another institution?

☐very likely ☐likely ☐impossible ☐very unlikely

5. If you know that there is a job vacancy suitable for you in another organization, how likely is it that you will get the job?

☐very likely ☐likely ☐impossible ☐very unlikely

6. Will you quit your current job?

☐definitely ☐maybe ☐maybe not ☐definitely not

Nurse Job Stressors Scale

All questions are single answers. There is no right or wrong answer. Please feel comfortable to answer in accordance with your real situation.

Item	Never	Sometimes	Often	Almost every day
1. The social status of nursing work is too low				
2. There are too few opportunities for further study				
3. Low wages and benefits				
4. The chance of promotion is too little				
5. Shift frequently				
6. Less independence in work				
7. Unclear division of work				
8. Too much work				
9. The number of nurses at work is small				
10. There is no time for psychological nursing				
11. Too much non nursing work				
12. Too much useless paperwork				
13. Poor working environment				
14. The instruments and equipment needed in the work are insufficient				
15. Crowded ward				
16. Worry about mistakes and accidents in work				
17. Nurses' work is not recognized by patients and their families Nursing care of patients				
19. The patient's family is impolite				
20. The patient's demands are too high or too much				
21. The patient is impolite				
22. The patient does not cooperate				
23. The knowledge learned cannot meet the psychological needs of patients and their families				
24. Lack of knowledge about patient education				
25. Worry about the patient's pain caused by nursing operation				
26. The patient in care died suddenly				
27. Lack of understanding and respect from other health workers				
28. The understanding and support of nursing managers were not enough				

29. Too much criticism from nursing managers
30. Doctors are too fastidious about nursing work
31. Lack of understanding and support among colleagues
32. Conflict with nursing managers
33. It is difficult to work with some nurses in the ward
34. Conflicts with doctors
35. There is no friendly and cooperative atmosphere among colleagues

Psychological Capital Scale

Item	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
1. I believe I can analyse long-term problems and find solutions.						
2. I am confident in presenting what I am doing in the meeting.						
3. I believe I have contributed to the discussion on the development of hospital nursing.						
4. Within my scope of work, I believe I can help set goals.						
5. I believe I can contact people outside the department and discuss issues.						
6. I believe I can present information to my colleagues.						
7. If I find myself in a difficult position in my work, I can come up with a lot of ways to get rid of it.						
8. I am fully fulfilling my work objectives at present.						
9. There are many solutions to any problem.						
10. I think I am quite successful in my work.						
11. I can come up with a lot of ways to achieve my current work goals.						
12. I am achieving the work goals I set for myself at present.						
13. In my work, I will solve the problems I encounter in any case.						
14. If I have to do it in my work, I can say I can also fight independently.						
15. I usually take the stress in my work calmly.						
16. I have experienced many difficulties before, so I can survive the difficult period of work now.						
17. In my current work, I feel like I can handle a lot of things at the same time.						
18. I always see the bright side of things for my work.						
19. I am optimistic about what will happen in the future of my work.						

20. At work, I always believe that "behind the dark is light, not pessimistic".

Mental Resilience Scale

Items	Never	Rarely	Sometimes	Often	Always
1. You can adapt to change					
2. You have closed and secure relationships					
3. Sometimes fate or God can help you					
4. You can deal with whatever comes					
5. Past success gives confidence to you for new challenge					
6. You can see the humorous side of things					
7. Coping with pressure makes me feel empowered					
8. You tend to bounce back after illness or hardship					
9. Things happen for a reason					
10. No matter what the result is, you will try your best					
11. You can achieve your goals					
12. When things look hopeless, you do not give up					
13. You know where to turn for help					
14. You can focus and think clearly under pressure					
15. You prefer to take the lead in problem solving					
16. You are not easily discouraged by failure					
17. You think of self as strong person					
18. You can make unusual or difficult decisions					
19. You can handle unpleasant feelings					
20. You have to act on a hunch					
21. You have strong sense of purpose					
22. You are in control of your life					
23. You like challenges					
24. You work hard to attain your goals					
25. You feel pride in your achievements					

Intellectual Capital and Innovative Capabilities Scale

To what extent do you agree with the following question describing your organization's intellectual capital? (1=strongly disagree; 7=strongly agree)."

Items	1	2	3	4	5	6	7
Human Capital:							
Our employees are highly skilled.							
Our employees are widely considered the best in our industry.							
Our employees are creative and bright.							
Our employees are experts in their particular jobs and functions.							
Our employees develop new ideas and knowledge.							
Social Capital:							
Our employees are skilled at collaborating with each other to diagnose and solve problems.							
Our employees share information and learn from one another.							
Our employees interact and exchange ideas with people from different areas of the company.							
Our employees' partner with customers, suppliers, alliance partners, etc., to develop solutions.							
Our employees apply knowledge from one area of the company to problems and opportunities that arise in another.							
Organizational Capital:							
Our organization uses patents and licenses as a way to store knowledge.							
Much of our organization's knowledge is contained in manuals, databases, etc							
Our organization's culture (stories, rituals) contains valuable ideas, ways of doing business, etc							
Our organization embeds much of its knowledge and information in structures, systems, and processes.							