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MAIN FACTORS INFLUENCING
NURSE JOB SATISFACTION

A follow-up study

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Abstract

Healthcare industry has been facing a considerable growth in China, in recent years. People pay much attention to healthcare and hospital service quality. Nursing is an important part of healthcare. This study is a follow-up to the dissertation concerning the main factors influencing nurse job satisfaction. As the job satisfaction remains low among the nurses in China, turnover among the nurses is rising. The purpose of this dissertation is to examine the nurse job satisfaction level, and understand which factors influence nurse job satisfaction, in order to know how to increase motivation and improve the quality of health care service.

A questionnaire was developed to collect data from China. The number of respondents was 238. The results show that neither age nor education has an impact on nurse job satisfaction. At the same time, the result of the attitude based on age and education as derived from the questionnaire differed from the result obtained in 2006 (Wang *et al.*, 2006). In 2006 the main factors influencing nurse job satisfaction were fairness, salary and responsibility, while, in 2014 the main factors influencing nurse job satisfaction were salary, workload, getting recognition from others (fulfillment), equipment as an important element in their job, and leadership.

Key words: Nursing in China, Nurse Job satisfaction, Intrinsic factors, Extrinsic factors

JEL Classification: M5, M54

Resumo

O sector de saúde tem enfrentado um crescimento considerável na China nos últimos anos. As pessoas prestam muita atenção aos cuidados de saúde e à qualidade do serviço hospitalar. A enfermagem constitui uma parte importante dos cuidados de saúde.

Este estudo é uma replicação de um estudo que abordou os principais factores que influenciam a satisfação no trabalho. Porque a satisfação no trabalho permanece baixa na enfermagem, a rotatividade externa nesta profissão está a subir. O objectivo deste estudo é o de examinar a satisfação no trabalho de enfermeiros e compreender que factores influenciam a satisfação no trabalho por parte destes profissionais de saúde para saber como aumentar a motivação e melhorar a qualidade dos cuidados de saúde prestados.

Realizámos um inquérito por questionário para recolher dados na China. O número de respondentes foi 238. Os resultados mostraram que nem a idade nem as habilitações escolares são preditores da satisfação no trabalho. Em simultâneo, o resultado da atitude com base na idade e na habilitação escolar, conforme retirado do questionário, diferiu do resultado encontrado por Wang et al. (2006). Neste estudo os principais factores que influenciavam a satisfação no trabalho de enfermeiros foram a justiça, salário e responsabilidade enquanto que no estudo presente, em 2014, os principais factores foram o salário, a carga de trabalho, o ser reconhecido pelos outros (realização), o equipamento como um elemento importante em seu trabalho, e a liderança.

Palavras-chave: Enfermagem na China, Satisfação no trabalho de enfermeiros, Factores intrínsecos, Factores extrínsecos.

JEL : M5, M54

文 摘

近年来，随着中国医疗行业的不断发展与进步。人们非常重视医疗行业及医院服务质量。护理也是医疗行业中重要的组成部分。据此，这是一篇关于影响护士工作满意度的重要性因素的跟进论文。由于中国的护士工作满意度较低，护士离职的数量也正在增加。本文的主要目的是测量护士工作满意度水平，理解哪些因素影响护士的工作满意度，以便更好地知道怎样去激励他们，并用提高医疗服务质量。

本论文的问卷调查数据来自中国。共回收了 238 份。结果表明，护士的年龄和教育程度均未对护士工作满意度有影响。同时，这项调查的结果同 2006 年（王海娟等，2006）护士的年龄和教育程度对护士工作满意度的影响也有不同。另一方面，在 2006 年主要影响护士工作满意度的因素是公平、薪酬和责任义务。然而，在 2014 年主要影响护士工作满意度的因素有薪酬和工作负荷。同样，他们还关心来自别人的认可和工作中设备的影响也是其重要因素。另外，领导对他们的影响也是不可忽略。

关键词: 中国护士, 护士工作满意度, 内部因素, 外部因素

JEL 分类: M5, M54

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1 Introduction

1.1 Background

Job satisfaction is important in terms of organizational psychology and organizational behavior. It aims at the physical and mental well-being of individual employees not only from the organizational psychology perspective, but also from the organizational management and human resource management perspectives. Policies are established to improve employees' job satisfaction and their job-related behavior and, hence, to improve the productivity and profitability of organizations (Cranny, Smith & Stone, 1992). Job satisfaction and job competence are interwoven (Herzberg, Mausner & Snyderman, 1993; Krueger, 1996). When people are satisfied with their jobs, they tend to perform better (Judge *et al.*, 2001).

In the wake of social and economic development and improvement in living conditions, people in China are now having increasingly high demands and expectations for medical service. The supply of high quality healthcare service has not been able to match the demand in the market. Lack of high quality nursing is one of the critical issues. Firstly, Chinese Nursing Association pointed out that China faces a shortage of nurses of at least one million people in 2012 (Chinese Nursing Association, 2012). Secondly, in the year of 2001, the number of Chinese nurses was 1.286 million. The nurse population, per capita, ranked the third last in the world (Wang, 2004). As the number of nurses per thousand people was just around 1.0, increasing the number of nurses was of high urgency. In the International Nurses Day of forum in 2014, Ma (2013) mentioned China's registered nurses reached 2.783 million, increasing to 2.05 nurses per thousand people. Thirdly, one problem of nursing management in China is the low level education as well as most of nurses have not undergone any professional management training. The poor nursing education has constrained nurses' productivity and competence. Insufficient supply and high demand for nurse's result in overworked for nurses in China. This in turn affects their job satisfaction and increases their turnover intention. As a result, many hospitals in China experience high turnover of nurses which further worsens the nursing issue.

Given the importance of nurse care in China's healthcare development, in 2006, there was a dissertation (Wang *et al.*, 2006) examining the main factors influencing nurse job satisfaction in China. Since that study, Chinese healthcare has experienced a huge and significant development in the last decade. We believe it is significant to conduct a follow-up study to re-examine the factors influencing the job satisfaction of Chinese nurses. We foresee that further research on the difference or similarity of the influencing factors on job satisfaction may help improve Chinese nurses' job satisfaction and productivity.

1.2 Research Purpose

Considering the existence of previous research, especially that conducted in China, with similar goals, we opted to conduct a follow-up of Wang *et al.* (2006) study. This dissertation is therefore a follow-up of the main factors influencing nurse job satisfaction. Its purpose is listed below:

- 1) Examining the nurse job satisfaction level.
- 2) Understanding which factors influence nurse job satisfaction.
- 3) Understanding how to better motivate nurses and improve the quality of health care service.

1.3 Research Questions

Job satisfaction is a resultant of perceived accomplishments and achievements of the workers. It is generally considered to be directly related to labor productivity and personal welfare (Vijayalakshmi & Kalidoss, 2015). Job satisfaction means to do one thing and enjoy it, since it brings success and rewarding work. The key elements that lead to job satisfaction are recognition, income, promotion, and the achievement of other goals and sense of fulfillment (Kaliski, 2007). We believe that job satisfaction appears as the representative of the feeling linked with physical and psychological needs (Aziri, 2011). In other words, job satisfaction consists of how employees treat their work as a whole, and depends on their attitude towards their job. Therefore, the nurse job satisfaction can be considered to be the general attitude of the nurses work (Wang *et al.*, 2006).

Research on the job satisfaction of hospital nurses is crucial for their wellbeing because of the relationship between satisfaction and nurse mobility and performance (Weisman *et al.*, 1980; Suhonen *et al.*, 2013). As high job satisfaction leads to low turnover, increased job satisfaction is further beneficial in economic grounds, including cost saving (Hayes *et al.*, 2006) with low turnover (Brewer & Kovner., 2014).

This study intends to analyze the factors influencing nurse job satisfaction to discuss the following questions:

1. What are the main factors influencing nurse job satisfaction?
2. What is the difference in the main factors influencing nurse job satisfaction in China in 2006 and 2014?

1.4 Structure of the Dissertation

In the following Chapters of this dissertation, we will do a follow-up study of the main factors influencing nurse job satisfaction in China. We will further analyze the nurse job satisfaction level and understand which factors influence nurse job satisfaction. Moreover, this dissertation attempts to understand how to better motivate nurses and improve the quality of health care service. Chapter 2 discusses the literature review including motivation theories, work/ life balance, influence of social networks in the professional life of nurses and provides a research model and proposes the hypotheses.

Chapter 3 discusses the methodology of study, the responses collected from the questionnaires and samples and the analysis tool. Chapter 4 results the hypotheses and analyses them and explains the results and compares the results from 2006 and 2014. Chapter 5 discusses and summarizes the dissertation findings and implications. Finally, Chapter 6 will drive us to the conclusion of this research discussing its limitations and the possible future enhancements.

2 Literature Review

2.1 Motivation Theories

According to the studies on Psychology, motivation focuses on the behavior of voluntary action, using the philosopher and psychologist functionalism (Forgas *et al.*, 2005). Motivation is defined in a very simple and direct way as a fundamental behavior of an individual (Guay *et al.*, 2010). In the psychological point of view, motivation is defined as the driving force that leads us to do or not to do something (Broussard and Garrison, 2004). Motivation is the internal mental state of a person, related to the launch, internal mental state direction, persistence, and strength and termination behavior, with respect to a certain action (Landy and Becker, 1987). The managerial meaning of motivation is the action managers perform to induce others to produce the desired outcome or result (Bhadoriya and Chauhan, 2013). Therefore, motivation can be defined as the force energizing or giving direction to behavior.

Motivation theories in the management and organizational behavior literature represent researchers' attempts to understand the processes that cause people to act productively in the context of the employment relationship, for the benefit of their employers. Motivation theories are closely related to job satisfaction. Most studies of job satisfaction in the field can be divided into three main themes: the measurement of job satisfaction, job satisfaction factors and job satisfaction (Wang *et al.*, 2006).

Situational theories of job satisfaction attempt to identify that attitude towards their work. Three influential theories were more popular and planted the seeds for ensuing research, namely Maslow's theory, Herzberg's two-factor theory and Vroom's Expectancy Theory, which we shall briefly present.

One of the most cited, taught, and used theory of motivation in Maslow's theory. Hierarchy of needs is often displayed as a pyramid. At the lowest level of the pyramid are the most basic needs, while the more complex needs are at the top of the pyramid. Bottom of the pyramid is a basic need of physical requirements, including the need for food, water, sleep and warmth. Once these lower-level needs are met, people need to be able to pursue the higher levels of requirements, including safety and security (Wu, 2012).

Although it has been largely criticized for many of its assumptions (e.g. hierarchical nature) its popularity suggests it is very meaningful for those who study or try to apply knowledge about human motivation at work. Alongside papers that doubt its empirical support there have also been those who actually showed it is valid. The most recent one to have done so with a Chinese population was conducted by Taormina & Gao (2013). This study used a sample comprised of 386 individuals from China and, by testing factorial validity of a Maslow needs scale they found support for its structure. Table 1 partially replicates their findings which show not only that all dimensions are intertwined as it relates with general health.

Table 1. Maslow's need classification scheme

Variable	Mean	SD	1	2	3	4	5	Cronbach alpha
1. Physiological	3.23	0.46	—					.81
2. Safe-Security	3.44	0.51	.50**	—				.87
3. Belongingness	3.82	0.45	.37**	.38**	—			.90
4. Esteem	3.57	0.47	.40**	.31**	.50**	—		.91
5. Self-actualization	3.21	0.55	.53**	.35**	.34**	.50**	—	.86
6. Overall health	2.63	0.74	.37**	.14**	.19**	.18**	.12*	—

Source: Taormina & Bridwell (2013, pg. 167), * $p < .05$. ** $p < .01$.

Herzberg's theory is also called two-factor theory that distinguished dissatisfiers (factors that cause dissatisfaction) from satisfiers (factors that cause satisfaction). Figure 1 shows the dynamics between such factors.

Most notably, that unfulfilled hygiene factors may lead to dissatisfaction and demotivation. It depends on company policies, quality of supervision, relations with others, personal life, rate of pay, job security and working conditions. However, "not dissatisfied but not motivated" cannot be neglected. This means that in order to increase job satisfaction managers must focus on motivators such as 'making the work interesting, challenging, and personally rewarding' (Judge *et al.*, 2001). The

motivational factors consist of positive satisfaction and motivation. It includes achievement, career advancement, personal growth, job interest, recognition, and responsibility.

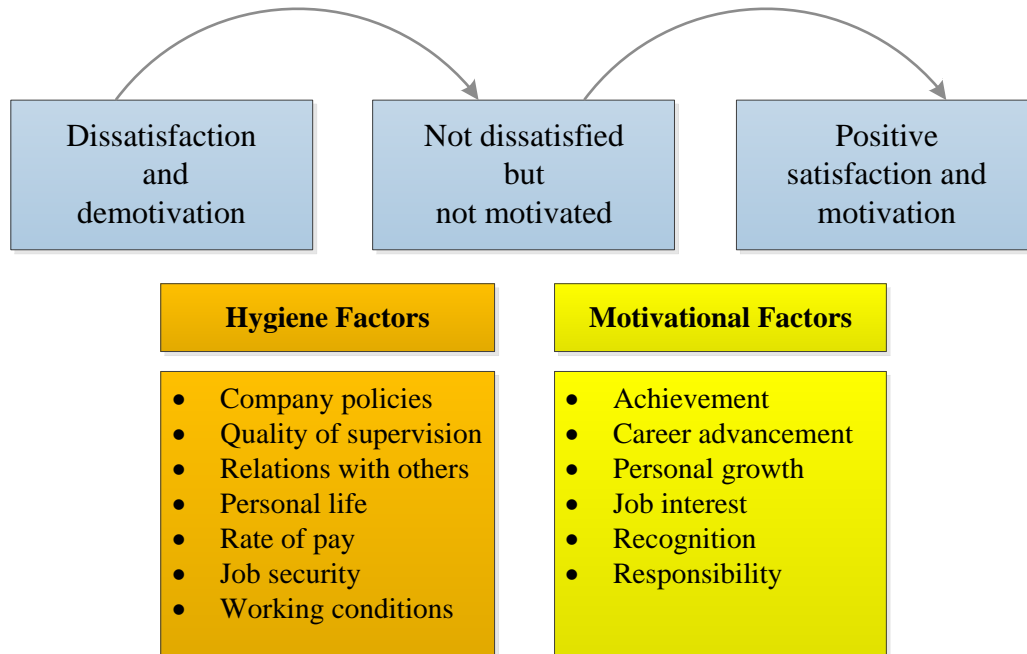


Figure 1. Herzberg's two-factor theory

Source: Herzberg, Mausner & Snyderman (1993).

Herzberg's two-factor theory provides an effective tool for management to motivate staff. Further tests indicated that job satisfaction has a strong positive relationship with the factors that are usually associated with intrinsic satisfaction (Baylor, 2010). It is further believed that the culture plays an important role in the work behavior.

Expectation theory was developed by Vroom (1964) for the work environments. The main idea is that people believe that they will reach their stronger performance due to their stronger efforts and effectiveness, and will eventually achieve the outcomes they want in return. In addition, expectations theory has four assumptions (Vroom, 1964). Firstly, people join an organization, while having their own expectations based on their past experiences, needs, and motivations. Secondly, individual behavior is caused by a conscious choice, which means that people's will depends on their own

expectations. Thirdly, people want something different from the organization, including, but not limited to, a good salary, job security, advancement and challenges. Fourthly, people optimize the outcomes relevantly for their own interests and motivations.

Expectance theory consists of three major elements: expectance, instrumentality and valence. Expectance is defined as the self-validated possibility of a certain level of performance for a person. Instrumentality defines the self-validated possibility of a given level of performance leading to various outcomes for a person. Valence defines how strong the preference of an employee towards a specific reward. Suggested by Vroom (1964), the relationship between expectance, instrumentality, valence and motivation could be expressed as shown in Figure 2:

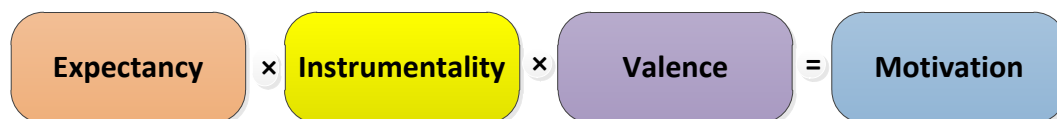


Figure 2. The equation of motivation

Source: Vroom, 1964. Work and motivation. San Francisco, CA: Jossey-Bass.

Motivation is considered as the multiplication of the three key elements. Therefore, even if they are low, the result of the multiplier effect, in the left side of the equation, leading to higher levels of motivation. Meanwhile, as the multiplier is assumed, if one of the three elements is zero, the level of motivation is also zero (Lunenburg, 2011).

Vroom's Expectancy theory contributes to the managers in making goals. According to the theory of the recommendations expected in the management perspective, employees can change people's efforts, and results were expected in return is expected to be rewarded (Lunenburg, 2011).

2.2 Work/Life Balance

Work-life balance is a continuous string of efforts in terms of time management. It is the employees managing their time and life effectively between their work and other aspects of life.

Based on the data from U.S Department of Labor (2008, 2010), the number of working women today has increased from 5.1 million in 1900 to 18.4 million in 1950 to 66.2 million in 2009. Employers as well as the employees must understand the importance of the quality of life in an organization, as maintaining a proper balance between work and life, and having a good quality of life can be difficult (Gupta & Sharma, 2011).

Nurses often find it difficult to acquire work and life balance, due to the heavy demands imposed by their job, shift schedules and the necessity to meet with the needs of others. They often find it stressful due to the need to provide good service and balance all the aspects of their life (Boertje *et al.*, 2013), as often indicated by a work-life balance model as shown by Figure 3.

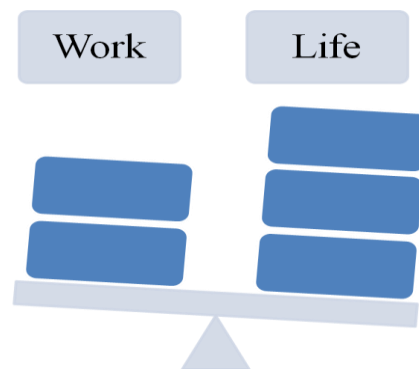


Figure 3. Work/ life balance model

Source: Boertje *et al.*, 2013. Achieving a work-life balance. American Nurse Today.

2.3 Social Networks

The growing popularity and diversity of social network applications present new opportunities as well as new challenges. The resulting social networks have high value to business intelligence, sociological studies, organizational studies, and epidemical studies. The ability to explore and extract information of interest from the networks is thus crucial. It is generally difficult to visualize and reason the networks using conventional methods, as they tend to be large, consisting of multi-category nodes and edges (Crnovrsanin *et al.*, 2014).

Direct visualization of large, complex networks using force-directed layouts often leads to the well-known “hairball problem”. Based on the Figure 4, we can get that each node

represents a person and an edge is a call made between individuals. The right images shows how bundling can ease out hidden structure in the graph.

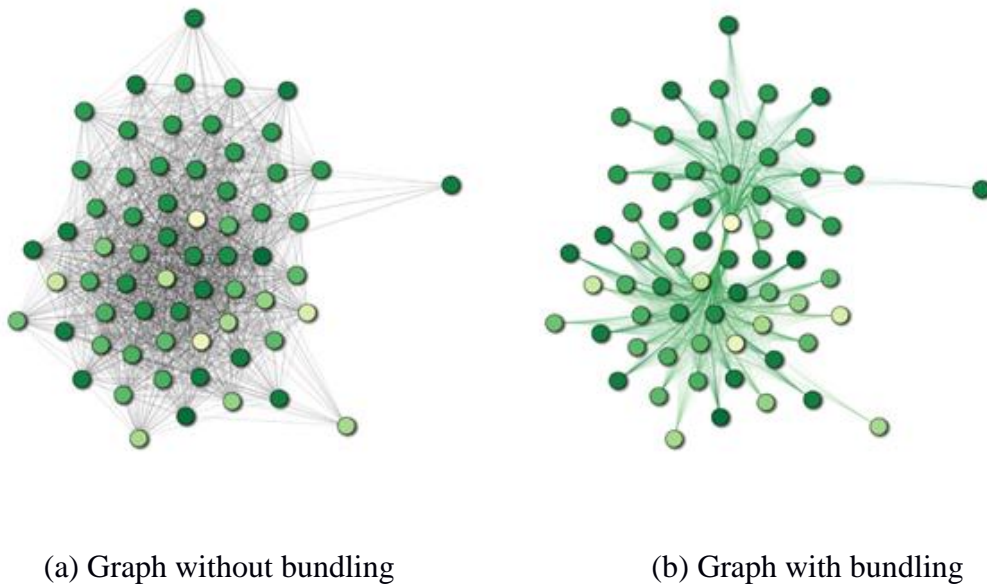


Figure 4. Social network

Source: Crnovrsanin *et al.*, (2014), “Visualization techniques for categorical analysis of social networks with multiple edge sets”, *Social Networks* 37, 56–64

The social networks including Facebook, LinkedIn, Twitter, Wechat and other popular social media can share and spread the knowledge. Using social media is a way to work with colleagues globally and it is shown to enhance the career development (Prinz *et al.*, 2011).

Moreover social networking offers a global perspective of nursing to the nurses. Online nursing groups offer opportunities in networking with the nurses of same interest or specialty. The nurses may either join existing special interest groups or form their own. By creating and discussing through these social media groups, the nurses may keep in touch with the other nurses regularly. Furthermore, these web sites are designed to be easy to use and intuitive for an average non tech-savvy computer user (Prinz *et al.*, 2011).

2.4 Job Satisfaction and Nurse Turnover

Job satisfaction instruments that have been developed, notably the scale by Mueller and McCloskey (1990) indicated that includes eight satisfaction factors; extrinsic

rewards, scheduling, family/work balance, co-workers, interaction, professional opportunities, praise/recognition, and control/responsibility. Nurse job dissatisfaction is often identified as the reason for the turnover of nurses (Lum *et al.*, 1998; Tzeng, 2002). Table 2 lists the sources of nurses' job satisfaction and the literature that extensively analyze those factors. Table 3 further summarizes the literature on Chinese nurses' job satisfaction, with further effects summarized in Table 4.

Table 2. Sources of nurses' job satisfaction

Factors	Key empirical sources
Working conditions	Adamson <i>et al.</i> (1995), Nolan <i>et al.</i> (1995), Tovey and Adams (1999), Adams and Bond (2000), Tzeng (2002a,b)
Interaction Relationship with patients Relationship with co-workers Relationship with managers	Adamson <i>et al.</i> (1995), Nolan <i>et al.</i> (1995), Lee (1998), Tovey and Adams (1999), Adams and Bond (2000), Aien <i>et al.</i> (2001), Price (2002), Tzeng (2002a,b), Wang (2002)
Work itself Workload; scheduling; challenging working; routinization; task requirements (abilities, skills etc)	Nolan <i>et al.</i> (1995,1998), Lee (1998), Lundh (1999), Tovey and Adams (1999), Adams and Bond (2000), Price (2002), Tzeng (2002a,b), Wang (2002)
Remuneration (pay, salary)	Adamson <i>et al.</i> (1995), Nolan <i>et al.</i> (1995), Lee (1998), Aiken <i>et al.</i> (2001), Price (2002), Tzeng (2002a,b), Wang (2002)
Self-growth and promotion Professional training; opportunities of advancement; job promotion; personal achievement	Nolan <i>et al.</i> (1995), Lee (1998), Aiken <i>et al.</i> (2001), Price (2002), Tzeng (2002a,b), Wang (2002)
Praise and recognition	Nolan <i>et al.</i> (1995), Lee (1998), Aiken <i>et al.</i> (2001), Price (2002), Tzeng (2002a,b), Wang (2002)
Control and responsibility Autonomy; decision-making	Nolan <i>et al.</i> (1995, 1998), Lee (1998), Price (2002), Wang (2002)
Job security	Nolan <i>et al.</i> (1995, 1998)
Leadership styles and organizational policies	Lee (1998), Tzeng (2002a,b)

Source: Lu *et al* (2012) Job satisfaction among hospital nurses revisited: A systematic review. International Journal of Nursing Studies 49, 1017-1038.

Table 3. Summary of included studies regarding source of Chinese nurses' job satisfaction

Code study	Location	Sample and response rate	Instruments	Key findings
Lee (1998)	Hong Kong	194 nurses; response rates of 45-83%	Stamps and Piedmonte's (1986) index of work satisfaction	Nurses more dissatisfied than satisfied
Wang (2002)	Mainland China	191 nurses; a response rate of 100%	Edward's(1959) personal preference schedule (EPPS)	No significant relationship between satisfaction with job autonomy and individual need for autonomy
Tzeng (2002b)	Taiwan	786 nurses; a response rate of 76%	Mueller and McCloskey's (1990a,b) satisfaction scale Tzeng's (2002b) nurses' job satisfaction and the perceived important questionnaire	Nurses were more dissatisfied than satisfied and mostly dissatisfied with pay and job promotion Indirect working environment, salary and promotion were very important but strongly dissatisfying

Source: Lu *et al* (2012) Job satisfaction among hospital nurses revisited: A systematic review. International Journal of Nursing Studies 49, 1017-1038.

Low job satisfaction was identified mostly in young, newly registered and highly educated nurses, whilst also being associated with the management, promotion prospects, job security and a lot of time for clinical duties (Hayes *et al.*, 2006).

Table 4. Summary of included studies regarding effects of Chinese nurses' job satisfaction

Code study	Location	Sample and response rate	Instruments	Key findings
Wu <i>et al.</i> , (2000)	Mainland China	382 nurses; a response rate of 92.5%	Job stress scale (specially designed)	There was a positive and significant relationship between job stress and intention to quit ($r=0.46$, $p<0.05$)
Siu (2002)	Hong Kong	144 nurses (sample 1) and 114 (sample 2); response rates of 100% and 57%, respectively	Siu and Cooper's (1998) psychological distress scale	Job satisfaction was a significant predictor of absenteeism in sample 1; while no similar result was found in sample 2
Tzeng (2002a)	Taiwan	648 nurses; a response rate of 82%		General job satisfaction was significant predictor of nurses' intention to quit
Yin and Yang (2002)	Taiwan (meta analysis)	129 studies relating to nursing turnover from 1978-1998		The strongest factors related to nurse turnover were job satisfaction, autonomy, opportunities for promotion, job stress, pay group cohesion, marital status and educational level

Source: Lu *et al* (2012) Job satisfaction among hospital nurses revisited: A systematic review. International Journal of Nursing Studies 49, 1017-1038.

A study (Kalisch & Lee, 2014) was carried out to examine the relationship between staffing and job satisfaction of registered nurses (RNs) and nursing assistants (NAs). The previous studies have showed the relationship between the numbers of patients cared for on the last shift and the number of nursing staff during the shift. Further, this also demonstrates the research link with the job satisfaction of registered nurses. The research concludes that mitigating the shortcomings in the number of nurse workers is essential for RN job satisfaction. Moreover, the NA job should be made a more satisfying career (Kalisch *et al.*, 2014).

2.5 Major Policy Enforcements

In 2010, the Chinese government implemented the programs, projects, laws and intervention on nurse department. It includes:

(1) In 2005, the Ministry of Health has announced the implementation of "Chinese nursing career development plan from the year of 2005 to 2010." The main intention is to increase the number of clinical nurses. Training the clinical nurse is:

- a) To make them more specialized
- b) To enhance the quality of nurse care
- c) To develop the care of community
- d) To promote nursing education reform.

(2) In 2008, the State Council has promulgated "the nurse Regulations". It is the first rule concerning legitimate rights and benefits to protect nurses. It is an important measure to promote the nursing career development.

(3) Carry out special activities to promote nursing.

The Ministry of Health carried out a 4-year study since 2005, hospital management activities with the topic of "patient centered in order to improve the quality of medical service" held in 2009 which launched "Medical Quality Milestones" included the indexes of priorities and supervision and inspection indicators. To increased the number of clinical nurses. Improve the care and clinical services.

(4) Inspire nurse team

As of 2009, China has 54 outstanding nurses receiving the Florence Nightingale Medal. The whole society should pay more attention and respect to nursing work.

In conclusion, employee motivation theories include Maslow's theory, Herzberg's two-factor theory, Expectancy theory, Work/life Balance, and Social networks to determine the direction of a person's behavior in an organization and person's level of effort and persistence. The outstanding development of economy and society in China pushes health reforms to occur in order to foster change towards improvement.

2.6 Research Model

Based on those theories, the research model is defined consisting of three parts as follows:

- (1) Individual characteristics
- (2) Intrinsic job characteristics
- (3) Extrinsic job characteristics

From literature review, one can clearly understand that the factors contributing to job satisfaction include individual characteristics, intrinsic job characteristics, and extrinsic job characteristics. At first, individual characteristics play an important role when people form their judgments about their jobs. It is a psychological process where it is well known that cognition and affect are both involved (Judge *et al.*, 2001). Individual characteristics include, age, gender, education do contribute to job satisfaction. The intrinsic job characteristics are achievement and personal growth. The extrinsic elements are salary and working conditions. These three perceptions are relative with job satisfaction, as depicted by Figure 5.

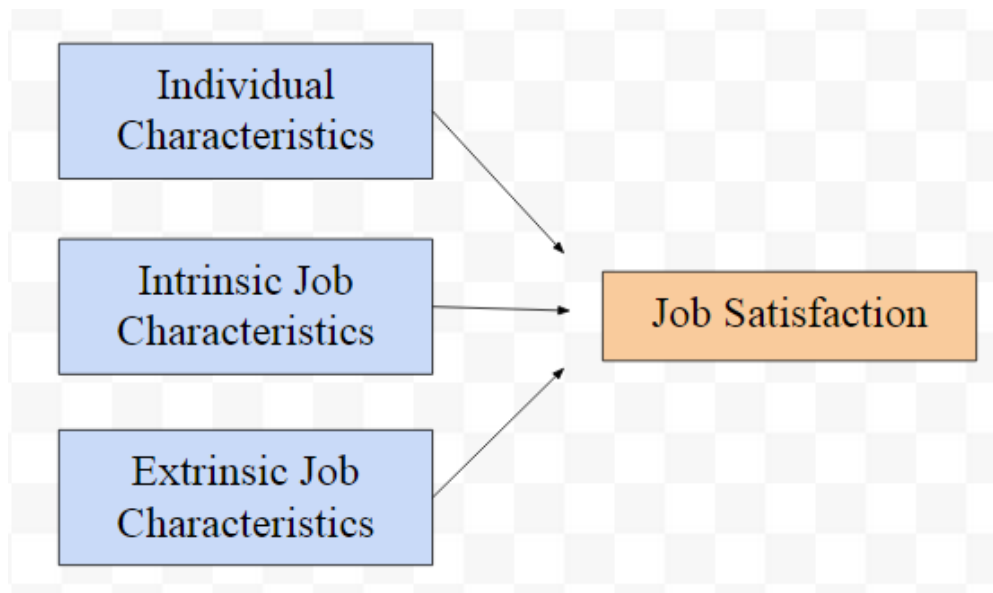


Figure 5. Factors relationship with job satisfaction

2.6.1 Individual Characteristics

Individual characteristics cover intrinsic features of respondents such as age, educational level, and gender. Literature has showed that all of these variables are related with job satisfaction.

People with different ages show different tendency towards their jobs due to different experiences (Tourangeau & Cranley, 2006; Duchscher & Cowin, 2004; Hu Herrick & Allard 2004; Shields & Ward, 2001), while people in diverse educational levels have different knowledge, ability, which leads to variable cognitive trend of their job (Ganzach, 2003). Expertise applied to the management of these patients requires a high level of education and competency (Leary & Oliver, 2010). Regarding gender, research shows that job satisfaction is gender-based. Men are more focused on the extrinsic job characteristics such as salary, where women are more concentrated on intrinsic job characteristics such as job security (Wang *et al.*, 2006). The results show that while the number of men in nursing is increasing, nursing remains to be a position highly dominated by females (Ozdemir, Akansel & Tunk, 2008).

The studies show that nurse job satisfaction is highly related to age (Tourangeau & Cranley, 2006; Duchscher & Cowin, 2004; Hu Herrick & Allard 2004; Shiedls & Ward, 2001). Older nurses are found to be more satisfied with their jobs (Shields & Ward, 2001). Differences in values, goals, priorities, work ethics, and expectations among them are the contributing factors to this (Duchscher & Cowin, 2004; Hu Herrick & Allard, 2004). Thus, it would be valuable to investigate the relationship between age and nurse job satisfaction, positively or negatively.

Hypothesis 1: *There is a positive relationship between nurse job satisfaction and age.*

Nurses with different educational levels may do different works, have different status, and are paid differently. All these may directly affect their job satisfaction. The nurses who hold graduate or post-graduate degree are often less satisfied compared with those holding low educational levels (Ganzach, 2003).

Hypothesis 2: *There is a positive relationship between nurse job satisfaction and*

educational level.

Although gender related hypothesis would be adequate, the Chinese context will make it almost impossible to collect (in the time this research has to be completed) a sufficient male sample to test any comparative analysis between men and women nurses. Therefore, we opted to discard this issue and leave it for future research.

2.6.2 Intrinsic Job Characteristics

Intrinsic job characteristics comprehend elements of job experience such as achievement, feedback, responsibility and autonomy, personal growth, fairness, job security, work value, and cooperation with other departments.

Achievement is one of the main factors people want from their jobs. That means people can get satisfied when they succeed in what they do (Herzberg, 1993) but likewise it is necessary to provide feedback for employees which allow them to know how well they are doing their jobs (Herzberg, 1993). Regardless of the sign of the feedback, positive or negative, it could be influential or non-influential (Watling, Driessen & Lingard, 2012).

Nurses who have achieved higher level of autonomy have reported higher level of job satisfaction (Philip, Paul & Ceri, 1999) which matches also findings concerning opportunity to learn and succeed in job which leads to less job dissatisfaction as found in Agho (1993), Muller-Smith (1999) and Liou *et al.* (1997) studies that found that promotional opportunities, the potential for growth and self-growth lead to a joyful workplace and a strong sense of accomplishment. People consider about not only their own rewards, but also the rewards given for those who perform similar tasks (Ellis & Dick, 2003).

Job security is the major factor of job satisfaction. So it impacts the level of job satisfaction (Boothby & Clements, 2002).

The workers prefer to have a job with more meaning. Higher work value leads to higher job satisfaction (Hackman & Oldham, 1976).

Studies show that when other departments rely on work performed by an employee, higher job satisfaction can be expected; while the employee relies on work flows from other departments, it is negatively related to job satisfaction (Kiggundu, 1983).

All of these intrinsic characteristics seem to operate in a cumulative way, so to reinforce the interaction of variables such as those previewed in Hackman & Oldham's (1976) model.

2.6.3 Extrinsic Job Characteristics

Extrinsic job characteristics comprehend salary, supervision, workload, working conditions, interpersonal relationship, and administration.

Based on Maslow's needs theory, salary is the most basic need of the employees. Liou *et al.* (1997) and Tzeng *et al.* (2002) identify salary as an important aspect for nurse job satisfaction which also included fairness and payment method.

On the other hand, supervision seems to have an important impact. Supervisors should give the employees guidelines and apply the strategies based on their status and responsibilities (Herzberg 1993; Hackman & Oldham, 1976). Nursing supervision is an ongoing systematic process that encourages and supports both professional improvement and administrative practice improvement.

Many studies show that too much workload in hospitals will cause low job satisfaction among the nurses (Dolan *et al.*, 1992). Four main reasons are identified as the root causes behind the higher workloads experienced by the nurses:

- 1) increased demand for nurses
- 2) inadequate supply of nurses
- 3) reduced staffing and increased overtime
- 4) Reduction in patient length of stay

This goes hand in hand with studies on nurse job satisfaction that focused working conditions. Investing in good working conditions in nursing is advantageous for their job satisfaction (Liou, 1997; Agho, 1993; Kangas *et al.*, 1999). This is especially important as in their study, it was found that 37% of the nurses experienced burnout, and 54% were job dissatisfaction. However, the nurses' work environments improvements were associated with 50% increase in their job satisfaction and a 33% decrease in their job-related burnout (Liu *et al.*, 2012).

Interpersonal relationship is crucial nurse job satisfaction. The relationship between doctors, supervisors and colleagues considerably affects nurse job satisfaction (Adams & Bond, 2000). Jones (2007) stressed that there is not too much research in nursing study that discusses interpersonal relationship with nurses.

Administrative nurses have medical, administrative, business and managerial works. The title is registered or practical nurses that have the experience and skills not only to serve the medical needs of their patients, but also to work in a managerial role. Generally, they work to oversee other nurses and to complete administrative duties, such as evaluating and implementing nursing policy, meeting regulatory and compliance requirements, coordinating with staff and ensuring standards of care are met. A nurse administrator creates work schedules, gives performance reviews, and develops work policies, developing new employee training. Agho (1993) maintains that administration is the major determinants of nurse job satisfaction.

Taken intrinsic and extrinsic job characteristics together, we believe intrinsic characteristics are found to be more significant than the extrinsic characteristics, according to the researches on nurse job satisfaction (Ngo & Sansgiry, 2004; Dallender & NolanMental, 2002). Intrinsic job characteristics include achievement, feedback, personal growth, responsibility and fairness. On the other side, extrinsic job characteristics include salary, supervision, workload, working condition and interpersonal relationship. When comparing the intrinsic characteristics impact between younger employees and older employees, it is found that the younger employees are more impacted by it (Moyes, Williams & Koch, 2006). Therefore we hypothesize that:

Hypothesis 3.1: *Intrinsic job characteristics are positively associated with nurse*

job satisfaction.

Hypothesis 3.2: *Extrinsic job characteristics are positively associated with nurse job satisfaction.*

Hypothesis 3.3: *Intrinsic job characteristics are stronger predictors of nurse job satisfaction than extrinsic job characteristics.*

2.7 Hypotheses

Based on the literature review, this study attempts to understand the relationship between nurses' individual characteristics and job satisfaction, and the nurses' perception of intrinsic and extrinsic factors and job satisfaction. Therefore, the hypotheses are developed covering both individual characteristics and intrinsic and extrinsic job characteristics. All in all, the hypotheses are the following:

Hypothesis 1: *There is a positive relationship between nurse job satisfaction and age.*

Hypothesis 2: *There is a positive relationship between nurse job satisfaction and educational level.*

Hypothesis 3.1: *Intrinsic job characteristics are positively associated with nurse job satisfaction.*

Hypothesis 3.2: *Extrinsic job characteristics are positively associated with nurse job satisfaction.*

Hypothesis 3.3: *Intrinsic job characteristics are stronger predictors of nurse job satisfaction than extrinsic job characteristics.*

As a follow-up study, this research adopts the survey strategy and analysis strategy of Wang *et al.* (2006). The hypotheses focus on the relationship among individual characteristics, intrinsic job characteristics, and extrinsic job characteristics.

2.8 Summary

In this Chapter, we reviewed several literatures related to nurse job satisfaction and impact factors. Based on the review, a job satisfaction model is developed to analyze the relationship between job satisfaction and impact factors including individual characteristics, intrinsic factors and extrinsic factors.

Based on literature review we identified five main hypotheses in order to explore job satisfaction among individual characteristics, intrinsic factors, and extrinsic factors. The research focuses on Chinese healthcare system. So we have to consider the effect from the economic, political and social factors of China.

3 Methodology

Based on the literature review and also the situation of Chinese healthcare systems, we selected a sub set of questions from the questionnaire of Wang *et al.* (2006) and sent them out to the respondents.

3.1 The Questionnaire

The questionnaire is a follow-up on the research of main factors influencing nurse job satisfaction (Wang *et al.*, 2006). A questionnaire survey is held as a tool to collect primary data in order to test the hypotheses, because using a questionnaire is the best way for collecting descriptive and explanatory data about opinions, behaviors and attributes, according to Saunders *et al.* (2003). The questionnaire includes demographic data (individual characteristics), intrinsic job characteristics and extrinsic job characteristics. For the part of demographic data, it requires the respondents to fill in their basic information, including age, education background and their general job satisfaction. For the part of intrinsic job characteristics, it includes achievement, feedback, responsibility and autonomy, personal growth, fairness, job security, work value, cooperation with other departments. For the part of extrinsic job characteristics, it includes salary, supervision, workload, working conditions, interpersonal relationship, and administration.

In this section we will present the tests we conducted to verify each measure's validity and reliability.

Technically, a scale's validity can be tested with an exploratory factor analysis where some indices provide information as to its validity such as Keiser-Meyer-Olkin (KMO) measure of sampling adequacy which should be above 0.500 and, cumulatively, Bartlett test via a chi square statistic where a p value below 0.01 means the set of items can proceed to further analysis. The number of factors to extract is judge on the basis of eigenvalue above 1.0, which means the variance the factor explains is more than the average variance of each item. All items with communalities below 0.500 or with crossloadings above 0.400, in the rotated matrix, will be removed from the analysis.

A scale is considered reliable when Cronbach’s alpha reaches 0.70, which is the standard accepted in research. However, given the exploratory nature of this study (mainly due to the sample population being not yet very studied) we may accept as good reliability an alpha of 0.60 (Robinson *et al.*, 1991).

The exploratory factor analysis for the full 10-item intrinsic characteristics subscale showed problems with two items because of low communality. They were removed and a new factor analysis found a valid solution (KMO=0.866, Bartlett $X^2=685.356$; 28, $p<.000$) with a two-factor structure: A first factor, with 5 items and good reliability (Cronbach alpha =0.85), and a second factor, with 3 items but with low reliability level (Cronbach alpha =0.66). Therefore, and considering the exploratory nature of the study, we will keep both factors in further analyses. Considering the nature of the items in the first factor we called it simply “Fulfillment from others” and the second factor is called “Growth-enabling”.

Table 5. Intrinsic - KMO and Bartlett’s test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,866
Approx. Chi-Square		685,356
Bartlett's Test of Sphericity	df	28
	Sig.	,000

Table 6. Intrinsic - Communalities

	Initial	Extraction
I1_SupervisorSupport	1,000	,686
I2_Fullfilment	1,000	,630
I3_RespectColleagues	1,000	,578
I4_SupervisorFeedback	1,000	,715
I5_PatientsFeedback	1,000	,582
I9_JobResponsibility	1,000	,575
I10_Flexib&Independ	1,000	,713
I11_Fairness	1,000	,537

Extraction Method: Principal Component Analysis.

Table 7. Intrinsic - Variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
				Loadings			Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,927	49,083	49,083	3,927	49,083	49,083	3,032	37,904	37,904
2	1,089	13,607	62,690	1,089	13,607	62,690	1,983	24,786	62,690
3	,770	9,629	72,319						
4	,585	7,313	79,632						
5	,511	6,383	86,015						
6	,409	5,109	91,124						
7	,378	4,719	95,843						
8	,333	4,157	100,000						

Extraction Method: Principal Component Analysis.

Table 8. Intrinsic -Rotated component matrix

	Component	
	1	2
I4_SupervisorFeedback	,805	,260
I2_Fullfilment	,794	,026
I1_SupervisorSupport	,764	,319
I5_PatientsFeedback	,736	,202
I3_RespectColleagues	,685	,329
I10_Flexib&Independ	,242	,809
I11_Fairness	,083	,728
I9_JobResponsibility	,309	,692

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

The exploratory factor analysis for the full 10-item extrinsic characteristics subscale showed problems with three items because of low communality and a fourth item that showed *crossloadings*. They were all removed and a new factor analysis found a valid solution (KMO=0.752, Bartlett $X^2=513.338$; 15, $p<.000$) with a two-factor structure: A first factor, with 3 items and good reliability (Cronbach alpha =0.84), and a second factor, with 3 items but with reliability slightly below the standard level (Cronbach

alpha =0.68). Therefore, and considering the exploratory nature of the study, we will keep both factors in further analyses. Considering the nature of the items in the first factor we called it “Social relations” and the second factor is called “Leadership”.

Table 9. Extrinsic - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,752
Approx. Chi-Square		513,338
Bartlett's Test of Sphericity	df	15
	Sig.	,000

Table 10. Extrinsic - Communalities

	Initial	Extraction
E2_Supervision	1,000	,552
E3_MgmStrategy	1,000	,755
E4_HospitalEnvironment	1,000	,589
E8_RelatDoctors	1,000	,801
E9_RelatColleagues	1,000	,819
E10_RelatPatients	1,000	,663

Extraction Method: Principal Component Analysis.

Table 11. Extrinsic - Variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
	Total	% of Variance	Cumulative %	Loadings			Loadings		
				Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,001	50,017	50,017	3,001	50,017	50,017	2,365	39,419	39,419
2	1,179	19,646	69,663	1,179	19,646	69,663	1,815	30,244	69,663
3	,759	12,645	82,308						
4	,439	7,313	89,621						
5	,387	6,444	96,065						
6	,236	3,935	100,000						

Extraction Method: Principal Component Analysis.

Table 12. Extrinsic -Rotated component matrix

	Component	
	1	2
E9_RelatColleagues	,888	,176
E8_RelatDoctors	,873	,198
E10_RelatPatients	,802	,138
E3_MgmStrategy	,185	,849
E2_Supervision	,033	,742
E4_HospitalEnvironment	,369	,673

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 a. Rotation converged in 3 iterations.

Taking into consideration the importance of some extrinsic factors traditionally linked to any motivational research, such as “salary”, “workload” or even “equipment” in professional services, such as nursing, we have decided to treat these separately and include them in further analyses. We believe that the respondents treated these variables in a different way when answering the questions, due to its basic nature in any professional job. To prevent the case where there is variance inflation (multicollinearity) we will include in the regression analysis an indicator of multicollinearity (VIF).

All in all, the measures we used in this study achieve the technical requirements regarding validity and reliability so that we can use them in further analyses.

3.2 The Sample

Most of the respondents are in the south of China in Hunan and Guangdong provinces. The sample was collected through online questionnaire survey. A convenience sampling method is used. We employed a “snow-ball” strategy and asked respondents to forward the link to colleagues and classmates who work in hospitals as nurses to answer the questionnaire and let each of them ask five nurse colleagues or friends to answer the survey. A total of 238 answers were received and 234 were valid. The survey was conducted in August 2014 in two weeks. A pilot test was conducted before in order to check for item quality.

3.3 The Analysis Tool

In this study, the SPSS 19.0 and Excel 2007 were used to analyze the data collected by the questionnaire survey. Namely, we used factor analysis, correlation, descriptives (means and standard deviations), and regression analysis tools as available in this software.

4 Results

The results section will show firstly the sample characterization, the averages and bivariate correlations between all the variables under study and it will finish with the hypotheses test results.

Table 13. Sample description

Individual characteristics	Sample classification	Frequency	Percent %
Age	Up to 20 years-old.	7	2.99
	20-29 y.o.	186	79.49
	30-39 y.o.	33	14.1
	40-49 y.o.	6	2.56
	Over 50 y.o.	2	0.85
Education	Bachelor degree	85	36.32
	Associate degree	133	56.84
	Technical secondary school	13	5.56
	Technical secondary school and below	3	1.28

The number of the total respondents is 234 valid in hospital areas. Nurses aged between 20 and 29 comprise 186 (79.49%); nurses aged between 30 and 39 comprise 33 (14.1%); the number of nurses aged lower 20 year 7 (2.99%) of the respondents; nurses who is 40 and 49 comprise 6 (2.56%) while nurses who is over 50 comprise 2 (0.85). Thus, nurses who aged between 20 and 29 are the major group of this study.

There are 108 (46.15%) respondents live in Hunan Province and 82 (35.04%) respondents live in Guangdong Province while 44 (18.81%) respondents live in other parts of China, for instance, East China, North China, Central China or West-north China.

There are 133 (56.84%) respondents who have associate degree, while 85 (36.32%) respondents have bachelor degree; only 13 (5.56%) respondents have technical secondary school and 3 (1.28%) has technical secondary school and below. Hence, associate degree is the major group of this study.

Table 14. Means, standard deviations and correlations among variables in nurse job satisfaction (N= 234)

Factors	Mean	SD	1	2	3	4
1.Age	2.19	0.56	—			
2.Education	1.72	0.62	-0.105			
3.Job Satisfaction	3.05	0.94	-0.001	0.001		
4.Intrinsic	33.55	3.98	-0.205**	-0.127	0.162*	
5.Extrinsic	25.26	3.05	-0.106	-0.002	0.174**	0.629**

Note: M=Mean; SD=standard deviation

* $p < 0.05$, ** $p < 0.01$

Based on the correlation matrix, age and job satisfaction ($r = -0.001, p > 0.05$) have no significant relationship. The education and job satisfaction ($r = 0.001, p > 0.05$) also have no significant relationship. While there is a positive connection between intrinsic ($r = 0.162^*, p < 0.05$) and extrinsic ($r = 0.174^{**}, p < 0.01$) and job satisfaction.

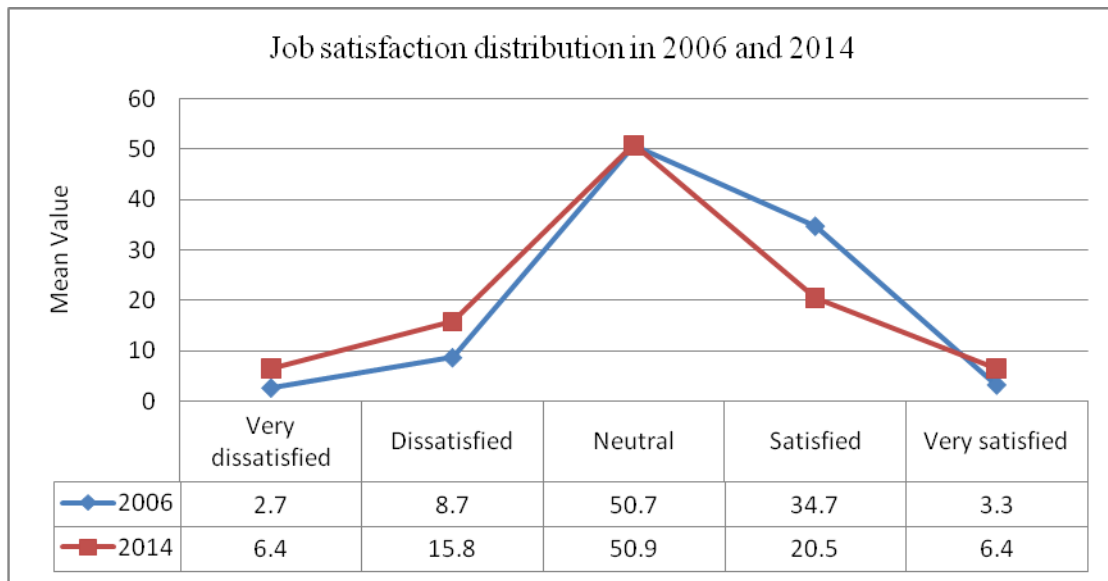


Figure 6. Job satisfaction distribution in 2006 and 2014

Figure 6 indicate that the job satisfaction distribution in 2006 and 2014, the trend is, increasing mean value from very dissatisfied up to neutral. While, after neutral from satisfied and very satisfied, it is decreasing. In 2006, for very dissatisfied has the mean value of 2.7 and for dissatisfied has 8.7, while for neutral has significantly increasing (50.7) respectively. For satisfied has 34.7, only 3.3 has very satisfied. In 2014, for very dissatisfied has 6.4 and for dissatisfied has 15.8, after the neutral 50.9 has 20.5 satisfied and has 6.4 has very satisfied. Hence, the big difference between

2006 and 2014 is ‘satisfied’ mean value from 34.7 (2006) decreasing to 20.5 (2014).

Hypothesis 1

H1: There is a positive relationship between nurse job satisfaction and age.

A linear regression analysis with age as a predictor and job satisfaction as a criterion variable showed a non significant beta of $-.001$ ($p=0.983$) thus offering no support to H1.

Table 15. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3,049	,247		12,345	,000
Age	-.001	,109	-.001	-.008	,993

a. Dependent Variable: Job_Satisfaction

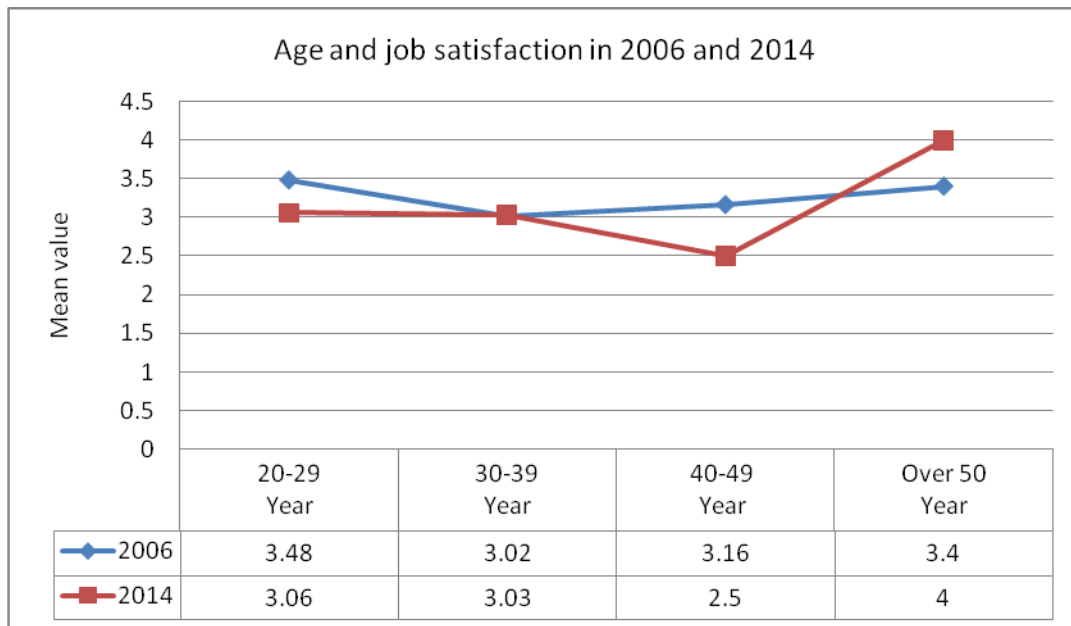


Figure 7. Age and job satisfaction in 2006 and 2014

Figure 7 shows that the job satisfaction and age in 2006 and 2014 the trend is from the age group of 40 and 49 become increasing. In 2006, the age group of 20-29 mean value is 3.48, in the group of 30-39 is 3.02, while for the age group of 40-49 is 3.16 and over 50 is 3.4. Hence, in 2006, age and job satisfaction trend is decreasing. In

2014, the age group of lower 20 is 2.86, the age group of 20 and 29 is 3.06, the age group of 30-39 is similar has 3.03. Only 2.5 is in the age group of 40-49, while in the age group of over 50 the mean value is 4. Hence, the big difference between 2006 and 2014 is in the age group of 40-49, the mean value is from 3.16 (2006) decrease to 2.5 (2014).

Hypothesis 2

H2: There is positive relationship between nurse job satisfaction and educational level

A linear regression analysis with educational level as a predictor and job satisfaction as a criterion variable showed a non significant beta of .001 (p=0.991) thus offering no support to H2.

Table 16. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3,045	,180		16,961	,000
Education	,001	,098	,001	,011	,991

a. Dependent Variable: Job_Satisfaction

Based on the education level in 2014 technical secondary school (M= 3.15), technical secondary school and below (M= 3.33); while in 2006 the diploma (M= 3.24). We are chosen the average mean value of technical secondary school and technical secondary school and below (M= 3.24), also called diploma.

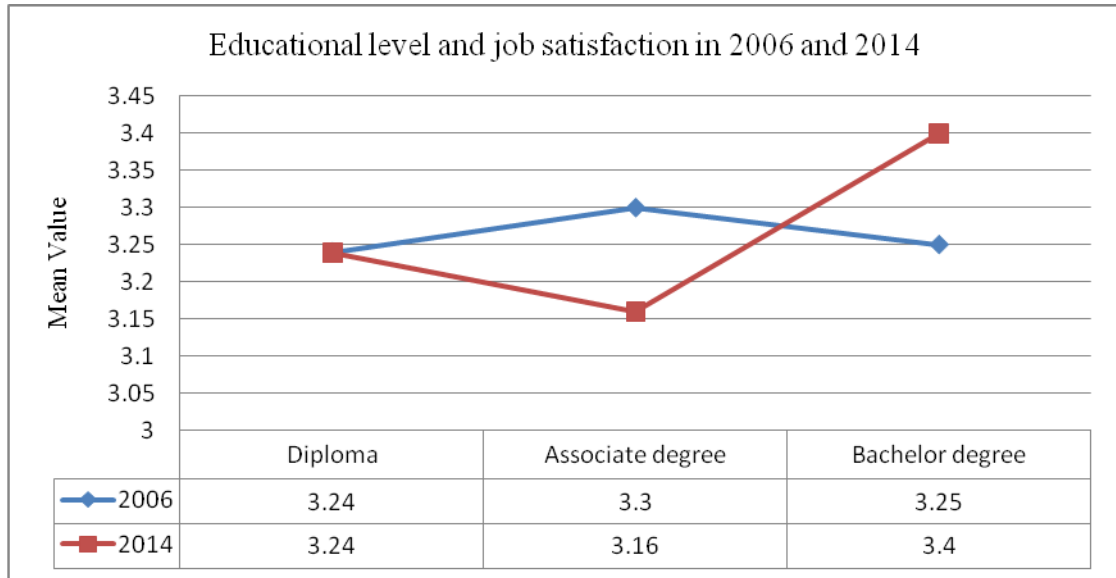


Figure 8. Educational level and job satisfaction in 2006 and 2014

Figure 8 indicates that the trend of 2006 and 2014 is different. In 2006, those with diploma have a job satisfaction mean value of 3.24, and those with an associate degree have 3.3. Moreover, those with a bachelor degree have a job satisfaction mean value of 3.25. In 2014, those with a diploma showed a job satisfaction mean value of 3.24, those with an associate degree have 3.16, and those with a bachelor degree have 3.4. Hence, the difference between 2006 and 2014 is that for the associate degree, the mean value decreased from 3.3 in 2006 to 3.16 in 2014, while for the bachelor degree, it increased from 3.25 in 2006 to 3.4 in 2014.

Hypothesis 3

Hypothesis 3.1: *Intrinsic job characteristics are positively associated with nurse job satisfaction.*

Hypothesis 3.2: *Extrinsic job characteristics are positively associated with nurse job satisfaction.*

Hypothesis 3.3: *Intrinsic job characteristics are stronger predictors of nurse job satisfaction than extrinsic job characteristics.*

A linear regression analysis with intrinsic and extrinsic job characteristics as predictors and job satisfaction as a criterion variable showed a significant model explaining 13.7% variance (R^2 adjusted) with the following predictors:

Fulfillment_from_others (Beta=0.195; p=.011); Leadership (Beta=0.210, p=.007); E1_Salary (Beta= -0.187, p=.007); Workload (Beta=- 0.272, p=.001), and Equipments (Beta= 0.176, p=.032). These are all significant for a p < .05 which means that H3.1 is fully accepted in the case of “Fulfillment_from_others” dimension. H3.2 is partially accepted because both Leadership and Equipments have positive betas, but Salary and Workload showed negative betas. H3.3 is not accepted as the cumulative global effect size of extrinsic is higher than the intrinsic.

Table 17. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,404 ^a	,163	,137	,870

a. Predictors: (Constant), E6_Equipments, E1_Salary, IntF1_Fulfillment_from_others, E5_Workload, ExtF2_Leadership, ExtF1_Social_Relations, IntF2_Growth_enabling

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
	(Constant)	2,362	,582				
IntF1_Fulfillment_from_others	,312	,122	,195	2,554	,011	,638	1,567
IntF2_Growth_enabling	,031	,154	,017	,198	,843	,495	2,019
ExtF1_Social_Relations	-,077	,124	-,050	-,617	,538	,566	1,766
ExtF2_Leadership	,331	,123	,210	2,700	,007	,610	1,639
E1_Salary	-,269	,098	-,187	-2,744	,007	,798	1,253
E5_Workload	-,346	,099	-,272	-3,492	,001	,611	1,638
E6_Equipments	,219	,101	,176	2,160	,032	,555	1,802

a. Dependent Variable: Job_Satisfaction

The situations where the higher the importance given to the factors, the higher the job satisfaction concern the intrinsic factor (fulfillment from others), the extrinsic factor “leadership” and extrinsic item “equipment”. This means that the nurses that give more importance to these predictors are those who will react better to any investment in this domain. On the contrary, the situations where the relation is negative imply that there is a more sensible issue that can be preventing the hospitals from achieving high level of satisfaction, namely, salary and workload.

The more the individuals care about salary level and workload, the worst is their job satisfaction mostly because they might wish to earn more money and / or work less. However, if they also care about getting recognition from others (fulfillment) and acknowledge the equipment as an important element in their job, and see leadership as a positive contribute, the satisfaction will go up even if salary/workload does not match their expectations,

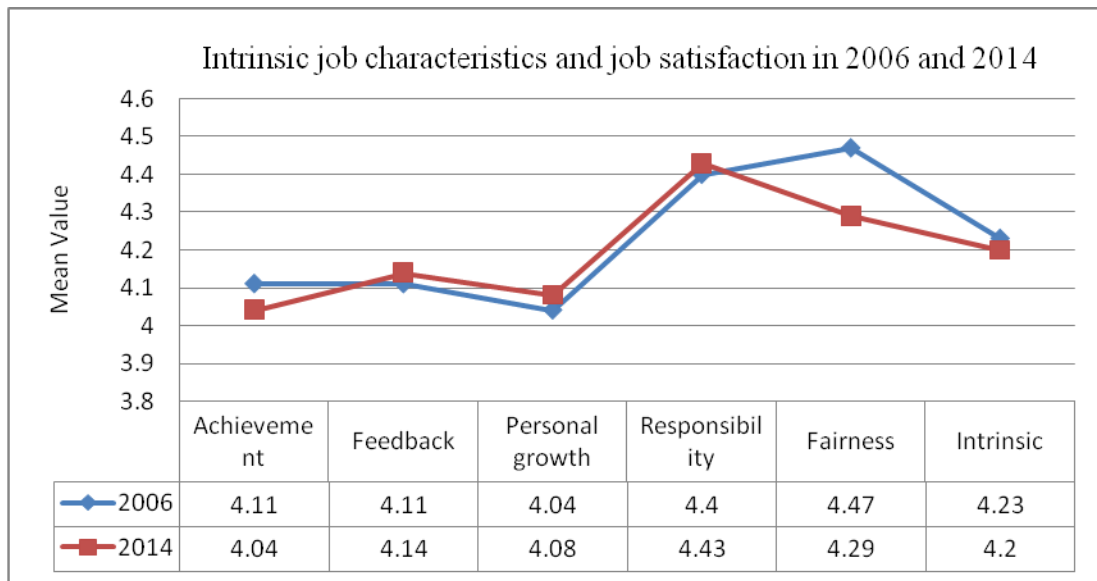


Figure 9. Intrinsic job characteristics and job satisfaction in 2006 and 2014

Figure 9 shows the relationship between the intrinsic job characteristics and job satisfaction in 2006 and 2014. In 2006, there are 4.11 achievements, 4.11 feedback, 4.04 personal growth, 4.4 responsibility, 4.47 fairness and 4.23 intrinsic. Moreover, there are 4.04 achievements, 4.14 feedback, 4.08 personal growth, 4.43 responsibility, 4.29 fairness and 4.2 intrinsic. Hence, the difference between them is fairness from 4.47 decreased to 4.29.

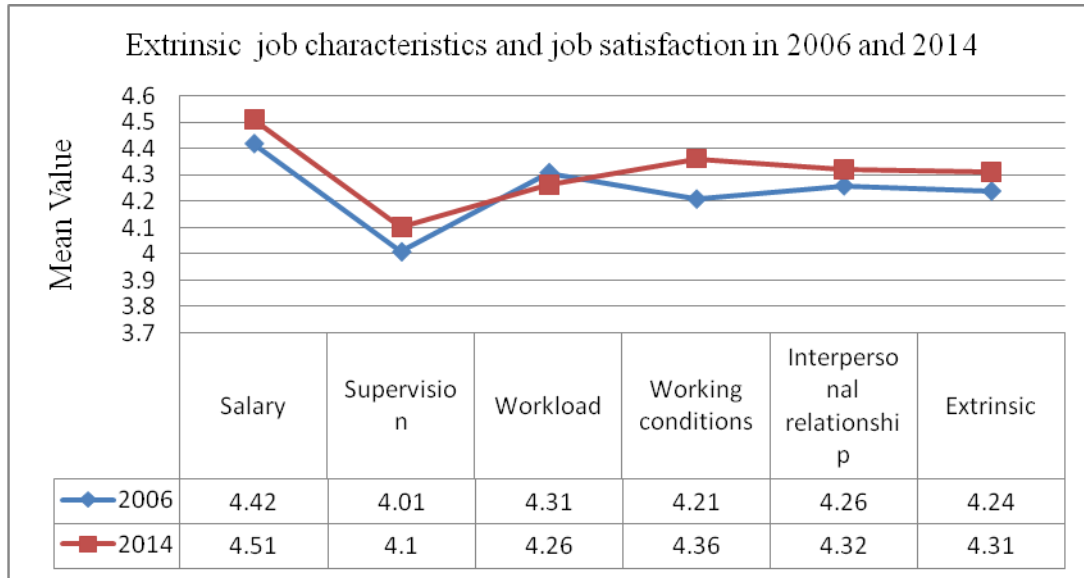


Figure 10. Extrinsic job characteristics and job satisfaction in 2006 and 2014

Figure 10 indicates the relationship between the extrinsic job characteristics and job satisfaction in 2006 and 2014. In 2006, there are 4.42 salary, 4.01 supervision, 4.31 workload, 4.21 working conditions, 4.26 interpersonal relationship and 4.24 extrinsic. Moreover, there are 4.51 salary, 4.1 supervision, 4.26 workload, 4.36 working conditions, 4.32 interpersonal relationship and 4.31 extrinsic. Hence, the difference between them is except the workload is decreased from 2006 to 2014. While others extrinsic factors are increasing from 2006 to 2014.

Table 18. Summary of hypotheses results

	Hypotheses	Rejected / Accepted
1	There is a positive relationship between nurse job Satisfaction and age.	Rejected
2	There is a positive relationship between nurse job satisfaction and educational level.	Rejected
3.1	Intrinsic job characteristics are positively associated with nurse job satisfaction.	Accepted
3.2	Extrinsic job characteristics are positively associated with nurse job satisfaction.	Partially accepted
3.3	Intrinsic job characteristics are stronger predictors of nurse job satisfaction than extrinsic job characteristics.	Rejected

5 Discussion and Conclusion

There are many researches on the main factors influencing nurse job satisfaction. This study follows the research hypotheses and questionnaire proposed by Wang *et al* (2006) in order to explore the main factors influencing nurse job satisfaction.

The results show that age is not associated with nurse job satisfaction (Table 15). The Hypothesis 1 is thus rejected. However, if we segment the sample in the age groups, we can see that job satisfaction level of nurses who aged over 50 is the highest. The reasons may be that they are much experienced than younger nurses, and they receive much respect from patients than younger. Moreover, nurses over 50 are head nurses, as they are often highly experienced in their work and promoted as the head nurses. Hence, their workload is not as heavy as younger nurses. Nevertheless, in 2014, age group of 40 – 49 showed a much lower job satisfaction. In addition, the result of job satisfaction in 30-39 age groups remains almost constant among 2006 and 2014. Hence, in China there might be a relation between age and job satisfaction that doesn't have a linear nature.

The results show that the education hasn't an impact on nurse job satisfaction (Table 16). The Hypothesis 2 is also rejected, which means there is no positive linear relationship between education and job satisfaction. The group of nurses who have the technical secondary school and below degree has the highest satisfaction level. The following is the group of nurses who have technical secondary school degree. The third position is the bachelor group while the group of nurses who have associate degree has the lowest job satisfaction level. Because the nurses who have higher education background are doing similar job as the nurses who have lower education level and the former have the same treatment as the latter. This makes the higher educated nurses feel that they are not fully employing their high education, which lowers their job satisfaction.

Regarding H3.1 is fully accepted in the case of "Fulfillment from others" dimension. H3.2 is partially accepted because both Leadership and Equipments have positive betas, but Salary and Workload showed negative betas. H3.3 is rejected as the cumulative global effect size of extrinsic is higher than the intrinsic (Table 17, Table 18). Firstly, because of the nurse's workload, they are expected to pay more. Then the

extrinsic factor of salary account for a large proportion. Secondly, the support and feedback of the manager give more, it is more satisfaction. Moreover, a vast majority of hospital environments in China are not well maintained, which effectively lead to nurses paying more attention on the working conditions. Health care shortage should be addressed, with an increase in the healthcare market.

The discussion section will now continue focusing on each of our research goals.

5.1 Nurse Job Satisfaction Level

The main nurse job satisfaction level is neutral (Figure 6). The reason for it, on the one side, is that nursing profession has a certain social status; it can bring benefits to the family. Meanwhile, although the domestic graduate's employment in China is difficult, for Chinese's nurses there is a shortage of offer, and therefore, it is quite easy to get a job. On the other hand, the high workload with low salary and the pressure of doctor-patient relations with a lot of night shift pushes people away of this profession. Moreover, the shortage of nurses also puts pressure upon nurses to work a lot and hard which ultimately will make them feel dissatisfied. Taken all these factors together, one can understand that, in general, the nurse job satisfaction level is neutral. While compared with 2006, in 2014 the satisfied level is decreased. Compared to nurse's work before it would be easier. It is a simple care, and the work is not so heavy. The nurse's status is respected by patients. Nowadays, a lot of doctor-patient interactions happen and the status of nurses in the society has appeared to be lowered. Further higher workload, higher social responsibility and lower job security are observed compared to earlier years. In addition, the nurses need to complete the labor of duty, have to deal with various complaints, and attempt multiple examinations. The clinical documentations to be managed by nurses are also getting more and more complicated. Compared with before, the percentage of nurses reported to have a satisfied level in job satisfaction is decreased.

5.2 Factors Influencing Nurse Job Satisfaction

5.2.1 Age and Education

Considering age and nurse job satisfaction (Figure 7), compared with 2006, the 20-29 and 40-49 years old nurse job satisfaction is lower. In 2006, the age 20-29 had the highest nurse job satisfaction. The reason for it is that nurses of this age group

perceive a fair and favorable treatment with a shared responsibility (Wang *et al.*, 2006). While, in 2014, In 20-29 age group's nurses is the worst. After they graduated from school they need to adapt from learning situations to real work environment. At the same time, they also need to work a lot in night shifts with the respective workload. On the other hand, they are subjected to many exams and tests covering not only practice but also text knowledge, which implies time to research.

In 2006, the age 40-49 had the higher nurse job satisfaction than the year of 2014. The reasons for the high job satisfaction in 2006 are, workload of the nurses was not high enough to affect their job satisfaction, and since they mostly already had reached a certain level of economic stability in their life, the influence of salary was not significant (Wang *et al.*, 2006). There have been considerable changes in China regarding the policies corresponding to the nurses, after 2006. As of 2014, nurses of the age group of 40 – 49 are moving away of direct clinical contact with patients, focusing more on office work. They also need to face examinations and have to handle more complicated reporting compared to 2006. So the nurses need to adapt to the new changes and challenges in their job, as they are promoted as senior nurses during this age group. These job changes are not easy as they have to regain their social network within the work context and revise the way they have learned how to proceed and work. Moreover, in order to fully adapt to the new position, they need to cope with the new compensation, relationships and work environment. Those who cannot adapt face the challenge of being laid off. These could be stated as the reason behind the reduced job satisfaction of the nurses of age group 40 – 49 in 2014.

Considering the educational level and nurse job satisfaction (Figure 8), compared with 2006, one can see that the educational level of associate degree nurses job satisfaction has decreased while bachelor degree has increased. In 2006, the associate degree had the nurse job satisfaction higher than the bachelor degree. After graduating from the University, nurses holding undergraduate degrees expect high salaries and work responsibilities . However in China, all the nurses perform same tasks and receive the same entry level salary, regardless of their education level. Therefore, nurses with a university degree feel unfair (Wang *et al.*, 2006). In addition, associated degree nurses accounted for the majority, with bachelor degree nurses being a minority. In such a

situation, bachelor degree nurses will not have a challenging work environment that is suitable for learning; it also makes them more dissatisfied (Wang *et al.*, 2006).

Based on “Outline of the Development Plan of Nursing Service in P.R. China 2005-2010 ” (MoH 2005) and a total of 192 bachelor degree nursing program, the nurses students all over the country were more than 20,000 (Zheng 2009). Therefore since 2009 has a lot of nursing bachelor degree graduation, there is a strong competition for the associate degree. Combined with associate degree, their work level is similar while the bachelor degree compensation and qualification is higher than the associate degree. In a word, the bachelor degree nurses satisfaction is higher and it is produced by a conflict for associate degree nurses.

5.2.2 Intrinsic Job Characteristics and Job Satisfaction

Table 19. Intrinsic job characteristics and job satisfaction in 2006 and 2014

Factors		2006	2014
		Mean value	Mean value
Intrinsic	Achievement	4.11	4.04
	Feedback	4.11	4.14
	Personal growth	4.03	4.08
	Responsibility	4.39	4.43
	Fairness	4.47	4.29
	Average	4.22	4.20

The intrinsic job characteristics in 2006 and 2014, both of responsibility and fairness have higher mean value for the nurse job satisfaction. The intrinsic job characteristics average mean value in both years is similar.

5.2.3 Extrinsic Job Characteristics and Job Satisfaction

The extrinsic job characteristics in 2006 and 2014, both of salary and interpersonal relationship have higher mean value for the nurse job satisfaction. Meanwhile, in 2006 the workload is high, on the other hand, in 2014, the working conditions is also high. The extrinsic job characteristics average mean value in 2014 is higher than 2006.

Table 20. Extrinsic job characteristics and job satisfaction in 2006 and 2014

Factors		2006	2014
		Mean value	Mean value
Extrinsic	Salary	4.41	4.51
	Supervision	4.00	4.10
	Workload	4.31	4.26
	Working conditions	4.21	4.38
	Interpersonal relationship	4.26	4.32
	Average	4.24	4.31

5.3 Management Implications

The result of this study can make a contribution to the real world, especially for the managers in healthcare industry to further improve the job satisfaction of nurses. Here are some suggestions, based on the findings of this research and the literature review:

1. According to Maslow's need classification scheme, basic needs are identified as being at the core level in the hierarchy of needs. Hence, improving nurse welfare is a suggestion to managers. It is not only a way of encouragement, but also a way to recognize nurses' work. As the work schedule of nurses is implemented by the way of three shifts, this may not only affect the lifestyle and health of nurses, but also the life of their family. Therefore, in order to improve nurses' job satisfaction, managers should focus on improving the welfare of nurses, especially the night shift nurses' welfare. This in turn will reduce the turnover of the nurses and retain talented nursing staff in each department. On the other hand, it is suggested to focus on achieving work-life balance for the nurses.
2. Extrinsic job characteristics are very important. A bad working environment will lead to two outcomes. One is nurses being not confident on their hospital, so they are not willing to recommend the hospital they work in to their family and friends, which may hurt the hospital's reputation. Another situation is that, bad working environment will stress nurses, which will lower their job satisfaction, and increase their turnover intention.

3. Using the grading management is highly recommended. It is a method for dividing nurses into clinical nurse specialist, and charge nurses. The definition of clinical nurse specialist is to prepare advanced practice nurses at the graduate level. Clinical nurse specialists are the nurses who had received an advance nurse practice at the graduate level. The definition of the charge nurses is those who are assigned to manage the operation of the patient care area for the work shift. Responsibilities include staffing, recruitment, discharge, and coordinating activities in the field of patient care.

The goal is to make nurses understand their individual responsibility much clearly, so that they can perform better in the decision-making process. Moreover, this method can clarify the responsibility of each nurse department. Due to this method, the task allocated to each nurse is much more clear and aimed, so that each kind of nurses know what they should do, and they can be more specialized on their field. All in all, the grading management can offer a much specialized and deeper development of career to nurse.

4. Managers also can implement professional training. They can divide the nurses into different groups based on the differences of age, education level and professional classification (specialist nurses, responsibility nurses and senior nurses), and provide corresponding professional training to specific groups, in order to improve their professional skills. Moreover, in addition to the professional training, managers can encourage nurses to self-study, and provide various channels to nurses, for them to participate in different professional activities, and offer the chance for further studies. Effective use of social network may be advantageous in self studies and communication among the nurses through the relevant special interest groups in the social network. In this way, nurses can motivated to self-improve which in turn will lead them to a higher status in the society.

5.4 Conclusion

In conclusion, a few changes were observed among the influencing factors to nurse job satisfaction in China in 2006 and 2014. Notably, in 2006, the main factors influencing nurse job satisfaction were fairness, salary and responsibility. However, in 2014, the main factors influencing nurse job satisfaction were salary, workload, getting recognition from others (fulfillment), equipment as an important element in

their job, and leadership. The major reason for these observed changes could be stated as the Chinese policy proposals. Moreover, the higher pressure in the work environment can be attributed to the expectation and hope of the nurses on earning more and saving for the future.

6 Limitation and Further Research

6.1 Limitation

Because convenient sampling is used to collect the data, the distribution of samples is not comprehensive, thus the representative of the result is uncertain. The questionnaires were spread through the Internet, which comparing to the face to face survey makes it harder to control the quality of answer received from respondents.

6.2 Further Research

It is worth to study the influence of gender on the nurse occupational stereotypes because more and more male nurses appear in hospitals. Organizational culture of nurse department is also worth to study. To improve nurses' job satisfaction, developing a much more perfect and fair performance management system would be a very good field to study. Considering the special conditions in which nurses must work, namely the three shifts, it may be of interest to study its impact on nurses' health and personal life, as well as the effectiveness of putting into practice a police that favors flexible shifts for nurses in order to improve their life quality. Moreover, there is room for further research focusing the impact of nurses in the doctor-patient relationship.

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- 2 上级的认同和肯定
- 3 同事的尊重
- 4 上级对你工作的反馈
- 5 病人对你工作的反馈
- 6 晋升职务和职称
- 7 继续培训教育的机会
- 8 自我的事业发展
- 9 工作责任
- 10 工作自主性和独立性
- 11 公平感
- 12 工资
- 13 医院对你工作的监管
- 14 医院的管理战略

15 医院整体的氛围

16 工作量

17 仪器设置和使用

18 工作的风险程度

19 与医生的关系

20 与同事的关系

21 与病人的关系

Questionnaire in English

ISCTE Business School, Lisbon Nurse Job Satisfaction Survey

Thank you very much to participation our nurse job satisfaction survey. The questionnaire is comprised of 24 questions, please answer all of them. It will take you approximately 3 minutes to complete the questionnaire.

Thanks in advance.

Year of birth: Lower 20 years 20-29 years 30-39 years
 40-49 years Over 50 years

Education: Bachelor degree Associate degree
 Technical secondary school Technical secondary school and below

Job satisfaction: Very dissatisfied Dissatisfied Neutral
 Satisfied Very satisfied

To what extent are the following factors important to your job satisfaction? Please select a number (make a “√”), using the 5 point scale ranging from 1 (Very dissatisfied), 3 (Neutral), to 5 (Very satisfied).

No Factors:	1	2	3	4	5
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|---|-------------------------|--|--|--|--|
| 1 | Fulfillment | | | | |
| 2 | Supervisor support | | | | |
| 3 | Respect from colleagues | | | | |

- 4 Supervisors feedback
- 5 Patients Feedback
- 6 Promotion
- 7 Further educational opportunities
- 8 Career development
- 9 Job responsibility
- 10 Flexibility and independence
- 11 Fairness
- 12 Salary
- 13 Supervision
- 14 Management strategy
- 15 Hospital environment
- 16 Workload
- 17 Hospital equipment

18 Job security

19 Relationship with doctors

20 Relationship with colleagues

21 Relationship with patients
