

科技部補助專題研究計畫報告

不同性別護理師之職涯發展軌跡與留任意願研究：一項三年期 縱貫性研究

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本研究具有政策應用參考價值：否 是，建議提供機關衛生福利部
(勾選「是」者，請列舉建議可提供施政參考之業務主管機關)
本研究具影響公共利益之重大發現：否 是

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中文摘要：背景：護理人力的留任與形象的轉型（改變性別刻板印象）一直是護理國際社會的重要議題；然而有關兩性護理師之職涯發展軌跡、留任意願及其影響因素仍存研究的空間。本研究為一項三階段的研究系列，第一階段為完成本研究所需之量表，本研究團隊已完成四份量表（兩份翻譯量表（「工作—家庭衝突量表」與「職業發展滿意度量表」）與兩份自擬量表（「職業發展的助力及阻力因素問卷」與「護理能力量表」）的發展與測試。至於本年研究則為此計畫系列之第二階段，採整體性觀點，從個人、家庭、社會等層面探討兩性護理師在NPGY2剛完訓（T0）時，職涯發展與留任意願之影響因素，研究的主題與目的則請見下。

目的：本年之研究目的主要有二：1. 瞭解不同性別的護理師在完成NPGY2訓練後的職業生涯發展狀況；2. 以生態模式為理論基礎（從個人、微視系統、中間系統、外部系統與鉅視系統），檢視與比較完訓時（T0），影響女性與男性護理師職業生涯發展（職涯成長）與留任意願之因素。

研究方法：本研究為此系列性研究之第二階段，採橫斷性研究設計；以問卷針對經立意取樣之144位NPGY2完訓之護理師（男女性各72名）進行資料收集。

結果：整體而言，本研究結果發現五年後男性較女性有高的意願朝向主管或專科護理師發展；女性則較男性願意選擇擔任護理師。此外，性別比較分析發現對男性護理師而言：工作生活品質是職涯發展與留任意願的共同影響因素，而專業承諾亦會影響其職涯發展。而對女性護理師而言，與男性相同發現是工作生活品質亦是其職涯發展與留任意願的共同影響因素。但不同的是：除工作生活品質因素外，影響女性護理師職業發展的因素尚有工作單位；而其他顯著影響女性留任意願的因素則是教育程度、年齡、專業承諾與堅韌性四個因素。

結論：由於本研究之時間點（T0）與採立意選樣之故，本研究尚無法顯示不同性別護理師之職涯發展軌跡與留任意願變化，但已發現對兩性而言影響因素確有所不同。未來如欲探討兩性護理師在進入臨床護理後之第一個五年的職涯發展軌跡與留任意願變化，本研究結果則提供了作為後續追蹤之比較基準；且對未來研究建議採追蹤式研究設計，唯有如此，方能有一較長期及全面的認識。

中文關鍵詞：護理師、性別比較、職涯發展軌跡、留任意願、生態模式

英文摘要：Background.

For decades, how to improve nurses' intention to stay and to transform nursing image (changing gender stereotype) are important issues in the world r. However, there was a room to understand both male and female nurses' career development trajectory and intention to stay and further examine their influencing factors. In this three-stage serial study, at Stage 1, we completed four scales development and validation (two translated scales: "Work-Home conflict scale" and "The Career Satisfaction Scale" (CSS), and two self-developed instruments: "The Scale of Support and Barriers in Work" and "The Scale of Nursing

Competence). At Stage 2 (i.e. this year study), we adopted a holistic view to examine two gender nurses' career development (career growth), intention to stay and their influencing factors at the time T0 (who completed NPGY2 training program).

Purpose.

In this study, two main purposes were as follow.

1. To understand career development (career growth) and intention of stay for both gender nurses at completing the NPGY2 training program (T0).
2. We adopted the ecological model as the theory base (from a wide range of perspectives, including individual, micro-, meso-, exo-, and macro-system) to examine and compare factors influencing both gender nurses' career development (career growth) and intention to stay.

Method.

A total of 144 nurses (72 female and 72 male nurses) were selected by a purposive sampling method participated in this study. Questionnaires were used to collected data.

Results.

Overall, the findings revealed that male nurses tended to be nursing administrator and nurse practitioner (NP) whereas female nurses tended to be nurse staff after five years later. Furthermore, gender comparison revealed that for male nurses, work-related quality of life was a common influencing factor for both career development (growth) and intention to stay. Nursing professional commitment also affected male nurses' career development. For female nurses, same as male nurses, work-related quality of life was also significantly influenced female nurses' career development and intention to stay. However, gender differences found that work unit was related to female nurses' career development (career growth); while education level, age, professional commitment and resilience significant affected female nurses' intention to stay.

Conclusion.

Because of the time point (T0) and a positive purposive sampling method used, the findings of this study could not reveal the change of career development trajectory and intention to stay over time. However, our study support that there are differences in influencing factors between two gender nurses. In future, our findings could be a basis line to continuously follow up and compare both gender nurses' career development trajectory and intention to stay within the first-five year. A longitudinal research design is recommended to get a longer-term and whole picture.

英文關鍵詞：nurses, gender comparison, career development trajectory,
intention to stay, the ecological model

Introduction

Today, high nursing turnover rate is a serious problem in the world because which represents a major problem for health care service in terms of cost and quality of care given. For decades the nursing community all over the world has been focusing to better improve the intention to stay for nurses and to minimize certain stereotype against gender differences in nursing career. On average, male nurses' turnover rate is twice that of female nurses, and generally speaking, they change professions within 4 years of starting their nursing careers (Duffin, 2006; Evans, 2002). One of main reason is gender role stereotypes regarding occupations remain even in developed nations. It is assumed that females should have a "woman's job" and males should have a "man's job" (Sherrod et al., 2005). Actually, men are now more and more entering the nursing profession in record numbers, challenging the notion that men are inappropriate in caregiver roles or incapable of providing compassionate and sensitive care (Evans, 2002). Gender bias in nursing education impedes recruitment and retention of males into the profession. Nurse educators and administrators must be aware of both gender nurses' contributions to the profession and must prevent gender bias (Anthony, 2004). Therefore, how to promote nurses (females and males) nursing career development and then to stay in nursing job are important that still need pay highly attention and also to be challenged.

For there is lacking studies to examine career development and the intention to stay simultaneously, particularly using a longitudinal research design. Thus, in our study, we adopted a prospective longitudinal research design to observe the changes of career development trajectory and the rate of intention of stay. And more important, we were examined the similarity and difference between female and male nurses. Also, our findings helped out in changing traditional stereotypes, developing positive nursing image and correct perspectives for nurses, as well as developing gender-driven learning style.

Literature review

Career development and the intention to stay for two gender nurses

For a few studies to examine career development and the intention to stay simultaneously, most of them conducted a qualitative research design or quantitative research design but with a cross-sectional research design as well as with a limited sample size. For the only few longitudinal research, Abrahamsen (2004) conducted a retrospective longitudinal research (from 1977 to 1998) data among 1450 nurses based on a Norwegian Survey of Nurses. In Abrahamsen's (2004) study, the main purposes were to examine nurses' mobility process, differences and similarities in position and fields of activity, working hours and income and also to identify constructions of masculinities of male nurses. Abrahamsen found large changes occurred during the career. For female nurses, almost all of them (90%) chose the somatic ward for their first job notably higher than that of men. Most (more than 70%) male nurses went into somatic wards after completed training, only a very few went into psychiatry. Most noticeable is the fact that male nurses rapidly leave somatic wards and go into other fields psychiatry is one of these fields. Even though it is just as normal for men and woman go to work in the somatic wards, it does not mean that they undertake the same jobs.

Because Abrahamsen found that male nurses went into administration and leadership while the women undertake tasks more closely related to the patients. Additionally, the number of male nursing practitioners (NPs) was increasing to double from 2012 to 2017 in Taiwan (Gender Equality Committee of the Executive Yuan, 2017).

Abrahamsen also looked at the relationships between time factor and administration work, they found there is little difference between men and women during the first year. However, till four to five years later, more than half of the male nurses have acquired positions of leadership. Conversely, only 20% of the women are in similar positions. As to Working hours and income, Abrahamsen's study showed that most of the female nurses (almost 90%) start their career working full time but the hours reduced along the work years. For example, five years later, 50% of female nurses work reduced hours becoming part time. Conversely, for male nurses, very few male nurses work part time (about 5%). For the mean income, male nurses' salary was significant higher than female, however the reasons are related to work type (full time or part time work).

For male nurses, while they enter the nursing field, they tend to face conflict from their own and others' views on masculinity. Newly qualified male nurses tend to experience expectations of traditional masculinity. After a short time in the nursing profession, questions were being raised concerning their choice of occupation and further career development (Abrahamsen, 2004). The pattern of career changes for nurses has been recognized in several countries including Taiwan. For example, Lai et al. (2008) employed a cross-sectional research design with 130 nurses recruited from ICUs to understand their intention to leave their job and to examine the factors associated with this intention.

In Lai et al. (2008) study, near a half (48.9%, n=63) revealed an intention to leave their jobs. Eight variables (self-rated health status, the number of diseases, the level of happiness, the presence of depression, job satisfaction, sleep quality, type of license and their unit) were significantly associated with the intention to leave. But interestingly, Chen et al. (2012) found different findings, male nurses may have a more difficult time than female nurses finding jobs but yet they tend to obtain higher prestige jobs. Similar findings were found in Abrahamsen (2004) study. In Abrahamsen's study, three aspects of masculinity processes for career development for male nurses: "escaping from the bodies", "leadership" and "the breadwinner role" were defined. Following nurses over a long period of their occupational career, leadership and the breadwinner role emerge as important factors in male nurses' construction of masculinities. Abrahamsen (2004) indicated that far more male nurses than female nurses have positions of leadership in the nursing fields. The nursing occupation seems to emerge an underlying phenomenon which is extraordinary possibilities for men who seek upward mobility quickly (Abrahamsen, 2004). Additionally, for male nurse study, it is widely known that male nurses are working within limited units such as psychiatry, administration, acute medicine (emergent room), OR, etc. (Abrahamsen, 2004). Yang et al. (2004) investigated professional career development for male nurses in Taiwan including male nurses' motivations for becoming a nurse; their professional developmental process in nursing; the difficulties hindering their

professional development from both professional and gender aspects; and the strategies who used to cope with these difficulties.

In our study, several questions were expectedly answered. Including whether and what differences in choosing work unit (e.g. specialty choice and change, job change), job promotion (both in formal position and professional competencies), perceived support & barriers at work, career growth or advancement, satisfaction with career, and the intention to stay between female and male nurses? Thus, we adopted a prospective longitudinal research design to observe the change of career development trajectory and the rate of intention to stay.

Factors influencing nurses' career development and intention to stay (ITS)

Career Development

Career development (CD) is the total constellation of psychological, sociological, educational, physical, economic and chance factors that combine to shape the career of an individual over the lifespan" (Sears, 1982). Hache et al. (2000) used the term of 'life/work design' in identifying the career development competencies required by individuals to manage their learning and work across the lifespan. Amundson et al. (2002) recognized that career development is "a continuing tension between leveraging past experience and positioning for future opportunity". As such the notion of career development is also undergoing a significant paradigm shift from talking about career development to development through work and other life roles (Hartung, 2002). Based on the above definition, we defined career development as the position, role, and task of the individual in the overall life cycle through constant interaction with the environment, continuous selection, management, revision during the process of personal related work.

As to career development practices (CPD), it involves an organized, formalized, planned effort to achieve a balance between an individual's career needs and the organization's workforce requirements. CDP is a crucial part of the human resource management practices under life time employment practices to motivate employees for career enrichment as well as desired performance in the organization. Regarding the relationships between career development and intention to stay (or intention to leave conversely), Tan investigated the mediating role of perceived organizational support in linking career development practices (CDP). Tan (2008) found that career development and perceived support could be reciprocated with a willingness to remain in the organization (intention to stay). Perceived organizational support could be a mediate perception of career development opportunities, especially supervisory support. However, career orientation and cultural influences of the perception of organizational support. As previous research the career development include four domains: job condition (including specialty choice and change, job change), support & barriers at work, career growth or advancement, and satisfaction with career development(Ikeda et al., 2008; Goodrich,& Ward,2004; Riley et al.,2009; Bjørk et al., 2007; Krugman et al., 2000; Drenkard,&Swartwout, 2005). The results of the study revealed that nurses with a positive image of LPNs along with RNs showed high interest in career advancement. For nurses, who wish promote their job (e.g. LPNs wish become RNs), may encounter some difficulties such as limited number of

transitional programs, limited support from the current workplace, and no job assurance (Ikeda et al., 2008). A study surveys 421 eligible RNs, indicates one or more reasons for not participating in the A Career Advancement for Registered Nurse Excellence (CARE) program, the most frequently cited reasons were family commitments (40%), lack of knowledge about the program (34%), lack of interest (22%), and lack of time due to other work responsibilities (16%) (Fusilero et al., 2008). Goodrich, & Ward's study (2004), using the Index of Work Satisfaction to evaluate the level of nurses' satisfaction with their work, revealed that pay was the most important element to the nurses, yet it was the least satisfying element. Besides, factors hindering nurses' promotion included the following: advancement process was time consuming, the required paperwork was overwhelming, pay did not adequately match the increased responsibility associated with advancement, personal obligations were barriers to pursuing advancement, and certain part-time job categories were not eligible to seek advancement. Similarly et al. (2009) also found that financial incentive was the major factor for advancement for nurses in clinical ladder program. "Unknown time commitment beyond scheduled work" was a barrier to participation in the clinical ladder program too.

A cross-sectional survey design in which clinical nurses from four hospitals in Norway, the result showed nurses' major reasons for entering a clinical ladder program included a desire for more personal development and opportunities to accrue skills and knowledge for better patient care and quality of nursing in general, also benefits from participating in the clinical ladder increased as nurses moved upward in the ladder system, with the largest increase between nurses in levels 2 and 3. CARE participants had significantly greater levels of job satisfaction than that of non-CARE participants on 7 of the 11 items: physician collaboration, administrative decision making, autonomy, status of nursing at Metro Health Medical Center, opportunities for career development, access to continuing education, and advancement opportunities. (Fusilero et al., 2008). Career ladder RNs were more involved in leadership, quality improvement, and preceptorship activities than non-career ladder RNs in the same job role (Nelson et al., 2008). Krugman et al. (2000) conducted an evolution of a clinical advancement program, UEXCEL, reported by 20 inpatient units over the 5-year period, for a total aggregate subject number of 876 nurses. The results showed improvement in nurse satisfaction with the UEXCEL program has been steady and incremental. The clinical advancement program has a strong positive influence on nurse satisfaction with the ladder, demonstrated by an increase in satisfaction of "agree" and "strongly agree" from 47% prior to the implementation of the system's clinical ladder program to 68% (after one year implementation of the Achievements Demonstrating Versatile Accomplishments of Nursing Clinical Excellence (ADVANCE) clinical ladder program) (Drenkard, & Swartwout, 2005).

With reference to other variables, in Yang et al. (2015) study, three variables, i.e. age, work seniority (years), and professional title (job position) had significant relationships with nurses career development. Excessive workload and poor work conditions are focal issues in nursing. The quality of work life (QWL) has been becoming an important, crucial and basic issue for nurses in the world (Moradi et al., 2014). Compare to job satisfaction, QWL is a broader concept of job-related experience beyond job satisfaction, which is similar to employee well-being (Dai et al., 2016). Nayeri

et al. (2011) indicated that quality of work life (QWL) as a consequence of dynamic changes in work environment. Therefore, in this study, QWL is viewed as a variable in social domain. QWL concept emphasizes organizations should ensure the holistic wellbeing of an employee instead of only focusing on work-related aspects. The concept of QWL also expect that the organizations' employees and stakeholders learn how to work and to improve both the staff's quality of life and the organizational effectiveness. So, QWL is an important factor in improving work performance and retention (Dai et al., 2016). In this study, we examined nurses' quality of work life (QWL) and then to explore its relationships with career development and intention to stay.

Chen et al. (2012) conducted a cross-sectional research design with 314 male nurses to explore the relationships among social support, professional empowerment, and nursing career development. They found that social support and professional empowerment were significantly positively correlated with nursing career development. Additionally, professional empowerment was the most critical predictor of nursing career development. As to the other variables included social support, professional empowerment, salary, type of institution, type of clinical level, and nursing discipline were also significantly influenced nursing career development for male nurses.

Intention to stay (ITS)

ITS is the most crucial predictor of the retention of nurses, particularly, nursing shortage is a global healthcare crisis that negatively affects the quality of care and patient safety (Liang et al., 2016). Intention to stay was defined by Boyle et al. (1999), which is the stated probability of an individual staying with the current organization. It has been consistently viewed as the strongest predictor of turnover behavior process (Cowden, & Cummings, 2012; McCarthy, & Lehane, 2007). Since intention to stay or leave is the final step of the turnover decision-making process, prior to actual behavior, it is important for administrators to have in depth understanding of nurses' intention to stay or leave. In Liang et al. (2016) study, age and working hours directly influenced nurses' ITS. Job position did not directly influence nurses' ITS, but indirectly influenced nurses' ITS through emotional labor.

Socio-ecological models were developed to further the understanding of the dynamic interrelations among various personal and environmental factors. One of famous ecological model is Bronfenbrenner's ecological system model (from Wikipedia, the free encyclopedia). Ecological model is a nested framework, emphasis on interactions between individual and environment (Bronfenbrenner, 1979). The core is individual system. The advantage of ecological model is to consider all variables from different level at the same time, which is more practical in realizing human behavior (Sallis et al., 1998). He postulated that there are many different levels of environmental influences that can affect individual, including microsystem (immediate physical and social environment), mesosystems (interactions among the systems within the environment), exosystem (broader social, political and economic conditions) as well as macrosystems (social, political, and economic conditions are themselves influenced by the general beliefs and attitudes)

shared by members of the society (Bukatko & Daehler, 1998). Later, Bronfenbrenner accounted for the influence of time, such as specific events and changes in culture over time, by adding the chronosystem to the theory (Ceci, 2006). In brief, Bronfenbrenner saw the process of human development as being shaped by the interaction between an individual and his or her condition.

In our study, we use the ecological model proposed by Bronfenbrenner as the theory base to explore factors influencing nurses' career development trajectory (career growth in this year) and intention to stay. For individual level (personal factors), it includes demographic data (gender, age, education, marital status), year of working experience (work seniority), job position, professional commitment, psychological hardiness, and quality of work life. For microsystem level, two parts were examined: family and organizational factors. Family factors included socioeconomic status (SES), economic duty, and kinship responsibility. Organizational factors included work condition (e.g. workload, interpersonal disrespect/abuse, professional values, positive image). As to mesosystem level, two main variables were examined, i.e. W-H conflict (work-home conflict, i.e. conflict between work and family) and social support (provided by family members, friends, colleagues, and supervisors). With regard to exosystem level, unemployment rate and type of hospital were collected. Then, macro system level, social norm was examined (Figure 1). Based on the ecological model, factors in individual, micro-, meso-, exo-and macro-system were examined.

Individual system

Individual system includes demographic data, professional commitment, psychological hardiness, and quality of work life. According to previous researches, nurses' characteristics such as gender, age, education, marital status, years of work experience (work seniority), job position may influence nurses' career and intention to stay (Boyle et al., 1999; Cowden, & Cumming, 2012; McCarthy, & Lehane, 2007; Liang et al., 2016; Tourangeau, & Cranley, 2006; Gilles et al., 2014). For example, studies revealed that nurses under 30 and nearing retirement age, newly qualified, higher educational level, less than 15 years experiences, and focus in this study, male nurses, tended to resign more often (Flinkman et al., 2008; Mullan, & Harrison, 2008; Nooney et al., 2010). Yang et al. (2004) found public image to nursing (excessive curiosity about gender differences in professional roles by the public) may hinder Taiwanese male nurses in developing their nursing careers. Nooney et al. (2010) found that marital status was strong predictors of early labor force and career development. Yarbrough et al. (2017) found that job seniority was associated with job retention; mid-career nurses (5 or more years) revealed significantly higher on retention and job satisfaction than early-career nurses (less than 5 years).

Professional commitment

Professional commitment was defined as one's attitude towards one's profession or vocation (Blau, 1985). It was considered as the strength of one's motivation to work in a chosen career role or the identification with the involvement in one's profession (Hall, 1971). Previous research revealed that professional commitment was a strong predictor of employee's turnover intention (Flinkman et al., 2008; Lu et al., 2002). Additionally, based on the study of Lu et al. (2000), professional

commitment was consisted of three elements: willingness to make effort, maintaining as a membership, and belief in goals and values. Professional commitment can be measured by a valid and reliable instrument.

Psychological hardiness

Hardiness emerges as a pattern of attitudes and strategies that together to facilitate turning stressful circumstances from potential disasters into growth opportunities (Maddi, 2013). In Chen et al. study (2009), nurses' hardiness were negatively related to intention to leave. Some researchers used hardiness and resilience interchangeable. However, according to Maddi (2013), resilience is often considered the phenomenon or process of maintaining individual's performance and health rather than focus on personality trait. Based on the definition of individual system, hardiness was examined as a personal factor in this study. Generally, hardiness attitude consist of 3C's: challenge, commitment and control. Challenge can help individuals accept stress events as natural in life and see those stressful changes as opportunities to growth. Commitment involves the belief that no matter how bad things get, it is important to stay involved rather than sink into detachment. Control leads individual to try to turn stresses into growth opportunities (Maddi, 2013; Mohatashami et al., 2015)

Quality of Work Life

In previous studies, job satisfaction was one of the most mentioned factor in predicting nurses' turnover intention (Borda & Norman, 1997; Tourangeau & Cranley, 2006; Coomber, & Barriball, 2007 ; Flinkman et al, 2008). Job satisfaction is also a consistent predictor of ITS (Borda, & Norman, 1997; Tourangeau, & Cranley, 2006; McCarthy et al., 2007; Yarbrough et al., 2017). For "Quality of Work Life" (QWL) emerging as a replacing concept because QWL reflects the subjective perceptions of the respondent toward his/her work, organization, and employer. Thus, QWL is a broader concept of job-related experience beyond job satisfaction (Dai et al., 2016; Vagharseyyedin et al., 2011). Researchers suggest that improving QWL can helpful for retaining nurses (Hsu & Kernohan, 2006; Huang, Lawer, & Lei, 2007; Korunka et al., 2008). Therefore, in this study, QWL was used instead of job satisfaction to explore its relationships with nurses' career development and intention to stay.

Micro system

There are two parts in this system: family and organization.

Family

Family structures were discussed broadly in 1980s. From sociological approaches, family structure may affect individual behavior via its social control of members and its direction of members' time and energy (Lee & Maurer, 1999). According to the findings of Lee & Maurer (1999), spouse's occupation (employed or not employed), number of children living at home are related with Navy officers' intention to leave. Nurses whose families are dependent on them for their income are less likely to leaving nursing (Lynn & Redman, 2005). Kinship responsibilities was also found associated with nurses' intention to stay (Cavanagh & Coffin, 1992). Greater likelihood of

turnover intention was found in nurses without kinship responsibilities such as dependent children or relatives (McCarthy et al., 2007). Similar findings were found in Nooney et al. (2010) study, they found that kinship duty (caring of young children or elderly parents) was a strong predictor of early labor force and career.

Organization

Boyle et al. (1999) indicated that organizational characteristics were associated with nurses' intention to stay. Hospital levels, location and type of hospital, work shift, work units are all considered as influencing factors of nurses' intention to stay. Besides, Ishihara et al. (2014) found newly graduated nurses' intention to leave were associated with nursing work environment. Work environment, for nurses, can be defined as the organizational characteristics of a work setting that facilitate or constrain professional nursing practice (Lake, 2002). A study of understanding new graduate nurses' intention to leave and its relationships with work environment found the highest scores (the best work environments) were in collegial (nurse–physician) relations and nursing foundations for quality of care; the lowest scores (the worst work environments) were in staffing and resource adequacy (Rhéaume et al., 2011). Their study supported that there were significant relationships between work environment and intent to leave. Cleary et al. (2013) indicated poor work environment such as lacking of opportunity for career development, overwork, poor healthcare system and broader cultural barriers, interpersonal disrespect/abuse, etc. also may influence career development and intention to stay (Patel et al., 2014 ; Cleary et al, 2013 ; Ikda et al., 2008). As to positive factors, professional autonomy, professional empowerment and professional values, higher salary may be positively influence nurses' career development (Bjørk et al.,2007; Cleary et al., 2013; Fusilero et al., 2008; Goodrich & Ward, 2004; Lou et al., 2010; Nelson & Cook, 2008; Riley et al., 2009; Yarbrough et al., 2017).

Meso system

W-H conflict (work-home conflict, i.e. conflict between work and family)

Two important focal points of adult life are family and work. However, the role expectations of the two domains are not always compatible, creating conflicts between work and family life. Kahn (1981) defined inter role conflict as a form of conflict in which "role pressure associated with membership in one organization are in conflict with pressures stemming from membership in other groups. Most researcher agree that the general demands of a role, the time devoted to a given role, and the strain produced by s given role are the sources of conflicts between work and family. WFC and FWC are both viewed as inter role conflicts but distinct ones. WFC is a form of inter role conflicts which the general demands of, time devoted to, and strains produced by the job interfere with performing family-related responsibilities. FWC, contract to WFC, is defined as the form of inter role conflicts which the general demands of, time devoted to, and strains produced by the family interfere with performing work-related responsibilities (Netemeyer et al.,1996). Since WFC and FWC are complicate concepts, types of WFC and FWC are varied (Greenhaus & Beutell, 1985; Ntemeyer et al., 1996; Lu et al., 2005). However, two major types

of the WFC and FWC are most recognized, namely time-based conflict and strain-based conflict.

Social support

Support are often mentioned as an influencing factor of nurses' intention to leave (Hayhurst et al., 2005; Cho et al., 2009; Wilson, 2006). Social support has been defined in various ways such as resources provided by others, coping assistance, an exchange of resources (Schwarzer & Knoll, 2007). However, in Taiwan, male nurses still received inadequate support from significant others, including their family members, friends, and people who are powerful to influence their career planning (Yang et al., 2004). In our study, social support means the physical and emotional comfort given from family and hospital. The more social support nurses had, the higher their potential to remain in the nursing job (Chen et al., 2012; van der Heijden et al., 2010).

Exo system

Availability of alternative employment opportunities also affect one's intention to leave. Many researcher argued that most people were not leave their current job without reasonable probability to find other employment (Griffeth & Hom, 1988; Mueller et al., 1994). Local unemployment rate reflect objective situation of availability of alternative employment opportunities. According to Camp (1994), during period of high unemployment, opportunities for finding alternative employment is hypothesized to below. Hulin et al. (1985), in a review of literature, found strong relationships between unemployment rate and intended turnover. In this study, level of hospital (medical center vs. regional hospital) and type of hospital (public vs. private) are considered as exo-system may influence nurses' intension to stay.

Marco system

The stereotypical public image of nursing is a major concern for male nurses around the world. For instance, Yang et al. (2004) found that difficulties encountered during male nurses' career development were related to the gender expectations of patients and the general public.

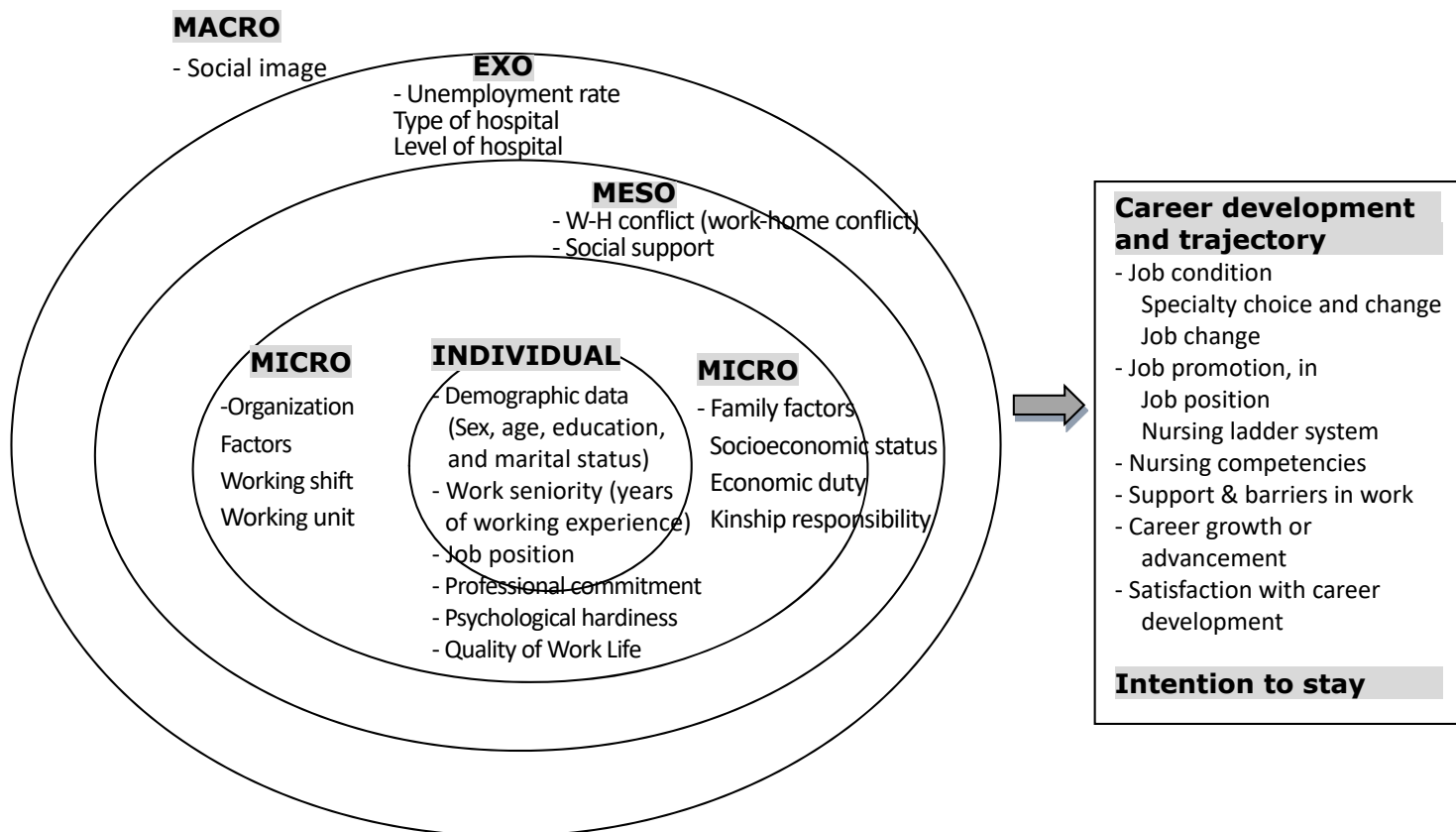


Figure 1 Factors influencing nurses' career development and the intention to stay: An Ecological Model

Purpose

The main purposes of this part of (Stage 2) this series study were:

1. To understand career development (career growth) and intention of stay for both gender nurses at completing the NPGY2 training program (T0).
2. We adopted the ecological model as the theory base (from a wide range of perspectives, including individual, micro-, meso-, exo-, and macro-system) to examine and compare factors influencing both gender nurses' career development (career growth) and intention to stay.

Based on this study, the findings could be a basis line to continuously follow up and compare both gender nurses' career development trajectory and intention to stay within the first-five year. Furthermore, the findings can be helpful in identifying whether and what differences exists between female and male nurses in career development trajectory, and intention to stay. Besides, based on the findings for influencing factors, we can develop more effective intervention programs and strategies to promote nurses' career development, to increase nurses' intention to stay, and then contribute to positive nursing image and high quality nursing human resources.

Methods

In Taiwan, The Nurse Post-Graduate Year two (NPGY2) is an accredited twenty-four month postgraduate training program which is designed to provide nurses with the skills and knowledge required to become competent nurse practitioners. Generally, when completing the NPGY2 program, RNs tend to fix in a specific unit (e.g. internal, surgical, maternal, pediatric, psychiatric unit, etc.) then they kept move on a career development. In this study (stage 2 of this series study), we adopted a cross-sectional research designed for 144 registered nurses (RNs) (72 female and 72 male) who had already completed the Nurse Post-Graduate Year Two (NPGY2). Questionnaires were used to collected data.

Research design

In this study (stage 2 of this series study), we adopted a cross-sectional research design. A purposive sampling method was used to recruit participants. First, we contacted the directors of nursing department to get their permission. Then, according to the name lists provided by hospitals, we contacted the nurses who meet our inclusive criteria, i.e. completed the NPGY2 programs.

Participants

Finally, 144 nurses (both male and female were 72 RNs, respectively) who completed NPGY2 enrolled in the study worked at eight hospitals (four medical centers and four regional hospitals). Questionnaires were used to collected data from January 1 to December 31, 2019.

Instruments

A structured questionnaire was used to collect data via literature review, experts' opinion, and researchers' experiences, etc. There are three major parts of the questionnaires.

1. Basic data: this part includes:

(1) Individual (personal factors)

This part includes demographic data (sex, age, education, and marital status), year of working experience, job position, professional commitment, psychological hardiness, and quality of work life.

As to nursing commitments, the Nursing Professional Commitment Questionnaire (NPCQ) was used to collect data in this study. NPCQ is an eight-item scale. According to the analysis of using an exploratory factor analysis (EFA), two domains (“Professional emotional attachment” and “Professional identification”) were classified by Yu et al. (2016). Each item is scored on a 5-point Likert scale (1= strongly disagree; 5= strongly agree). Higher scores indicated higher commitment to nursing.

Regarding work-related quality of life (QWL), the Work-Related Quality of Life Scale (WRQoL) is a widely used scale to measure the QWL of healthcare professionals around the world. This original scale was developed by Van Laar et al. (2007). Dai et al. (2016) translated this scale into Chinese (WRQoL-T) using forward-translation with group discussions, back-translation, and verification of conceptual equivalence. The WRQoL-T is a 23-item scale (including six domains: job and career satisfaction, general wellbeing, home-work interface, stress at work, and control at work, and working conditions). This scale is a 5-point Likert scale, with higher scores indicating higher levels of QWL. The WRQoL-T has satisfactory validity and reliability. The criterion validity of the WRQoL-T scale with the Chinese Quality of Nursing Work Life Scale (Su & Shieh, 2002) is .75 ($p < .001$); the Cronbach's alpha coefficient is .88, the 3-week test-retest reliability is .89 indicating good internal consistency and stability.

Regarding psychological hardiness, this original Dispositional Resilience Scale-15 was developed by Bartone (2007). Wong et al (2014) translated this scale into Chinese (C-DRS). The Dispositional Resilience Scale in traditional Chinese (C-DRS) is a 15-item scale within three subscales: commitment, control-adaptation and positivity. C-DRS rated on 4-point Likert scale (0= not at all true; 3 = completely true). However, the grading for questions 3, 4, 8, 11, 13 and 14 are negatively keyed and reversed before scoring. The total score ranges from 0 to 45, with a higher score indicating higher levels psychological hardiness. The Cronbach's alpha coefficient for the total test subjects was 0.78; commitment subscale, $\alpha = .78$; control-adaptation subscale, $\alpha = .75$; positivity subscale, $\alpha = .61$, respectively (Wong et al., 2014).

(2) Microsystem

Two parts were examined: family and organizational factors. Family factors included socioeconomic status (SES), economic duty, and kinship responsibility. Organizational factors included type of hospital, and work condition. Work condition included three variables: working unit, workload (nurse-patient ratio), and work insurance (public employee insurance vs. labor insurance).

(3) Mesosystem

Two main variables were examined: work-home conflict (W-H conflict) and social support (provided by family members, friends, colleagues, and supervisors). Ntemeyer et al. (1996) developed a scale to quantify WFC and FWC. The scale is a 10-item Likerts' scale. A social support scale developed by Chen et al. (2012) consisted of 10 items within three subscales: Kinship Social Support (4 items), Coworker Social Support (3 items), and Supervisor Social Support (3 items). The Content Validity Index (CVI) was over .99 and Cronbach's alpha coefficient of internal consistency reliability was between .74 and .81. The results of confirmatory factor analysis (CFA) based on 314 participants revealed the model $\chi^2 = 82.65$, $df = 32$, $p < .001$, the root mean square error of approximation (RMSEA) = .071, the comparative fit index (CFI) = .97, and the standardized root mean square residual (SRMR) = .049. These evaluation indexes showed that the Social Support Scale was well structured.

(4) Exosystem

Level and type of hospitals were collected in this study.

(5) Macrosystem

An acceptance of social norm (including the perceptions of nursing image, nurses' status, contribution, and value) was collected.

2. Career development and trajectory

According to literature review, we categorized six domains to measure and to observe nurses' career development and trajectory (Yang et al., 2004). The six domains were job condition (including specialty choice and change, job change), job promotion, nursing competencies, support & berries in work, career growth or advancement, and satisfaction with career development.

As to job promotion, it was measured from two aspects: formal (administrative) promotion and promotion in nursing ladder system. The former can be observed by job position promotion (nurse to leader, assistant head nurse, and head nurse etc.). The latter can be measured by the promotion in nursing ladder system (from N1 to N4). Additionally, nursing ladder system should be as an outcome indicator of nursing competence, so we measured nurses' of nursing professional competence in this study simultaneously and then to identify its relationships with nursing ladder.

Regarding support & berries in work, "the Scale of Support and Barrier in Work" (SSBW) was developed and validated, the Cronbach's α coefficients for this scale was 0.92. It is a 15-item scale with a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5), total score ranging from 15-75. A higher score indicates a higher support perceived by a nurse in work.

For measure nurses' professional competence, "The Scale of Nursing Competence" (SNC) had developed and validated at Stage 2 already. SNC is 60 item scale, included six domains: clinical care (10 items), legal/ethical practice (12 items), communication and coordination/collaboration (9 items), leadership and management (11 items), teaching/coaching (8 items), and professional development (10 items). The Cronbach's α coefficient for this scale was 0.98 indicating a relatively high internal consistency. Six subscales also revealed good internal consistency.

The terms “career growth” and “career development” have been used interchangeably. Career growth can be used to assess how fast employees progress in their current organization. Career growth is a consequence of career success, which combines employee's positive feelings towards their job and career accomplishment. Career development takes into account organizational perspectives, which include personal career growth and career success by promoting individual development as a means to increase organizational achievement. Career growth has been proven to have a positive effect on career outcome and intent to remain in the current organization (Yang et al., 2015). In this study, we used the Career Growth Scale (CGS) to observe nurses' career development. The original CGS is a questionnaire developed by Weng and Xi (2011). It is a 15-item scale with a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). The CGS scale includes four sub-dimensions: career goal, career capacity, promotion speed, and salary increase. The total score ranges from 15 to 75. A higher score on the scale denotes a higher level of career growth. As to reliability, the Cronbach's alpha coefficients of the four sub-dimensions are 0.86, 0.85, 0.80, and 0.78.

In measuring satisfaction with career development, “The Career Satisfaction Scale (CSS)” developed by Greenhaus et al. (1990). We had translated and validated it from English into Chinese at Stage 2 already. It is a 5-item scale with a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5), total score from 5-25. A higher score indicated a higher career satisfaction for a nurse. The Cronbach's alpha value was 0.92 indicating a good internal consistency.

3. The intention to stay

In this study, the Intention to Stay Scale (ITS) was used to identify nurses' intention to stay in the current job (Wang et al., 2006). This scale consists of four items: (1) I am thinking of leaving the current job; (2) I am thinking of changing the current workplace; (3) I am thinking of working in a non-nursing professional job; and (4) I am willing to continue working in my current job. This scale is a five-point Likert scale ranging from 1 (strongly disagree)-5 (strongly agree). Item 1-3 was reverse-scored. Total scores range from 4-20 points, with a higher score indicating a greater willingness to stay in the current job. As to reliability, the Cronbach's alpha coefficient is 0.84 (Liang et al., 2016).

Data collection

Researcher explained the study purposes to each nursing unit. Each participant was independently fill out the questionnaire and return it in an envelope.

Ethical Considerations

The Institutional Review Board of National Yang-Ming University and eight hospitals approved this study. The information package was sent to participants described the study purpose, the procedures involved, and the rights of participants. Participants completed the questionnaires

anonymously to ensure their comfort in answering questions involving sensitive information regarding their perceptions of the hospitals.

Data Analysis

Data were analyzed using SPSS for Windows 24.0 (Chicago, IL, USA). Descriptive statistics were used to summarize sample characteristics. Chi-square, t-test, Pearson's correlation and hierarchical multiple regression analysis were used to examine the relationships between independent variables and dependent variables (career development trajectory and the intention to stay). All statistical tests were two-sided ($p < .05$).

Results

Background and Career development between two genders

Among 144 participants, 72 (50.0%) were females; 72 (50.0%) were males. An average age of male group was 26.22 (SD 1.58) and female group was 25.18 (SD 1.14), a significant difference ($t=4.54$, $p<0.001$) was found between male and female nurses. Most of participants were single (male group 98.6%, female group 98.6%). All participants were registered nurses (RNs). Most participants (male group 91.7% vs, female group 76.4%) had a bachelor's degree, a significant difference ($\chi^2=7.72$, $p<0.01$) existed between two genders. As to working unit, over two-thirds of the participants worked in ICU (18.1% and 22.2%, respectively); surgical wards (18.1% and 16.7%, respectively), ER (16.7% and 18.1%, respectively), and medical wards (13.9% and 16.7%, respectively). An average of the length of total work experience was 2.42 years (SD 0.55) in male group and 2.41 years (SD 0.58) in female group. As to nursing ladder system for two groups, N level (25.0% in each group) and N1 (61.1% and 52.8%, respectively) occupied most parts. Regarding to career choice 5 years later, 9 males (12.5%) and 4 females (5.6%) tended to be promoted to nursing administrators (e.g. head nurse, supervisor, etc.); 17 males (23.36%) and 7 females (9.7%) developed towards nurse practitioner (NP); 25 males (34.7%) and 29 females (40.3%) tended to be RNs continuously; 2 males (2.8%) and 5 females (6.9%) considered to transfer their nursing specialty; 3 males (4.2%) and 3 females (4.2%) considered to be a case manager (Table 1).

Factors influencing nurses' career development between two genders

Table 4 & 5 indicated that the findings of factors influencing nurses' career development (career growth in this year). When all variables entered the model, gender comparison revealed two factors (i.e. work-related quality of life and nursing professional commitment) revealed significant relationships with male nurses' career development (i.e. career growth). Whereas, for female nurses, work-related quality of life and work unit revealed significant relationships with career development. The total variance between male and female nurses which explained 63.4% and 50.3% in career development

Factors influencing nurses' intention to stay between two genders

When all variables entered the model, gender comparison revealed that for male nurses, work-related quality of life was the only one factor influencing their intention to stay. Whereas for female nurses, same as male nurses, work-related quality of life was also significantly influenced female nurses' intention to stay; while education level, age, professional commitment and resilience also affected female nurses' intention to stay. The total variance between male and female nurses which explained 46.6% and 49.0% in intention to stay (Table 6 & 7).

Basically, the finding indicated that there were the same but also different influencing factors in the career development and intention to stay between male and female nurses.

Discussion

Overall, male nurses were more likely to be a head nurse and nurse practitioner, while female nurses were intent continue to be nurses and nursing teachers after 5 years when complete NPGY. As similar as the Abrahamsens (2004) longitudinal study founded male nurses usually choice of being the leader in nursing career. Also, Sugiura et al. (2017) study showed more male nurses were to be as head nurse than female in Japan.

The individual system, nurses who junior college degree with better career development as similar as Chang et al. (2019) proposed that nurses with high education level were negatively related to stay in nursing.

Based on our findings, we realized that for both gender nurses, work-related quality of life was an important factor in predicting career development and intend to stay. Nurses with higher work-related quality of life revealed a higher career development (career growth in this year) and a higher intention to stay. The findings are similar to those of Lee et al. (2017), and Almalki et al. (2012). They found nurses with dissatisfied quality of work life indicated turnover intention from hospitals.

As to our findings indicating resilience had a significant effect on female nurses' intention to stay, this finding was similar to that of Lin et al. (2019). Lin et al (2019) also found resilience was a factor moderately correlated retention for PGY nurses. Female nurses in this study who perceived a higher professional commitment revealed a higher intention to stay current job. The findings supported by Chang et al. (2019).

Conclusion & Suggestion

Career development is dynamic and formed by individuals and context which micro, mexo, exo and macro system. Findings in this study support that identifies resilience, work-related quality of life and professional commitment as important factors influencing nurse career development and intension to stay between two genders. This finding suggests that nursing administrators can be reducing career barriers while increasing professional commitment for nurses, improvement work-related quality of life, helping to strengthen nurses' career development and intension to stay. Furthermore, this study suggested that it need to adopt a prospective longitudinal research design which helpful in understanding the trajectory of the first-five year career development and the changes of intention to stay for both genders.

Table 1. Compare background and career development between two genders (N=144)

	Male		Female		<i>t/χ²</i>		Male		Female		<i>t/χ²</i>
	n	%	n	%			n	%	n	%	
Gender	72	50%	72	50%		Unit ^b					6.03
Age ^a	26.22 (SD±1.58)		25.18 (SD±1.14)		4.54***	ICU	13	18.1%	16	22.2%	
						Surgical wards	13	18.1%	12	16.7%	
						ER	12	16.7%	13	18.1%	
Education degree ^b					7.72**	Medical wards	10	13.9%	12	16.7%	
Junior college	5	6.9%	17	23.6%		OR	10	13.9%	7	9.7%	
Bachelor	66	91.7%	55	76.4%		PSY	6	8.3%	5	6.9%	
Master	1	1.4%	0	0.0%		General wards	6	8.3%	3	4.2%	
						Pediatric ward/ GYN	2	2.8%	4	5.6%	
Marital status ^b					0.00	Career development ^b					12.77
Single	71	98.6%	71	98.6%		Career choice 5 years later					
Married	1	1.4%	1	1.4%		Nursing administrators	9	12.5%	4	5.6%	
Nursing tenure ^a	2.42(Years) (SD±0.55)		2.41(Years) (SD±0.58)		0.04	NP	17	23.6%	7	9.7%	
						RN in same field	25	34.7%	29	40.3%	
Nursing ladder system level ^b					1.82	Case managers	3	4.2%	3	4.2%	
N	18	25.0%	18	25.0%		Nursing teacher	1	1.4%	6	8.3%	
N1	44	61.1%	38	52.8%		RN change to another nursing field	2	2.8%	5	6.9%	
N2	10	13.9%	16	22.2%		Not sure yet	8	11.1%	13	18.1%	

p*<.05. *p*<.01. ****p*<.001.

Note. ^a independent t- test; ^b Chi-square test

Table 2. Comparison of independent variables and career development between two genders (N=144)

Variables	Male (n=72)		Female (n=72)		<i>t</i>	<i>P</i>
	Mean	SD	Mean	SD		
Independent variables						
Nursing Professional Commitment	3.68	0.57	3.78	0.53	1.10	.275
Work-related quality of life	3.33	0.52	3.27	0.46	0.77	.442
Resilience	2.83	0.35	2.81	0.37	0.30	.765
Work-Home Conflict	2.80	0.60	2.63	0.64	1.68	.095
Social support	3.82	0.49	4.00	0.55	2.04	.043*
Career development and trajectory						
Career Growth	3.28	0.46	3.32	0.52	0.48	.632
Support and Barrier in Work	3.83	0.59	3.82	0.47	0.11	.909
Nursing Competence	3.66	0.46	3.65	0.44	0.18	.855
Career Satisfaction	3.21	0.65	3.41	0.60	1.87	.064
Intention to stay	3.04	0.93	3.19	0.78	2.06	.290

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3. Hierarchical regression analysis on career growth for male nurses (N =72)

Variables	Individual			Micro system			Meso system			Exo system			Macro system		
	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>
Education degree	-.17	-1.66	.103	-.16	-1.50	.139	-.14	-1.36	.179	-.16	-1.51	.137	-.16	-1.55	.128
Age	-.13	-1.26	.214	-.12	-1.15	.254	-.13	-1.35	.184	-.14	-1.42	.162	-.14	-1.41	.165
Nursing tenure	-.13	-1.34	.184	-.12	-1.16	.252	-.10	-1.06	.294	-.09	-0.91	.365	-.08	-0.82	.417
Health status	.09	0.97	.336	.09	0.91	.367	.11	1.18	.244	.10	1.00	.320	.10	1.04	.304
NPC	-.25	-2.24	.029*	-.22	-1.94	.058	-.22	-2.08	.042*	-.22	-1.92	.060	-.25	-2.08	.042*
Resilience	.24	2.13	.037*	.23	1.98	.053	.20	1.73	.089	.16	1.24	.221	.16	1.25	.216
WRQOL	.60	5.36	.000***	.57	5.03	.000***	.55	4.35	.000***	.58	4.36	.000***	.56	4.04	.000***
Kinship duty				.15	1.61	.112	.14	1.55	.126	.14	1.60	.115	.14	1.57	.123
SES				-.05	-0.55	.582	-.07	-0.80	.427	-.06	-0.70	.488	-.06	-0.62	.537
Economic duty				.00	0.03	.973	-.04	-0.41	.683	-.03	-0.27	.791	-.02	-0.21	.831
Shift				-.14	-1.51	.137	-.15	-1.66	.102	-.15	-1.59	.117	-.15	-1.57	.121
Unit				.12	1.28	.205	.17	1.80	.077	.21	1.91	.061	.21	1.89	.064
WHC							.21	2.37	.021*	.20	2.13	.038*	.19	2.01	.050
Social support							.13	1.19	.241	.11	0.91	.365	.09	0.77	.448
Level of hospital										-.16	-1.51	.399	-.16	-1.55	.320
Type of hospital										-.14	-1.42	.574	-.14	-1.41	.629
Social image													-.08	-0.82	.401
<i>R</i> ²		.518			.578			.623			.629			.634	
<i>F</i>		9.840			6.741			6.732			5.825			5.496	
<i>p</i>		.000***			.000***			.000***			.000***			.000***	
ΔR^2		.518			.060			.045			.006			.005	
F change		9.840			1.675			3.395			.425			.717	
<i>p</i> for F change		.000***			.155			.040*			.656			.401	

p*<.05. *p*<.01. ****p*<.001.

Note.

1. NPC=Nursing Professional Commitment, WRQOL= Work-related quality of life, WHC=Work-Home Conflict
2. Education degree : bachelor vs. junior college (Ref.G).
3. Shift : often vs. occasional (Ref.G)
4. Unit : ER/ICU/ OR vs. ward (Ref.G)
5. Type of hospital : public vs. private (Ref.G)
6. Level of hospital : medical center vs. regional (Ref.G)

Table 4. Hierarchical regression analysis on career growth for female nurses (N =72)

Variables	Individual			Micro system			Meso system			Exo system			Macro system		
	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>
Education degree	-.15	-0.95	.346	-.13	-0.86	.394	-.08	-0.48	.631	-.18	-1.16	.251	-.12	-0.72	.474
Age	.09	0.60	.554	.06	0.38	.704	.01	0.09	.929	-.02	-0.12	.904	-.01	-0.09	.925
Nursing tenure	.08	0.62	.535	.06	0.51	.613	-.01	-0.07	.949	.01	0.12	.909	-.03	-0.23	.823
Health status	.12	1.04	.301	.04	0.31	.760	.04	0.32	.752	.05	0.46	.648	.06	0.53	.600
NPC	.12	0.94	.350	.16	1.31	.197	.16	1.29	.201	.12	1.01	.318	.13	1.07	.288
Resilience	-.06	-0.46	.644	-.15	-1.14	.261	-.17	-1.31	.196	-.19	-1.53	.132	-.18	-1.43	.158
WRQOL	.39	2.98	.004**	.45	3.45	.001**	.45	3.21	.002**	.45	3.34	.001**	.42	3.16	.003**
Kinship duty				.13	1.13	.262	.14	1.14	.258	.16	1.41	.164	.18	1.55	.128
SES				-.08	-0.72	.474	-.11	-1.02	.312	-.12	-1.09	.279	-.11	-1.01	.317
Economic duty				-.21	-1.81	.075	-.20	-1.71	.093	-.17	-1.48	.144	-.16	-1.41	.165
Shift				-.14	-1.30	.200	-.18	-1.65	.105	-.18	-1.77	.082	-.16	-1.56	.124
Unit				.25	2.19	.033*	.25	2.24	.029*	.36	3.07	.003**	.36	3.08	.003**
WHC							.18	1.57	.123	.20	1.79	.079	.18	1.66	.103
Social support							.13	1.10	.275	.13	1.10	.276	.13	1.06	.292
Level of hospital										.23	2.11	.039*	.20	1.83	.073
Type of hospital										.26	2.11	.039*	.24	1.96	.055
Social image													.16	1.42	.161
<i>R</i> ²	.252			.380			.415			.485			.503		
<i>F</i>	3.073			3.016			2.888			3.232			3.217		
<i>p</i>	.007**			.002**			.002**			.001**			.001**		
ΔR^2	.252			.129			.035			.070			.019		
F change	3.073			2.449			1.695			3.715			2.021		
<i>p</i> for F change	.007**			.044*			.193			.031*			.161		

p*<.05. *p*<.01. ****p*<.001.

Note.

1. NPC=Nursing Professional Commitment, WRQOL= Work-related quality of life, WHC=Work-Home Conflict
2. Education degree : bachelor vs. junior college (Ref.G).
3. Shift : often vs. occasional (Ref.G)
4. Unit : ER/ICU/ OR vs. ward (Ref.G)
5. Type of hospital : public vs. private (Ref.G)
6. Level of hospital : medical center vs. regional (Ref.G)

Table 5. Hierarchical regression analysis on intention to stay for male nurses (N =72)

Variables	Individual			Micro system			Meso system			Exo system			Macro system		
	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>
Education	.06	0.47	.639	.07	0.57	.570	.07	0.57	.571	.10	0.80	.427	.09	0.74	.464
Age	-.08	-0.68	.499	-.08	-0.70	.485	-.08	-0.69	.496	-.06	-0.50	.616	-.06	-0.49	.623
Nursing tenure	.02	0.20	.844	.09	0.74	.465	.09	0.75	.456	.05	0.37	.716	.06	0.51	.614
Health status	.02	0.18	.854	.00	0.02	.983	.00	0.00	1.000	-.01	-0.08	.935	.00	-0.02	.981
NPC	.19	1.41	.162	.20	1.50	.139	.20	1.48	.144	.23	1.69	.097	.17	1.23	.225
Resilience	-.21	-1.56	.123	-.23	-1.62	.110	-.23	-1.60	.115	-.19	-1.27	.210	-.19	-1.25	.217
WRQOL	.57	4.36	.000***	.55	4.07	.000***	.57	3.54	.001**	.55	3.38	.001	.50	3.02	.004**
Kinship duty				.16	1.47	.148	.16	1.46	.150	.12	1.10	.275	.12	1.06	.294
SES				.14	1.28	.205	.14	1.27	.210	.13	1.18	.244	.14	1.30	.201
Economic duty				-.14	-1.29	.201	-.14	-1.24	.221	-.18	-1.61	.112	-.17	-1.54	.129
Shift				-.05	-0.47	.641	-.06	-0.50	.616	-.02	-0.14	.886	-.01	-0.12	.904
Unit				.09	0.80	.426	.09	0.79	.435	.07	0.55	.583	.07	0.53	.596
WHC							.02	0.14	.891	.03	0.30	.767	.02	0.14	.888
Social support							-.03	-0.20	.841	.02	0.11	.917	-.02	-0.11	.914
Level of hospital										-.22	-1.81	.076	-.19	-1.51	.137
Type of hospital										.04	0.32	.752	.03	0.20	.842
Social image													.17	1.33	.189
<i>R</i> ²	.348			.408			.409			.448			.466		
<i>F</i>	4.889			3.388			2.813			2.790			2.767		
<i>p</i>	.000***			.001**			.003**			.002**			.002**		
ΔR^2	.348			.060			.001			.039			.018		
F change	4.889			1.187			.031			1.965			1.772		
<i>p</i> for F change	.000***			.327			.970			.150			.189		

p*<.05. *p*<.01. ****p*<.001.

Note.

1. NPC=Nursing Professional Commitment, WRQOL= Work-related quality of life, WHC=Work-Home Conflict
- 2.Education degree : bachelor vs. junior college (Ref.G).
- 3.Shift : often vs. occasional (Ref.G)
- 4.Unit : ER/ICU/ OR vs. ward (Ref.G)
- 5.Type of hospital : public vs. private (Ref.G)
- 6.Level of hospital : medical center vs. regional (Ref.G)

Table 6. Hierarchical regression analysis on intention to stay for female nurses (N =72)

Variables	Individual			Micro system			Meso system			Exo system			Macro system		
	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>	Beta	<i>t</i>	<i>p</i>
Education	.34	2.41	.019*	.37	2.48	.016*	.36	2.39	.020*	.34	2.15	.036*	.33	2.02	.049*
Age	-.36	-2.59	.012*	-.36	-2.47	.016*	-.37	-2.52	.015*	-.40	-2.65	.011*	-.40	-2.63	.011*
Nursing tenure	-.03	-0.31	.760	-.05	-0.45	.653	-.02	-0.17	.865	-.03	-0.24	.812	-.03	-0.21	.839
Health status	.02	0.23	.818	.01	0.05	.964	.01	0.11	.910	.00	0.01	.990	.00	0.01	.994
NPC	.50	4.40	.000***	.53	4.41	.000***	.53	4.51	.000***	.53	4.41	.000***	.53	4.36	.000***
Resilience	-.39	-3.28	.002**	-.41	-3.33	.001**	-.41	-3.35	.001**	-.43	-3.48	.001**	-.43	-3.44	.001**
WRQOL	.58	4.94	.000***	.58	4.63	.000***	.51	3.84	.000***	.50	3.74	.000***	.50	3.68	.001**
Kinship duty				.07	0.62	.540	.10	0.91	.369	.12	1.08	.287	.12	1.05	.298
SES				-.07	-0.69	.493	-.04	-0.35	.730	-.05	-0.46	.645	-.05	-0.47	.643
Economic duty				-.04	-0.32	.752	-.06	-0.59	.559	-.07	-0.62	.536	-.07	-0.62	.536
Shift				-.09	-0.92	.360	-.04	-0.43	.667	-.05	-0.52	.607	-.06	-0.52	.604
Unit				.08	0.70	.488	.05	0.51	.609	.11	0.95	.344	.11	0.95	.348
WHC							-.20	-1.82	.075	-.19	-1.76	.084	-.19	-1.73	.090
Social support							.08	0.66	.513	.09	0.80	.430	.09	0.79	.433
Level of hospital										.01	0.13	.898	.02	0.15	.885
Type of hospital										.15	1.22	.229	.15	1.21	.231
Social image													-.01	-0.11	.916
<i>R</i> ²	.415			.439			.476			.490			.490		
<i>F</i>	6.499			3.851			3.695			3.298			3.049		
<i>p</i>	.000***			.000***			.000***			.000***			.000***		
ΔR^2	.415			.024			.037			.014			.000		
F change	6.499			.499			1.987			.747			.011		
<i>p</i> for F change	.000***			.776			.146			.478			.916		

p*<.05. *p*<.01. ****p*<.001.

Note.

1. NPC=Nursing Professional Commitment, WRQOL= Work-related quality of life, WHC=Work-Home Conflict
2. Education degree : bachelor vs. junior college (Ref.G).
3. Shift : often vs. occasional (Ref.G)
4. Unit : ER/ICU/ OR vs. ward (Ref.G)
5. Type of hospital : public vs. private (Ref.G)
6. Level of hospital : medical center vs. regional (Ref.G)

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107年度專題研究計畫成果彙整表

計畫主持人：于淑		計畫編號：107-2629-B-010-001-			
計畫名稱：不同性別護理師之職涯發展軌跡與留任意願研究：一項三年期縱貫性研究					
成果項目		量化	單位	質化 (說明：各成果項目請附佐證資料或細項說明，如期刊名稱、年份、卷期、起訖頁數、證號...等)	
國內	學術性論文	期刊論文	0	篇	
		研討會論文	0		
		專書	0	本	
		專書論文	0	章	
		技術報告	0	篇	
		其他	0	篇	
國外	學術性論文	期刊論文	0	篇	
		研討會論文	0		博士班學生莊菁昀已將其中一份量表(護理能力量表)發展與測試之論文投至EAFFONS 2020 國際學術會議，獲得接受後並完成口頭學術論文發表；發長時與後均獲得與會國際學者很好的反應與迴響。
		專書	0	本	
		專書論文	0	章	
		技術報告	0	篇	
		其他	0	篇	
參與計畫人力	本國籍	大專生	0	人次	
		碩士生	0		
		博士生	1		莊菁昀；研究執行期間負責文獻蒐集整理，回顧與整理；負責聯絡研究事宜，負責與醫院與單位主管之聯繫，負責提供願意參與研究對象之協助；負責與協助專家會議；進行施測(一年分十二個月)，問卷之檢查與除錯，資料分析，協助研究成果報告整理與製作圖表等事務。
		博士級研究人員	0		
		專任人員	0		
	非本國籍	大專生	0		
		碩士生	0		
		博士生	0		
		博士級研究人員	0		
		專任人員	0		
其他成果 (無法以量化表達之成果如辦理學術活動)					

、獲得獎項、重要國際合作、研究成果國際影響力及其他協助產業技術發展之具體效益事項等，請以文字敘述填列。）