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PERCEPTIONS OF NURSING AS A CAREER AMONGST HEALTH-STUDIES STUDENTS AND UNIVERSITY-BASED NURSING STUDENTS

by

LAU Yuen Ching

Master of Science in Nursing

THE HONG KONG POLYTECHNIC UNIVERSITY

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Abstract

Background: Many students in health-related pre-nursing programmes desire to work in the nursing profession, whereas university nursing students may leave after graduation for other career opportunities. A better understanding of these students’ perceptions of nursing as a career may support effective career counseling and recruitment of suitable candidates to join the nursing profession.

Aims: The aim of this study was to investigate the perceptions of nursing as a career amongst health-studies students and university-based general nursing students in Hong Kong.

Methods: A cross-sectional survey was conducted with a convenience sampling of 562 students; including 279 health-studies students (49.6%) and 283 university-based general nursing students (50.4%) aged between 18 and 32 years using a self-developed Nursing Career Perception Questionnaire (NCPQ). The content validity index (CVI) was 0.92 and the Cronbach’s alpha coefficients were 0.88 for the Variables Influencing Perceptions of Nursing as a Career Scale (VIPNC Scale) (with subscales of 0.73 to 0.81) and 0.78 for the Perceptions of Nursing as a Career Scale (PNC Scale) (with subscales of 0.51 to 0.73). The test-retest reliability, repeated two weeks apart, ranged from 0.80 to 0.91 (p < 0.001).

Result: The three most positive perceptions of nursing as a career involved saving lives and helping people, the professionalism and importance of nursing, and unbiased gender roles. The three most negative perceptions were related to shift duty, the
dangers of possible contact with highly infectious patients, and how costly the nursing programme might be.

Positive correlations were found between the PNC and VIPNC scales for health-studies students \((r = 0.29, \ p < 0.001)\) and for university-based general nursing students \((r = 0.24, \ p < 0.001)\). Positive correlations were found between the PNC scale and the goal of choosing nursing as a career for health-studies students \((r = 0.31, \ p < 0.001)\), for university-based general nursing students \((r = 0.34, \ p < 0.001)\) and for overall \((r = 0.37, \ p < 0.001)\) indicating that the students with more positive perceptions of nursing as a career had a stronger intention of choosing nursing as a career.

University-based general nursing students had more health-related work experiences than health-studies students; they also had more positive perceptions of nursing as a career than the health-studies students \((t = -3.84, \ p < 0.001)\). However, only about half of them \((n = 139, \ 49.1\%)\) indicated that they would definitely choose general nursing as their career. The loyalty to nursing is not well established during the course of study.

Exploratory factor analyses were performed for the VIPNC and PNC scales. Four factors in the VIPNC scale ("Experience", "Contact with Professional", "Personal" "Significant Other") were established with loadings of \(\geq 0.40\) for 25 items and five factors in the PNC scale ("Professional", "Social" "Economic", "Occupational", "Educational") were also established with loadings of \(\geq 0.40\) for 29 of the 30 statements. The psychometric properties of the newly developed scales, Variables
Influencing Perceptions of Nursing as a Career Scale (VIPNC scale) and Perceptions of Nursing as a Career Scale (PNC scale), demonstrate that they are potentially valuable tools for assessing perception of nursing as a career and investigation of its influencing variables.

**Conclusion:** Both the health-studies students and the nursing students recruited for this study have potential to join the nursing profession. Students who have more positive perceptions of nursing have a stronger intention to choose nursing as a career. However, the loyalty to nursing is not well established among these students. Their responses give a general idea about both positive and negative perceptions of nursing as a career that nurse educators and administrators may find useful in career counseling and recruitment of suitable candidates to prevent wastage during and after the study of nursing.

**Keywords:** health-studies students, university-based general nursing students, perceptions of nursing as a career, goal to choose nursing as a career
Publications

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Chapter 1: Introduction

Nursing is an attractive job to many people. It provides the job security and employability which are the major reasons of people choosing nursing as their career especially in recent economic downturn (Buerhaus, Donelan, Norman, & Dittus, 2005; Cho, Jung, Jang, 2010). Cho et al. (2010) stated that many nursing students choose nursing particularly due to the job security of nursing rather than their favourites, therefore when their need of job security has been met by working as a nurse, they may not be satisfied anymore and may attrite their nursing job quickly because nursing is not their greatest aptitude and nor their favourites. Thus, even though nursing is attractive in a certain way to these people, these interested parties may leave the nursing profession when the unemployment problem is resolved (Cho et al., 2010). This may be supported by the high attrition rate amongst nurses in many countries such as United Kingdom, Australia, Canada, Taiwan (Canadian Nurses Association [CNA], 2003; Duffield, Aitken, O'Brien-Pallas, & Wise, 2004; Grainger & Bolan, 2006; Holtom & O’Neill, 2004; Huang, 2004). In recent years, Hong Kong has also witnessed an increasing trend in the turnover rate of nurses, from 3.2% in 2006/07 to 5.3% in 2010/11 in Hospital Authority, which is the largest nurse employer in Hong Kong (Hong Kong Legislative Council, 2011, May 6; Hospital Authority, 2011, May 24). The high dropout rate of 4.5% of 19,400 nurses working in Hospital Authority was recorded in 2007-2008; which was higher than that recorded in 2003-2004 during the severe acute respiratory syndromes (SARS) outbreak in Hong Kong (Chan & Lai, 2010 cited in South China Morning Post, 2008). According to the reports, many new nursing graduates intend to leave nursing profession within the first year of professional practice (Lai, Peng, & Chang, 2006; Price, 2009b). This is largely because their perceptions are not being valued, and many leave due to
unrealistic perceptions and unmet expectations (Grainger & Bolan, 2006; Lai et al., 2006). The students may experience incongruence between real clinical situations and professional practices that they indoctrinated (Price, 2009b). This role conflict is finally resolved either by readjusting to the role expectation or by leaving the nursing profession (Price, 2009b). The negative perceptions of nursing as a career may discourage potential candidates and nursing students from staying in nursing programmes. Today health-studies students can be tomorrow’s nursing care providers.

Success begins with effective career counseling and recruitment of suitable potential nursing students. Education with adequate understanding of students’ perception and expectation of nursing can better prepare future nurses. Effective career counseling in health-related higher diploma programs and pre-nursing associate degrees programs would be helpful to attract suitable potential candidates because many of these students desire to articulate nursing programs to join the nursing profession. Many countries share similar educational and career pathway, such as United Kingdom, U.S.A and Hong Kong (City of London College, 2013; Delaware County Community College, 2013; Education-Portal, 2013; HKU SPACE Community College, 2012; Hong Kong Community College, 2009; Vocational Training Council, 2012a). Effective recruitment of potential nursing students depends on better understanding of their perceptions of nursing as a career (Cho et al., 2010; Grainger & Bolan, 2006; Law & Arthur, 2003). The Chinese philosopher Sun Tzu said in the Art of War “If you know your enemies and know yourself, you can win a hundred battles without a single loss” (McNeilly, 2001). From the viewpoints of educators, to win a battle of helping potential and appropriate candidate to enter nursing programmes and to prevent wastage of nursing students in the nursing professions, better understanding of both groups of students’ perceptions of nursing as a career is crucial for success.
1.1 Significance of the Study

This research provides a better understanding of students’ perceptions of nursing as a career in Hong Kong. The findings regarding students’ positive and negative perceptions of nursing would provide a direction for future career counselling and recruitment processes. Likewise, the study provides a basis for future studies on the perceptions of nursing as a career amongst health-studies students educated in the vocational institutes and general nursing students from the universities in Hong Kong.
Chapter 2: Literature Review

The attractiveness of nursing as a career has proven quite controversial and diverse in the literature. Many students in health-related pre-nursing programmes desire to articulate the professional nursing programs and work in the nursing profession in many countries such as United Kingdom, U.S.A and Hong Kong (City of London College, 2013; Delaware County Community College, 2013; Education-Portal, 2013; HKU SPACE Community College, 2012; Hong Kong Community College, 2009; Vocational Training Council, 2012a). Whereas, many university nursing students may leave after graduation to chase other career opportunities. This is evidenced by the well-documented attrition rate amongst nurses in many countries such as United Kingdom, Australia, Canada, Taiwan (CNA, 2003; Duffield et al., 2004; Grainger & Bolan, 2006; Holtom & O’Neill, 2004; Huang, 2004). Thus, it is value to explore the perceptions of nursing held by potential candidates in pre-nursing programmes and university nursing students to enrich our understanding, facilitate effective recruitment, and better understand their desire and loyalty in the nursing profession. Many studies have been published on perceptions of nursing as a career worldwide, but they have been small in scale and local in nature. The following literature review summarises the perceptions of nursing as a career and the variables affecting that career choice.

2.1 Perceptions of Nursing as a Career and Variables Affecting This Career Choice

2.1.1 Job Nature & Status

Nursing is a humanitarian job. A nurse cares for and helps people (Foong, Rossiter, & Chan, 1999; Hemsley-Brown & Foskett, 1999; Larsen, McGill, & Palmer,
The most common reason that people report for choosing nursing as a career is that they like ‘helping people and saving lives’ (Hemsley-Brown & Foskett, 1999; Larsen et al., 2003; Price, 2009b). However, many do not choose nursing as a career because they are not interested in the field and they do not want to deal with the negative aspects such as dead people, unpleasant and low-skilled ‘dirty’ or ‘messy’ work, as well as the shift work lifestyle (Hemsley-Brown & Foskett, 1999; Stevens & Walker, 1993). Cho et al. (2010) also stated that altruism is declining when none of nursing students in the study thought serving society as the most influential variable.

The public have a lack of understanding of what a nurse does (Foong et al., 1999; Takase et al., 2006). Some school students and young children thought that nurses perform low skilled physical work to care for patients such as making beds, cleansing and feeding the patients, offer a helping hand to doctors, helping patient toileting and showers (Foong et al., 1999; Hemsley-Brown & Foskett, 1999). The public has an overall view thought that nursing role is to sit by the bedside, to hold patient’s hand, and to offer a cup of water (Takase et al., 2006). Many people respect doctors more than nurses (Foong et al., 1999). Nursing associated with shift work and low-skilled manual work makes the public perceived low status and image of nurses (Hemsley-Brown & Foskett, 1999; Takase et al., 2006). Hemsley-Brown & Foskett, (1999) stated that many young people believe that nursing is low-skilled ‘dirty’ or ‘messy’ work that makes it difficult to reach a higher position. The ‘invisibility’ of this career prospect weighs on the minds of most people; that is, they cannot see the top end of the career (Hemsley-Brown & Foskett, 1999). Many believe that nursing is made difficult by ‘ceilings’ to seniority and autonomy (Hemsley-Brown & Foskett, 1999).
They believe that ‘ward sister’ is the highest rank, achieved after 10-20 years in the job (Hemsley-Brown & Foskett, 1999). In recent years, the public image of nurses is improving due to the advancement of nursing towards professionalization and the transfer of nursing education from hospitals to universities (Takase et al., 2006). Current nursing shortage also leads nursing to higher pay, more jobs, and more respect (Buerhaus et al., 2005).

2.1.2 Salary, Job Security, Job Availability and Socioeconomic Issues

The socioeconomic status associated with salary may promote or inhibit particular career ambitions amongst individuals (Lent & Hackett, 1994). Regarding salary, some students thought that it would not be enough, having heard about the strike for higher nursing salaries and concluding that nurses must be under-paid (Hemsley-Brown & Foskett, 1999). In contrast, students from working-class families thought that a nurse’s salary sounds relatively attractive (Foong et al., 1999). The family income may affect the career decision of choosing nursing. The low-income group considers nursing as career more than those in higher-income group because nursing can provide employability and job security (Cho et al., 2010; Law and Arthur, 2003). Currently, nursing shortage associated with increased stress experiencing in the field has led to higher salaries and increased job security, which is attractive to lower income groups (Cho et al., 2010) and those recovering from layoffs (Buerhaus et al., 2005). Cho et al. (2010) stated that the job security and employability are the major reasons of many people choosing nursing as their career. Also, nursing can provide opportunities for employment overseas and emigration (Foong et al., 1999). This emigration seems to be a way to get out of the low status society (Foong et al., 1999).
2.1.3 Gender

Nursing has largely been known as a female-dominated profession (Foong et al. 1999; Hemsley-Brown & Foskett, 1999; Law & Arthur, 2003). Women are more likely to take role of caring for people (Hemsley-Brown & Foskett, 1999; Law & Arthur, 2003). Men are expected to be strong, brave, and less sympathetic than women (Hemsley-Brown & Foskett, 1999; Nicolson, 1996; Philpot, 2000). Male only contribute a small amount in the nursing workforce (Law & Arthur, 2003; Zysberg & Berry, 2005). However, some literature suggested that nursing is no longer a feminine job (Buerhaus et al., 2005; Hemsley-Brown & Foskett, 1999). It is not just open for female. According to Buerhaus and colleagues (2005), nursing is a good profession for men, but anyone who wants a secure job. In the contemporary sense, nursing has increasingly become a non-gender-specific profession (Hemsley-Brown & Foskett, 1999). There is a trend of increasing male joining nursing as a career. At the same time, female workers are expanding their field of work, choosing a wider range of jobs than ever before and aiming for a higher social status (Hemsley-Brown & Foskett, 1999). Girls express their interest in medicine; they will choose to become a doctor rather than to be a nurse (Hemsley-Brown & Foskett, 1999).

2.1.4 Academic Level

Self-efficacy is one’s belief in measuring one’s own ability to complete tasks, reach goals, and succeed in specific situations (Bandura, 1986; Ormrod, 2006). It can not only influence a person’s ability to face challenges competently but also influence their choices. People tend to choose careers that fit their past success and achievements as a way of maintaining their self-efficacy and ensuring future success (Bandura, 1986; Price, 2009a). Cho et al. (2010) stated that aptitude is a major
consideration of people in choosing their career. Students who have had greater achievements in science may perceive nursing as an easy course of study (Cho et al., 2010; Law & Arthur, 2003). However, students with high academic achievement would reluctant to pursue nursing as their career according to some reports (Neilson & Lauder, 2008). Some choose nursing unwillingly because they cannot achieve the academic standards to enter their preferred career choice (Cho et al., 2010; Neilson & Jones, 2011). Some may perceive nursing is easy to study, therefore they choose nursing unwillingly (Neilson & Jones, 2011). Many other students do not consider nursing because they believe that the educational requirements will be too difficult and costly (Kohler & Edwards, 1990). So, it is inconclusive to determine if academic standard or self-efficacy play a role in the career choice.

2.1.5 Familial and Social Issues

Advice from people that the students know such as relatives, friends, guidance professionals, career advisors, and nurses is important in shaping students’ decision to choose nursing (Buerhaus et al., 2005; Law & Arthur, 2003; Neilson & Jones, 2011; Price 2009b; Turner, 2011). Amongst all of the possible influences, fathers are reported as less likely to support their children to become a nurse, especially if the child is a teenage son (Buerhaus et al., 2005). The students’ experiences of contacting nurses also shape students’ mind in nursing field; such as having nurses as family member or relatives or friends, past experience of being ill or hospitalized, past experience being a visitor to hospital, past work experiences in a hospital including clinical practice (Lai et al., 2006; Law & Arthur, 2003). Direct interactions with nurses also provide a more realistic and deeper level of understanding regarding the
demands of nursing, which are reported as an influence affecting career choice (Law & Arthur, 2003; Lai et al., 2006; Price, 2009b).

2.1.6 Work Experience: Clinical and Volunteer

Clinical learning is a major element of nursing education despite of the nursing education setting and programmes (Lai et al., 2006; Wong & Lee, 2000). It is a critical issue determining the successful preparation of a professional competence nurse (Wong & Lee, 2000). Positive clinical experiences help to retain nurses in the work force (Larsen et al., 2003). Clinical experience has a potential effect on nursing students’ future career decisions (Abbey et al., 2006; Wong & Lee, 2000). Clinical experience is a critical issue of the professional socialization of nurses (Wong & Lee, 2000). It is a kind of professional socialization and professional development (Wong & Lee, 2000). Professional socialization is to learn skills, attitudes, and behaviours and to understand the values and norms in order to fulfill the roles and essence of the profession (Price, 2009b). In the process of professional socialization, there are always conflicts between theory and practice, ideal and reality (Wong & Lee, 2000). The real practices are usually not exactly what have been taught in schools (Price, 2009b; Wong & Lee, 2000). However, the students may experience incongruence between real clinical situations and professional practices of what they have learnt and indoctrinated (Price, 2009b). On one side, the students need to fit in the ward way to do the practice in order to meet the expectations of the ward staff (Wong & Lee, 2000). On the other side, the students need to pass their examination (Wong & Lee, 2000). If this theory-practice gap is not resolved, attrition may be resulted especially in the first year of study (Price, 2009b). Positive clinical experience confirms the value of nurses and encourages remaining in the profession (Larsen et al., 2003;
Wong & Lee, 2000). In contrast, a negative experience can push them leaving the profession (Larsen et al., 2003; Wong & Lee, 2000).

Past working experiences including volunteer work in a hospital setting or health-care organization experience demonstrates as early experience which can facilitate early interactions with nurses in various healthcare settings (Lai et al., 2006; Law & Arthur, 2003; Price, 2009b). The early socialization experiences provide a more realistic and deeper comprehension of the demand of nursing profession (Price, 2009b). It may influence students’ perceptions of nursing, their self-identification with the characteristics of nurses, and their eventual decision to choose the nursing profession (Price, 2009b). Usually, people who interested to help people to do volunteer work are more sympathetic and enthusiastic and may have potential work in nursing.
2.2 Social Cognitive Career Theory

A career theory might provide a better understanding of why people choose or reject nursing as a career. Thus, we used Social Cognitive Career Theory (SCCT) (Lent, Brown, & Hackett, 1994) (Figure 1) to design this study and guide the development of the instrument.

Social Cognitive Career Theory (Lent et al., 1994) was one of the career choice theories. This theory was adapted from Bandura’s Social Cognitive Theory, and another study done by Hackett and Betz (1981) regarding the implications of self-efficacy theory on women’s career (Bandura, 1986; Hackett & Betz, 1981; Lent et al., 1994; Lent & Hackett, 1994; Price, 2009a).

According to SCCT, people explore learning experiences based on “person inputs” and their “background contextual affordances” (Lent et al., 1994; Lent & Hackett, 1994; Swanson & Fouad, 2010). Person inputs are inherited affective and physical attributes such as gender, race, disability, and personality while background contextual affordances are the perceived background barriers or supports such as multiple individuals; familial, social, environmental influences, and experience (Lent et al., 1994; Lent & Hackett, 1994; Swanson & Fouad, 2010). The person inputs and background contextual affordances can be regarded as the distal influences of learning experiences (Swanson & Fouad, 2010). Other contextual affordances are contextual influences proximal to choice behaviour, which are the proximal barriers or supports affecting the implementation of choice goals and actions (Swanson & Fouad, 2010).
These learning experiences influence one’s self-efficacy beliefs and outcome expectations, which affect one’s interests, and all of them together influence one’s choice goals, affecting one’s choice actions which, in turn, influence one’s performance domains and attainments (Lent et al., 1994; Lent & Hackett, 1994; Swanson & Fouad, 2010).

Performance domains and attainments, including past performance accomplishments, influence learning experiences which, in turn, affect self-efficacy and the outcome expectations of future behaviour (Lent et al., 1994; Lent & Hackett, 1994; Swanson & Fouad, 2010). These will then affect the choice goal again (Lent et al., 1994; Lent & Hackett, 1994; Swanson & Fouad, 2010). This process repeats throughout people’s life spans until they stabilise their career interests in their mid-twenties and finalise their career choice decisions (Lent & Hackett, 1994). This theory also helps to explain students’ choice of the nursing profession because the students in this study are typically below mid-twenties and their career interests and choices tend not to have stabilized.
Figure 1: Predicting Vocational Choice in SCCT (Source: Lent, Brown, & Hackett, 1994)
2.3 Previous Instruments Used

There have been many studies investigating the perceptions of nursing as a career in other countries using a variety of questionnaires, such as the Nursing Orientation Tool (Vanhanen, Hentinen, & Janhonen, 1999), the Nursing Attitude Questionnaire (NAQ) (Toth, Dobratz, & Boni, 1998), and the Nursing Career Questionnaire (NCQ) (Law & Arthur, 2003).

2.3.1 Nursing Orientation Tool (Vanhanen, Hentinen, & Janhonen, 1999)

The nursing orientation tool has 17 items, consists of three sub-scales which concentrates at measuring nursing students’ caring, nursing profession, and life orientations (Vanhanen & Janhonen, 2000). The theta coefficient of the whole scale was 0.84, with alpha coefficient at 0.75 on the caring orientation subscale, 0.70 on the nursing expertise orientation scale and 0.74 on the life orientation subscale (Vanhanen & Janhonen, 2000). It has some statements such as: ‘I chose nursing because of the variety of jobs available’; ‘I applied to study nursing because I was going to become unemployed’ and ‘I would have applied to study here earlier, but it was possible because of where my family lived’ (Vanhanen & Janhonen, 2000). It is not applicable in the students studying vocational institute as they are still not nursing students.

2.3.2 Nursing Attitude Questionnaire (NAQ) (Toth, Dobratz, & Boni, 1998)

The nursing attitude questionnaire (NAQ) was modified by Toth et al. (1998) from a previous instrument established by Hoskins, L. M. (1983). The nursing attitude questionnaire (NAQ) consists of 30 items with 5 points Likert scale where 1 means strongly agree and 5 means strongly disagree, measuring the attitudes towards nursing including nursing roles, values, responsibilities, characteristics of nurses and
nursing, professionalism and stereotypes of society (Toth et al., 1998). The Cronbach’s alpha of nursing attitude questionnaire (NAQ) was 0.75 - 0.80 (Toth et al., 1998). However, the NAQ was normed on American nurses and is not culturally appropriate for Chinese nursing students.

2.3.3 Nursing Career Questionnaire (NCQ) (Law & Arthur, 2003)

The nursing career questionnaire (NCQ) has a scale measuring the perception of nursing as a career related to the career choice, consisting of 11 items with 4-point Likert scale; and a scale measuring the other influencing variables (Law & Arthur, 2003). The Cronbach’s alpha of nursing career questionnaire (NCQ) was 0.73 - 0.78 (Law & Arthur, 2003). However, this scale focuses only on Hong Kong Form 6 school students’ career choice with variable asking about ‘biology study’ (Law & Arthur, 2003) which is not appropriate to use in our study. Also, this scale has only 11 items which is not in depth enough to clarify students’ perception.

To conclude, the Nursing Orientation Tool (Vanhanen, et al., 1999) focuses exclusively on nursing students. The Nursing Attitude Questionnaire (NAQ) (Toth, et al., 1998) was designed for nurses working in the U.S., and may not be culturally appropriate for use amongst Chinese nursing students. The Nursing Career Questionnaire (NCQ) (Law & Arthur, 2003) focuses on traditional school children. Therefore, none of these questionnaires are applicable in this study, which explores both health-studies and nursing students.
2.4 Perceptions of Nursing as a Career amongst Health-Studies and University-Based Nursing Students Are Unknown

There are many health-related higher diploma programmes and pre-nursing associate degrees offered in Hong Kong and in many other countries such as the UK and the US (City of London College, 2013; Delaware County Community College, 2013; Education-Portal, 2013; HKU SPACE Community College, 2012; Hong Kong Community College, 2009; Vocational Training Council, 2012a). These programmes prepare learners for employment or articulate to further professional training in the health care and nursing sectors and while many of their graduates intend to join the nursing profession, many cannot achieve the academic standards required to enter into their preferred nursing programme. They may be very keen to become a nurse and try their best to enter into a nursing programme in the near future, whereas university-based general nursing students may enter into the profession, or may leave it after graduation in pursuit of other career opportunities (CNA, 2003; Duffield et al., 2004; Grainger & Bolan, 2006; Holtom & O’Neill, 2004; Huang, 2004). This is mainly because their perceptions are not being valued, and many leave due to unrealistic perceptions and unmet expectations (Grainger & Bolan, 2006; Lai et al., 2006). Therefore, it is necessary to prepare for the worst and hope for the best. A better understanding of potential candidates and nursing students’ perceptions of nursing as a career will early identify unrealistic perceptions of nursing as a career, facilitate effective recruitment and examine their desire to stay in the nursing profession (Cho et al., 2010; Grainger & Bolan, 2006; Price, 2009b).
2.5 Gap of Knowledge

In the large amount of research studies conducted internationally, there are both positive and negative perceptions about nursing being reported. Although the perceptions of nursing as a career have been broadly studied, previous studies have rarely examined the students in health-related higher diploma programmes and pre-nursing associate degrees. Nursing is a humanitarian job involving ‘helping people and saving lives’. It is necessary to recruit suitable candidates with caring hearts. Unfortunately, the perceptions held by pre-nursing health-studies students in the vocational institute regarding nursing as a career are unknown. The perceptions of nursing as a career held by general nursing students are also unclear in Hong Kong. Limited research in this area has been undertaken locally, it is high time for a comprehensive study of the perceptions of nursing as a career held by general nursing and health-studies students.
Chapter 3: Method

This chapter describes the research method used in this study. It begins with an introduction of the conceptual framework of this study. It also includes the research design, aim and objectives, setting, sampling, instrumentation, ethical considerations, data collection procedures and method of data analysis.

3.1 Conceptual Framework

The conceptual framework of this study (Figure 2) was modified based on an extensive literature review and the Social Cognitive Career Theory (SCCT) (Lent et al., 1994) (Figure 1). SCCT (Lent et al., 1994) was used to clarify the reported perceptions of nursing as a career and to guide the development of the instrument (Nursing Career Perception Questionnaire (NCPQ)) used in this study.

According to this conceptual framework, students’ personal data and demographic backgrounds influence their perceptions of nursing as a career and the self-evaluation of their academic performances in meeting the entry requirements of nursing programmes (the Registered Nurse and Enrolled Nurse Programmes). Students form perceptions by acquiring professional skills, attitudes, and behaviour. They begin to understand the values and norms required to fulfill the roles of the profession, also known as professional socialization and development (Price, 2009b; Wong & Lee, 2000). These socialization experiences not only help the nursing students increase their professional understanding, skills, and knowledge, but also influence their decision to become a nurse (Price, 2009a). Students also self-evaluate their academic performance as a perceived barrier or support to meeting the entry requirements of nursing programmes. How they perceive their performance affects
their goal of entering a nursing programme and of choosing nursing as a career.

Students then use the subsequent behaviour, such as practicing more health-related tasks and nursing skills, to achieve certain nursing-related performance attainments. They also evaluate their past and current performance attainments, which affect their perceptions of nursing as a career. This process repeats until the students finalise their career decisions to choose nursing or not.
Figure 2: Conceptual Framework for choosing nursing as a career is based on SCCT.

(Lent et al., 1994)
3.2 Research Design

This study used a relatively practical, economical, and easy to manage cross-sectional comparative and correlational descriptive design (Polit & Hungler, 1997). A convenience sampling method with a self-administrated newly-developed questionnaire (Nursing Career Perception Questionnaire (NCPQ)) was used for data collection.

3.3 Aim and Objectives

The aim of this study was to investigate the perceptions of nursing as a career amongst health-studies and university-based general nursing students in Hong Kong. The objectives were as follows:

1. To describe the socio-demographic characteristics of the participants (Part 1 of the NCPQ).
2. To describe the goal of choosing nursing as a career (Part 3 of the NCPQ).
3. To describe the variables influencing perceptions of nursing as a career (Part 4 of the NCPQ).
4. To describe the perceptions of nursing as a career (Part 5 of the NCPQ).
5. To compare the group differences in the variables influencing perceptions of nursing as a career (Part 4 of the NCPQ) between university-based general nursing students and health-studies students.
6. To compare the group differences in the perceptions of nursing as a career (Part 5 of the NCPQ) between university-based general nursing students and health-studies students.
(7) To examine the relationship between the perceptions of nursing as a career (Part 5 of the NCPQ) and the variables influencing the perceptions (Part 4 of the NCPQ).

(8) To examine the relationship between the perceptions of nursing as a career (Part 5 of the NCPQ) and the goal of choosing nursing as a career (Part 3 of the NCPQ, Question 2).

### 3.4 Operational Definition

For the purpose of this study, several operational definitions were applied.

(1) Students:

There were two groups of students in this study.

a. Health-studies students:

They were full-time health-related studies students studying in Higher Diploma in the health-related studies programmes of the Department of Applied Science at a vocational institution.

b. University-based general nursing students:

They were full-time general nursing students studying in Higher Diploma in a general nursing programme or a University Grants Committee (UGC) funded general nursing degree at a university.

(2) Perceptions of nursing as a career (PNC)

These were defined as the students’ perceptions of nursing in relation to aspects such as job nature, job status, salary, job security, and job availability as they relate to students’ learning experiences, self-efficacy beliefs, outcome
expectations, and interest in nursing as a career (Lent et al., 1994; Lent & Hackett, 1994; Swanson & Fouad, 2010).

(3) Goal of choosing nursing as a career

This included two variables: the goal of entering a nursing programme and the goal of choosing nursing as a career.

a. The goal of entering a nursing programme was defined as the students’ intention to study in a formal nursing programme such as a general or psychiatric registered nurse programme or a general or psychiatric enrolled nurse programme.

b. The goal of choosing nursing as a career was defined as the students’ intention to choose nursing as their career in the subsequent five years.

(4) Performance attainments towards nursing as a career

These were defined as students’ past and current performance attainments towards nursing as a career (Lent et al., 1994; Lent & Hackett, 1994). They were also part of the variables influencing perceptions of nursing as a career.

(5) Variables influencing perceptions of nursing as a career (VIPNC)

These were defined as variables, such as the students’ demographic backgrounds, experience, and performance attainments towards nursing as a career which influenced their perceptions of nursing as a career (Lent et al., 1994; Lent & Hackett, 1994; Swanson & Fouad, 2010).
(6) Students’ self-evaluation of academic performances

These were defined as the students’ self-evaluations of their academic performances needed to meet the entry requirements of nursing programmes (Registered and Enrolled Nursing Programmes), which affected their goals to enter such a programme or to choose nursing as a career.

(7) Self-efficacy

Self-efficacy was defined as one’s belief in measuring one’s own ability to complete tasks, reach goals, and succeed in specific situations (Bandura, 1986; Ormrod, 2006). It could influence both a person’s ability to face challenges competently and their choices.

3.5 Setting

This study was conducted at The Hong Kong Polytechnic University (PolyU) and the Hong Kong Institute of Vocational Education (Sha Tin) (IVE (Sha Tin)) in Hong Kong.

The sampling frame was as follows:

(1) Health-studies students:

They were full-time health-related studies students studying in Higher Diploma in the health-related studies programmes of the Department of Applied Science at IVE (Sha Tin).

(2) University-based general nursing students:

They were full-time general nursing students studying in Higher Diploma or a University Grants Committee (UGC) funded general nursing degree at Poly U.
3.6 Selection Criteria

The selection criteria for this study were as follows:

(1) Older than 18 years
(2) Full-time student
(3) Health-studies student attending the vocational institution
(4) University-based general nursing student

The exclusion criteria were as follows:

(1) Younger than 18 years
(2) Part-time student
(3) Psychiatric nursing student

3.7 Sampling

A convenience sampling method was used, due to time constraints and the availability of resources. To determinate the sample size for estimating means, the equation minimum sample size \( n = \left(\frac{Z_c \sigma}{E}\right)^2 / E^2 \) was used (Bartlett, Kotrlik, & Higgins, 2001). If the margin of error \( E \) is within 0.05 of the population mean in either direction and the confidence level is 0.05, then the Z score \( Z_c \) is 1.96. From the pilot test, the population standard deviation \( \sigma \) is about 0.28 in part 4 and 0.21 in part 5. Based on the above information, the minimum sample size would be 121 in part 4 and 68 in part 5. In combination, the minimum sample size would be 121 for each group. Five hundred and seventy students were surveyed using the newly developed Nursing Career Perception Questionnaire (NCPQ) and 562 of those questionnaires were valid to use.
The sample size for performing exploratory factor analysis was based on the number of variables in the scale being tested. Gorsuch (1983) suggested at least 100 sample. Comrey & Lee (1992) suggested sample size in factor analysis: 100 = poor, 200 = fair, 300 = good, 500 = very good, 1000 or more = excellent. For wide variation in the sample size recommendation, Costello & Osborne (2005) suggested that accuracy was greater in factor solutions with larger sample size for factor analysis. Costello & Osborne (2005) suggested that 60% accuracy for a 10:1 sample to item ratio and 70% accuracy for 20:1, compared to 40% accuracy for a 5:1 sample to item ratio. For part 4, the influencing variables subscale (VIPNC scale) has 25 items, 562 respondents would give a 22:1 ratio providing over 70% accuracy; while for part 5, the perception subscale (PNC scale) has 30 items, 562 respondents would give a 18:1 ratio providing 60 – 70% accuracy.
3.8 Instrumentation

This study used Chinese and English versions of the newly-developed Nursing Career Perception Questionnaire (NCPQ) (Appendices 1a and 1b) by researcher. The questionnaire items were modified according to an extensive literature review and based on the conceptual framework modified from Social Cognitive Career Theory (Lent et al., 1994). The questionnaire was divided into 5 parts. Part 1 explored the socio-demographic characteristics of the participants. Part 2 was the health-studies students’ self-evaluation of academic performances needed to meet the entry requirements of nursing programmes (Registered and Enrolled Nursing Programmes). Part 3 related to the goal of choosing nursing as a career. Part 4 was the Variables Influencing Perceptions of Nursing as a Career Scale (VIPNC Scale). Part 5 was the Perceptions of Nursing as a Career Scale (PNC Scale).

3.8.1 Part 1 – Socio-demographic characteristics of participants

There were ten questions about the students’ socio-demographic data, such as gender, age, course undertaken, average family income per month, any family member or relative or friend employed as a practicing nurse or in other health-related professions other than nursing, the total amount of health-care related work experiences (including practicum), the total amount of non-health-care related work experiences, and the average volunteer work per week.

3.8.2 Part 2 – Health-Studies Students’ Self-Evaluation of Academic Performance

Self-efficacy can affect the choice goal of the individual (Lent et al., 1994; Lent & Hackett, 1994; Swanson & Fouad, 2010). Students need to self-evaluate of their academic performances in meeting the entry requirements of nursing programmes.
before setting their goal of entering a nursing programme or of choosing nursing as a career. The health-studies students answered two self-evaluation questions, whereas the university-based nursing students having already entered the nursing programme were not required to answer this academic performance questions.

3.8.3 Part 3 – Goal of choosing nursing as a career

Students answered two questions regarding having a goal of entering a nursing programme or of choosing nursing as a career. The former was measured by asking the students about their favourite programme to gauge their intention to study through formal nursing programmes; such as registered nurse (general nursing) program, registered nurse (psychiatric nursing) program, enrolled nurse (general nursing) program, enrolled nurse (psychiatric nursing) program. The latter was measured by asking students about their intention to choose nursing as their career in the subsequent 5 years. Ordinal scale with 5 options such as “definitely yes”, “probably yes”, “undecided”, “probably no” and “definitely no” were given for students to show their preferences.

3.8.4 Part 4 – Variables Influencing Perceptions of Nursing as a Career Scale (VIPNC Scale)

Variables influencing students’ perceptions of nursing as a career were assessed. It was done by an influencing variables subscale (VIPNC scale). The VIPNC scale comprised 25 variables formulated in the form of a 5-point Likert scale to measure each item’s level of influence. The range consisted of the following levels: ‘1’ = ‘very negatively influenced’, ‘2’ = ‘negatively influenced’, ‘3’ = ‘no influence at all’ or ‘not applicable’, ‘4’ = ‘positively influenced’ and ‘5’ = ‘very positively influenced’.
Students who had not encountered some of these situations could choose ‘not applicable’. The mean score of each item was calculated such that the overall mean score of the VIPNC scale would be an average of the total mean of all 25 items, with a larger number indicating that the respondents had been more positively influenced.

### 3.8.5 Part 5 – Perceptions of Nursing as a Career Scale (PNC Scale)

Students’ perceptions of nursing as a career were assessed. It was done by a perception subscale (PNC scale). The PNC scale comprised 30 statements including gender concerns, academic requirements, salary, financial security, cost of studying nursing, etc. Question 1, 2, 3, 5, 7, 9, 11, 14, 15, 17, 20, 21, 23, 25, 26 and 29 were negatively phrased to test the consistency of participants. Both positive and negative sentiments were expressed to minimise the possibility of set responses, and all of the responses were rated on a 5-point Likert scale with the following levels: ‘1’ = ‘strongly disagree’, ‘2’ = ‘disagree’, ‘3’ = ‘neutral’, ‘4’ = ‘agree’, and ‘5’ = ‘strongly agree’. Participants who have positive perception should agree with the positive statements and disagree with the negative statements. The values of the negative response items were reversely coded and then the mean score of each statement was calculated. The overall mean score of the PNC scale was taken as an average of the total mean of all 30 statements, with a larger number indicating more positive perceptions.
3.9 Psychometric Properties of the NCPQ

The NCPQ was designed to measure the perceptions of nursing as a career amongst health-studies students studying in a vocational institute and general nursing students from a university in Hong Kong. Since the NCPQ is a newly self-developed instrument, the NCPQ was carefully undergone the process of instrument development that is face validity, content validity and test-retest reliability and instrument reliability (Dunning & Martin, 1996).

3.9.1 Validity Test

The validity is the degree to which the measurement process measures the variable that it claims to measure (Gravetter & Forzano, 2012). Face validity is the extent or degree to which the content of an instrument and its items is subjectively viewed relevant to the context in which the test is being administered or measured (Holden, 2010; Gravetter & Forzano, 2012). Whereas, content validity is the extent or degree to which an instrument has appropriate, relevant and representative samples of items for the construct that being measured (Haynes, Richard, & Kubany, 1995; Polit & Hungler, 1995). A common method to measure the content validity is the Content Validity Index (CVI) (Litwin, 1995).

The face and content validity of the bilingual version (the content validity index (CVI) (Appendix 2)), were assessed by a panel of five experts in related educational and clinical fields who are bilingual in Chinese and English: a nursing professor, two nursing lecturers, and two health-related professionals. Objectives and procedures of the study were explained to the panel of experts when the NCPQ was sent to them for validation. They were invited to determine and evaluate the degree of relevance of
each question, and give their expert comments on the instrument. A 4-point Likert scale, with ‘1’ = ‘not relevant at all’, ‘2’ = ‘not quite relevant’, ‘3’ = ‘quite relevant’ and ‘4’ = ‘very relevant’, was used to measure the relevance of each item. The number of items that rated ‘very relevant’ and ‘quite relevant’ were grouped together and then divided by the total number of items in the questionnaire (Litwin, 1995).

To be considered valid, an item in the questionnaire had to receive consensus from at least three of the five experts with CVI of item 0.6, indicating that it was very relevant or quite relevant to the study objectives. The CVI was 0.92, indicating an adequate level of inter-rater proportion agreement (Hartmann, 1977; House, House, & Campell, 1981). A CVI at levels of 0.70 or more is generally accepted as representing good validity (Litwin, 1995). Sixty-nine questions were used in the questionnaire and the English and Chinese versions were proof read. Phrases/wordings were revised as suggested from the panels to obtain more accurate expressions of the items. The excerpt recommended adding the term ‘your’ for all questions in part 4 to maintain the consistency of phrasing in the questionnaire of part 4. The sentences in part 3 question 1, 2; part 5 question 7, 9 were rewritten as suggested by the panels. Table 1a shows the details of the procedures used to calculate the CVI for the NCPQ.

Table 1a: Content Validity Index of Nursing Career Perception Questionnaire

<table>
<thead>
<tr>
<th>Panel member agreement on item relevance</th>
<th>CVI of item</th>
<th>Number of items (N = 69)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All agree</td>
<td>1</td>
<td>50</td>
</tr>
<tr>
<td>Four agree and one disagree</td>
<td>0.8</td>
<td>12</td>
</tr>
<tr>
<td>Three agree and two disagree</td>
<td>0.6</td>
<td>7</td>
</tr>
<tr>
<td>Two agree and three disagree</td>
<td>0.4</td>
<td>0</td>
</tr>
<tr>
<td>One agree and four disagree</td>
<td>0.2</td>
<td>0</td>
</tr>
<tr>
<td>All disagree</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Overall CVI = (1X50+0.8X12+0.6X7)/69 = 0.92
3.9.2 Construct Validity

An exploratory factor analysis using principal axis factoring was conducted to explore the factor structure and construct validity of the influencing variables subscale (VIPNC scale) (Part 4 of the NCPQ) and the perception subscale (PNC scale) (Part 5 of the NCPQ). Exploratory factor analysis is often used to analyse the structure of a set of variables (Pallant, 2007).

The Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) and Bartlett’s test of sphericity values were calculated and a principal components analysis with Varimax rotation was used to evaluate which linear components exist within the data and see how particular variables might contribute to that component (Kaiser, 1958). Given that the VIPNC and PNC scales are newly-developed by researcher and had not been previously tested, the exploratory factor analysis was believed to be more appropriate than a confirmatory factor analysis. A KMO measure of sampling adequacy values above 0.6 is accepted as the cut-off, and 0.80 or more is generally considered suitable for factor analysis (Kaiser, 1970; Kaiser, 1974). Eigenvalues above one were used for analysis (Kaiser, 1960). The scree plot was used. The cut-off point for factor selection was set at the point of inflexion for the scree plot curve (Cattell, 1966). Missing values replaced with means were used to form the correlation matrix for the analysis.

A factor analysis assesses the individual items on a scale clustered together around one or more dimensions. Items measured as being in the same dimension are believed to load on the same factor while those in different dimensions load on different factors (Polit & Hungler, 1997). Once a factor structure has been found, it is
important to decide which variables represent which factors. Hair, Anderson, Tatham and Black (1998) suggested that a sample size of 350 with a factor loading of 0.30 can be considered as significant. Stevens (2002) also suggested that 300 with a loading of 0.298, 600 with a factor loading of 0.21, and 1000 with a factor loading of 0.162 can be considered significant. These values are based on an alpha level of 0.01 (two-tailed). With a sample size of 562, this study would use a loading of 0.30 to consider the significance of a factor loading. An analysis of the overall VIPNC and PNC scales and their identified factors for reliability was also undertaken using the Cronbach’s alpha coefficient.
3.9.3 Reliability Test

Test-Retest Reliability

Reliability is a statistical measure to test the consistency and stability of a measuring instrument (Jackson, 2009). Test-retest reliability indicates the stability of ratings of the same individual at two different times with the same situation (Jackson, 2009). It is the most common used and obvious way to test the reliability.

The test-retest reliability of the instrument was tested before the data were collected. Twenty health-studies students attending the IVE (Sha Tin) and 26 university-based general nursing students attending PolyU were asked to complete the questionnaire, and then asked to do it again two weeks later. This time interval was used to avoid the effects of memory but to ensure the minimal change of attitude within the short period of time. The test-retest reliability ranged from 0.80 to 0.93 (p < 0.001) and 0.74 to 0.85 (p < 0.001) amongst the IVE and PolyU students, respectively. The overall test-retest reliability repeated in 2 weeks apart ranged from 0.80 to 0.91 (p < 0.001) (Table 1b).

Table 1b: Test-Retest Reliability of NCPQ, Repeated 2 Weeks Later

<table>
<thead>
<tr>
<th></th>
<th>Test-retest reliability, repeated two weeks later with IVE students (20):</th>
<th>Test-retest reliability, repeated two weeks later with PolyU students (26):</th>
<th>Overall test-retest reliability:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part 2 Q1</td>
<td>r = 0.93, (p &lt; 0.001)</td>
<td>r = 0.85, (p &lt; 0.001)</td>
<td>r = 0.91, (p &lt; 0.001)</td>
</tr>
<tr>
<td>Part 2 Q2</td>
<td>r = 0.80, (p &lt; 0.001)</td>
<td>r = 0.77, (p &lt; 0.001)</td>
<td>r = 0.80, (p &lt; 0.001)</td>
</tr>
<tr>
<td>Part 3 Q1</td>
<td>Cramer’s V = 0.85, (p &lt; 0.001)</td>
<td>Cramer’s V = 0.799, (p &lt; 0.001)</td>
<td>Cramer’s V = 0.82, (p &lt; 0.001)</td>
</tr>
<tr>
<td>Part 3 Q2</td>
<td>r = 0.94, (p &lt; 0.001)</td>
<td>r = 0.81, (p &lt; 0.001)</td>
<td>r = 0.88, (p &lt; 0.001)</td>
</tr>
<tr>
<td>Part 4 VIPNC Scale</td>
<td>r = 0.91, (p &lt; 0.001)</td>
<td>r = 0.83, (p &lt; 0.001)</td>
<td>r = 0.87, (p &lt; 0.001)</td>
</tr>
<tr>
<td>Part 5 PNC Scale</td>
<td>r = 0.83, (p &lt; 0.001)</td>
<td>r = 0.74, (p &lt; 0.001)</td>
<td>r = 0.80, (p &lt; 0.001)</td>
</tr>
<tr>
<td>Test-retest reliability, repeated two weeks later</td>
<td>r = 0.80 - 0.93, (p &lt; 0.001)</td>
<td>r = 0.74 - 0.85, (p &lt; 0.001)</td>
<td>r = 0.80 - 0.91, (p &lt; 0.001)</td>
</tr>
</tbody>
</table>
**Internal Consistency (Cronbach’s Alpha Coefficient)**

The reliability of the questionnaire was also assessed by evaluating its internal consistency using the Cronbach’s alpha coefficient. Internal consistency is the degree of which a set of items in the instruments to measure the same concept are inter-correlated (Litwin, 1995). As this coefficient was subjected to the number of items being tested, there were two scales: the influencing variables subscale (VIPNC) (Part 4 of the NCPQ) with 25 items and the perception subscale (PNC) (Part 5 of the NCPQ) with 30 items. The calculated Cronbach’s alpha values were 0.88 for the VIPNC scale and 0.78 for the PNC scale. Therefore, Cronbach’s alpha α ranged from 0.78 to 0.88 (Table 1c). A Cronbach’s alpha value of 0.70 or more is generally accepted as representing good reliability (Litwin, 1995).

**Table 1c: Internal Consistency of Nursing Career Perception Questionnaire**

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s alpha (α)</th>
<th>Number of items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part 4 VIPNC Scale</strong></td>
<td>0.88</td>
<td>25</td>
</tr>
<tr>
<td><strong>Part 5 PNC Scale</strong></td>
<td>0.78</td>
<td>30</td>
</tr>
</tbody>
</table>
3.10 Ethical Considerations

Ethical approval was sought from the Human Subjects Ethics sub-committee in the School of Nursing at The Hong Kong Polytechnic University (Appendix 5). Formal approval for data collection for research was also sought from the Department Head of Applied Science at the IVE (Sha Tin) (Appendix 6). A full explanation of the nature, purpose, and procedure of the self-administered questionnaire was given to the participants by the investigator. The name and contact telephone numbers of the investigators were enclosed in the information sheet for future contact if necessary.

The survey packets distributed to each participant contained an information sheet (Appendices 3a and 3b), a consent form (Appendices 4a and 4b), two stamped, self-addressed envelopes, and a set of anonymous and self-administered questionnaires. The participants were advised to return the completed questionnaire and the signed consent form in separate envelopes by putting them directly in the collection box. No financial incentives were offered and participation was on a voluntary basis. Anonymity and confidentiality were ensured to reduce self-report bias (Polit & Hungler, 1997). Upon returning of completed questionnaires, the participants were considered to have given implicit consent to the study without returning a signed consent form. As suggested by the Ethical Committee Board of PolyU, the names of participants should not be identified when collecting the questionnaire. As the anonymous questionnaire and consent forms with names of participants were collected separately in different envelopes, the participants could not be identified. This can also enhances the validity of the data collected. The participants had the right to refuse or withdraw from the study at any time without any adverse consequences. All of the information collected was treated with strict confidentiality. They were
stored in a locked cupboard. Data obtained were only be used by the researcher in the study and would be destroyed at the end of the research.

### 3.11 Pilot Study

Prior to the main study, a pilot study was conducted. Forty-six students, including 20 health-studies students at the IVE (Sha Tin) and 26 university-based general nursing students at PolyU who met the sample selection criteria were voluntarily invited to participate in the pilot study. The aim of this pilot study was to test the acceptability, clarity, and feasibility of the instrument and to identify possible areas of caution in the actual data collection process. The logistics and procedures of the study were also checked in this pilot study. All 46 of the students completed the pilot test and the time needed to fill out the self-administrated questionnaire was assessed. The time used to complete the questionnaire was about 20 minutes. Only a few wordings related to the instruction in part 2 were revised as suggested from the participants in the pilot study to ensure clear expressions of the instrument. The participants in the pilot study were excluded from the main study.

### 3.12 Main Study

Once the pilot study had been completed, the process of data collection was carried out at PolyU and the IVE (Sha Tin). The survey packets were distributed to the students during the last 20 minutes of the class being conducted in the data collection period. A collection box was placed on the teacher’s desk inside the classroom. For year 4 students at PolyU who do not have formal class, the survey packets were distributed during the debriefing session of a clinical placement. A collection box was placed in the same venue for completed questionnaires. A full explanation of the
nature, purpose, and procedure of the self-administered questionnaire was given to the
students by the investigator. Students were advised to sign the consent and complete
the anonymous and self-administered questionnaire voluntarily. When the students
completed the questionnaires voluntarily, they were advised to return the completed
questionnaire and the signed consent form in separate envelopes by placing them
directly in the collection box. Afterwards, the teacher returned the collection box to
the researcher. The data collection period lasted from May to October 2012.
3.13 Data Analysis Plan

The Statistical Package for Social Sciences Windows version 17 was used to analyse the quantitative data. The significance level was set at p < 0.05.

Descriptive statistics such as mean, standard deviation, and frequency were performed to report the socio-demographic characteristics of participants, the students’ status of having family members, relatives, or friends employed as a practicing nurse or in other health-related careers, and describe the responses of both student groups towards VIPNC Scale and PNC Scale.

Chi square test ($\chi^2$) is a nonparametric statistic and is used to investigate whether distributions of nominal (categorical) variables differ from one another (Peat, Barton, & Elliott, 2008). Chi-square tests ($\chi^2$) were used to compare the group differences between general nursing and health-studies students in the socio-demographic characteristics of participants, the students’ status of having family members, relatives, or friends employed as a practicing nurse or in other health-related careers.

T-test is used to compare the mean value between two study groups and its p value from the t-test means there is statistically significant difference between the mean values (Peat et al., 2008). The t-test was used to compare the group differences between general nursing and health-studies students in the mean scores of individual variables in the VIPNC (Part 4 of the NCPQ) and PNC scales (Part 5 of the NCPQ) and in the overall mean scores of the VIPNC (Part 4 of the NCPQ) and PNC scales (Part 5 of the NCPQ).
Pearson Product-Moment Correlation is used to describe the relationship between interval or ratio variables that allows you to make predictions from one variable to another variable (Jackson, 2009). Pearson’s correlation test was used to examine the relationship between the overall mean scores of the PNC (Part 5 of the NCPQ) and VIPNC scales (Part 4 of the NCPQ).

Spearman's rank correlation is a nonparametric measure to describe the relationship between two variables (Jackson, 2009). Spearman’s correlation test was used to examine the relationship between the overall mean score of the PNC scale (Part 5 of the NCPQ) and different variables such as the mean scores of individual variables in the VIPNC scale (Part 4 of the NCPQ), or the goal of choosing nursing as a career (Part 3 of the NCPQ, Question 2).

An exploratory factor analysis using principal axis factoring was conducted to explore the construct validity and factor structure of the influencing variables subscale (VIPNC scale) (Part 4 of the NCPQ) and the perception subscale (PNC scale) (Part 5 of the NCPQ). Exploratory factor analysis is often used to analyse the structure of a set of variables (Pallant, 2007). An analysis of the overall VIPNC and PNC scales and their identified factors for reliability were also undertaken using the Cronbach’s alpha coefficients.
Chapter 4: Results

This chapter presents the main findings of the study. Analyses were performed to attempt to fulfill the aim and objectives in Chapter Three.

4.1 Subject recruitment

Five hundred eighty-five questionnaires were distributed in this study, 570 of which were returned for a return rate of 97%. Eight questionnaires were excluded from the study because five were completed by psychiatric nursing students, two had lots of missing data, and one was completed by a participant who was below 18 years old. Therefore, 562 questionnaires were used for data analysis.

4.2 Socio-Demographic Characteristics of Participants (Part 1 of the NCPQ) (Objective 1)

Table 2 displays the details of the participants’ socio-demographic characteristics. The total of respondents (n) was 562 and included health-studies students attending a vocational institute (n = 279, 49.6%) and general nursing students attending a university (n = 283, 50.4%) (Table 2). All of the participants were Chinese. The mean age of all of the samples was 20.54 (Standard Deviation [SD] = 1.41). For the 279 health-studies students, they were aged 18 to 24 years. The mean age of health-studies students was 19.94 (SD = 1.29). For the 283 general nursing students, they were aged 19 to 32 years. The mean age of general nursing students was 21.13 (SD = 1.28). There is significant difference in the mean age between health-studies students and university-based general nursing students (t = -10.98, p = < 0.001). But, no significant differences were found in this study in gender distribution in both students groups ($\chi^2 = 0.32; p = 0.571$). More were female (n = 375, 66.7%) than male (n = 187, 33.3%).
As illustrated in table 2, for the 279 health-studies students, 29.0% of the students surveyed were in their first year (n = 81), 17.9% were in their second year (n = 50), 34.8% were in their third year (n = 97), and 18.3% were in their fourth year (n = 51). *(The year 4 health-studies students were the students of a 4-year Higher Diploma in Health Services and Administration Programme, in which this program has the year 1 equivalent to foundation diploma qualification and year 2 to year 4 equivalent to higher diploma qualification, and this is a facing out programme.)* While for the 283 general nursing students, 29.0% of the students surveyed were in their first year (n = 82), 27.9% were in their second year (n = 79), 30.0% were in their third year (n = 85), and 13.1% were in their fourth year (n = 37) *(Year 4 nursing students were having clinical practicum without formal classes during the period of data collection).*

Socioeconomic status may promote or inhibit particular career ambitions *(Lent & Hackett, 1994).* Nearly half of all of the samples (n = 250, 45.7%) had an average monthly household income of HKD$10000 to $19999 (Table 2). This result was consistent with the Hong Kong statistic report that the median monthly domestic household income for 2010 was $18,000 *(Hong Kong Census and Statistics Department, 2012, January).* The health-studies students had lower household income than the university-based students ($\chi^2 = 24.84; p < 0.001$). Near twenty-five per cent (n = 68, 24.9%) of health-studies students had an average monthly household income below HKD$9999; while only 12.8% of university-based students (n = 35) had an average monthly household income below HKD$9999. Forty-eight per cent (n = 133,
48.7% of health-studies students and 42.7% of university-based students (n = 117) had an average monthly household income of HKD$10000 to $19999.
Table 2: Socio-Demographic Characteristics of Participants

<table>
<thead>
<tr>
<th></th>
<th>Health-studies students</th>
<th>University-based general nursing students</th>
<th>Total</th>
<th>Chi Sq</th>
<th>t-test</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 279)</td>
<td>(n = 283)</td>
<td>(N = 562)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>n (</strong>)**</td>
<td><strong>n (%)</strong></td>
<td><strong>n (%)</strong></td>
<td><strong>N (%)</strong></td>
<td><strong>χ²</strong></td>
<td><strong>p value</strong></td>
<td></td>
</tr>
<tr>
<td>Total no. of participants</td>
<td>279 (49.6)</td>
<td>283 (50.4)</td>
<td>562 (100.0)</td>
<td>0.32</td>
<td>0.571</td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>183 (65.6)</td>
<td>192 (67.8)</td>
<td>375 (66.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>96 (34.4)</td>
<td>91 (32.2)</td>
<td>187 (33.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Age</td>
<td>19.94</td>
<td>21.13</td>
<td>20.54</td>
<td>-10.98</td>
<td>&lt; 0.001***</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>1.29</td>
<td>1.28</td>
<td>1.41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age Range</td>
<td>18 - 24</td>
<td>19 - 32</td>
<td>18 - 32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year of study</td>
<td></td>
<td></td>
<td>9.52</td>
<td>0.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 1</td>
<td>81 (29.0)</td>
<td>82 (29.0)</td>
<td>163 (29.0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2</td>
<td>50 (17.9)</td>
<td>79 (27.9)</td>
<td>129 (23.0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 3</td>
<td>97 (34.8)</td>
<td>85 (30.0)</td>
<td>182 (32.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 4****</td>
<td>51 (18.3)</td>
<td>37 (13.1)</td>
<td>88 (15.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average monthly household income (HKD$)</td>
<td></td>
<td></td>
<td>24.84</td>
<td>&lt; 0.001***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$ \leq 9999$</td>
<td>68 (24.9)</td>
<td>35 (12.8)</td>
<td>103 (18.8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10000 - 19999$</td>
<td>133 (48.7)</td>
<td>117 (42.7)</td>
<td>250 (45.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$20000 - 29999$</td>
<td>42 (15.4)</td>
<td>66 (24.1)</td>
<td>108 (19.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$30000 - 39999$</td>
<td>18 (6.6)</td>
<td>35 (12.8)</td>
<td>53 (9.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$ \geq 40000$</td>
<td>12 (4.4)</td>
<td>21 (7.7)</td>
<td>33 (6.0)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The total number of participants by variables varied due to missing data. All of the percentages are corrected to one decimal place, and total percentage may not equal 100% due to rounding up.

*p ≤ 0.05, **p ≤ 0.01, and ***p ≤ 0.001

**** The year 4 health-studies students were the students of 4-year Higher Diploma in Health Services and Administration, in which this program has the year 1 equivalent to foundation diploma qualification and year 2 to year 4 equivalent to higher diploma qualification and it is a facing out programme.
4.3 Students’ Status of Having Family Members, Relatives, or Friends Employed as Practicing Nurses or in Other Health-Related Careers

Students’ contacts with and advice from nursing and other health-care professionals were reported as important influential variables affecting their career choices (Law & Arthur, 2003; Price, 2009b). However, no significant differences were found in this study in having family members, relatives, or friends employed as practicing nurses ($\chi^2 = 1.94; p = 0.164$) or in other health-related careers ($\chi^2 = 1.95; p = 0.162$). One hundred and ninety-one respondents (34.0%) had family members, relatives, or friends employed as practicing nurses, while two hundred and twenty-three respondents (39.8%) had family members, relatives, or friends employed in other health-related careers. Table 3 provides a description of this status.

Table 3: Students’ Status of Having Family Members, Relatives, or Friends Employed as a Practicing Nurse or in Other Health-Related Careers

<table>
<thead>
<tr>
<th></th>
<th>Health-studies students (n = 279)</th>
<th>University-based general nursing students (n = 283)</th>
<th>Total (N = 562)</th>
<th>Chi Sq</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having family members, relatives, or friends employed as practicing nurses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>87 (31.2)</td>
<td>104 (36.7)</td>
<td>191 (34.0)</td>
<td>1.94</td>
<td>0.164</td>
</tr>
<tr>
<td>No</td>
<td>192 (68.8)</td>
<td>179 (63.3)</td>
<td>371 (66.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having family members, relatives, or friends employed in other health-related careers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>119 (42.7)</td>
<td>104 (36.9)</td>
<td>223 (39.8)</td>
<td>1.95</td>
<td>0.162</td>
</tr>
<tr>
<td>No</td>
<td>160 (57.3)</td>
<td>178 (63.1)</td>
<td>338 (60.2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The total number of participants by variables varied due to missing data. All of the percentages are corrected to one decimal place, and total percentage may not equal 100% due to rounding up. *p ≤ 0.05, **p ≤ 0.01, and ***p ≤ 0.001
4.4 Participants’ Work Experience

A participant’s work experience such as volunteer, clinical, and non-clinical jobs have been identified as influential variables in career decisions about nursing (Buerhaus et al., 2005; Lai et al., 2006; Law & Arthur, 2003). The health-studies students reported having engaged in more volunteer work than the university-based students ($\chi^2 = 31.52; \ p < 0.001$). Seventy-seven per cent of health-studies students (n = 214, 77.0%) had engaged in volunteer work while 54.6% of university-based nursing students (n = 154) had engaged in volunteer work.

The health-studies students also reported less health care-related work experiences ($\chi^2 = 78.56; \ p < 0.001$) and more non-health care-related work experiences ($\chi^2 = 9.67; \ p = 0.008$) than the university-based nursing students. Thirty-three per cent of health-studies students (n = 92, 33.0%) had no health care-related work experiences at all, while only twelve university-based nursing students (4.2%) had no health care-related work experiences at all. Near 80% of health-studies students (n = 223, 79.9%) and near 70% of university-based nursing students (n =197, 69.6%) had non-health care-related work experiences. Table 4 provides a description of the surveyed participants’ work experience.
Table 4: Participants’ Work Experience

<table>
<thead>
<tr>
<th>Health-studies students</th>
<th>University-based general nursing students</th>
<th>Total</th>
<th>Chi Sq</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n = 279)</td>
<td>(n = 283)</td>
<td>(N = 562)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td>Volunteer Work</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(hrs/wk)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No experience at all</td>
<td>64 (23.0)</td>
<td>128 (45.4)</td>
<td>192 (34.3)</td>
<td>31.52 &lt; 0.001***</td>
</tr>
<tr>
<td>≤ 6 hours/week</td>
<td>172 (61.9)</td>
<td>128 (45.4)</td>
<td>300 (53.6)</td>
<td></td>
</tr>
<tr>
<td>&gt;6 hours/week</td>
<td>42 (15.1)</td>
<td>26 (9.2)</td>
<td>68 (12.1)</td>
<td></td>
</tr>
<tr>
<td>Health care-related work experiences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n = 279)</td>
<td>(n = 283)</td>
<td>(N = 562)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td>No experience at all</td>
<td>92 (33.0)</td>
<td>12 (4.2)</td>
<td>104 (18.5)</td>
<td></td>
</tr>
<tr>
<td>≤ 6 months</td>
<td>157 (56.3)</td>
<td>239 (84.5)</td>
<td>396 (70.5)</td>
<td></td>
</tr>
<tr>
<td>&gt;6 months</td>
<td>30 (10.8)</td>
<td>32 (11.3)</td>
<td>62 (11.0)</td>
<td></td>
</tr>
<tr>
<td>Non-health care-related work experiences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n = 279)</td>
<td>(n = 283)</td>
<td>(N = 562)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td>No experience at all</td>
<td>56 (20.1)</td>
<td>86 (30.4)</td>
<td>142 (25.3)</td>
<td></td>
</tr>
<tr>
<td>≤ 6 months</td>
<td>101 (36.2)</td>
<td>102 (36.0)</td>
<td>203 (36.1)</td>
<td></td>
</tr>
<tr>
<td>&gt;6 months</td>
<td>122 (43.7)</td>
<td>95 (33.6)</td>
<td>217 (38.6)</td>
<td></td>
</tr>
</tbody>
</table>

The total number of participants by variables varied due to missing data. All of the percentages are corrected to one decimal place, and total percentage may not equal 100% due to rounding up. *p ≤ 0.05, **p ≤ 0.01, and ***p ≤ 0.001
4.5 Health-Studies Students’ Self-Evaluation of the Academic Performance Required to Meet the Entry Requirements of Nursing Programmes (RN/EN) (Part 2 of the NCPQ)

Students need to self-evaluate of their academic performances in meeting the entry requirements of nursing programmes before setting their goal of entering a nursing programme or of choosing nursing as a career. The health-studies students answered two self-evaluation questions, whereas the university-based nursing students having already entered the nursing programme were not required to answer the academic performance questions. Fewer of the health-studies students (n = 81, 29.1%) perceived themselves as capable of meeting the entry requirements of registered nursing programmes. Around 40.9% (n = 114) thought that they could either definitely or probably not meeting the entry requirements. In response to the similar question regarding the entry requirements of enrolled nursing programmes, more health-studies students (n = 173, 62%) thought that they could meet the entry requirements of such programs (an enrolled nurse is similar to a licensed practice nurse in many countries). Only 11.8% (n = 33) thought that their academic performance would definitely or probably not meeting the entry requirements of enrolled nursing programmes. The remainder of the respondents did not know whether they were capable in relation to the requirements of registered (n = 84, 30.1%) and enrolled nursing programmes (n = 73, 26.2%). Table 5 summaries the health-studies students’ self-evaluations (Part 2 of the NCPQ).
Table 5: Health-Studies Students’ Self-Evaluations of their Academic Performance in Meeting the Entry Requirements of Nursing Programmes (RN/EN) (Part 2 of the NCPQ)

<table>
<thead>
<tr>
<th>Health-Studies Students’ Self-Evaluations of their Academic Performance in meeting RN requirements</th>
<th>Health-Studies Students’ Self-Evaluations of their Academic Performance in meeting EN requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n = 279)</td>
<td>(n = 279)</td>
</tr>
<tr>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td><strong>Definitely Not Meet</strong></td>
<td><strong>Definitely Not Meet</strong></td>
</tr>
<tr>
<td>25 (9.0)</td>
<td>5 (1.8)</td>
</tr>
<tr>
<td><strong>Probably Not Meet</strong></td>
<td><strong>Probably Not Meet</strong></td>
</tr>
<tr>
<td>89 (31.9)</td>
<td>28 (10.0)</td>
</tr>
<tr>
<td><strong>Unknown</strong></td>
<td><strong>Unknown</strong></td>
</tr>
<tr>
<td>84 (30.1)</td>
<td>73 (26.2)</td>
</tr>
<tr>
<td><strong>Probably Meet</strong></td>
<td><strong>Probably Meet</strong></td>
</tr>
<tr>
<td>63 (22.6)</td>
<td>114 (40.9)</td>
</tr>
<tr>
<td><strong>Definitely Meet</strong></td>
<td><strong>Definitely Meet</strong></td>
</tr>
<tr>
<td>18 (6.5)</td>
<td>59 (21.1)</td>
</tr>
</tbody>
</table>

All of the percentages are corrected to one decimal place.
4.6 Goal of Choosing Nursing as a Career (Part 3 of the NCPQ) (Objective 2)

Students answered questions regarding having a goal of entering a nursing programme or of choosing nursing as a career. The majority of those surveyed in the health-studies student group (n = 259, 92.8%) chose various nursing programmes as their favourites, including general registered (n = 103, 36.9%), psychiatric registered (n = 61, 21.9%), general enrolled (n = 63, 22.6%), and psychiatric enrolled (n = 32, 11.5%). Only 7.2% (n = 20) chose other programmes such as dispenser courses and health education programmes. Overall, 23.7% (n = 66) reported that they would definitely and 52.7% (n = 147) reported that they would probably choose nursing as their career.

For the university-based student group, 89.8% (n = 254) selected general registered nursing programmes and 5.3% (n = 15) selected psychiatric registered nursing programmes as their favourite course. Only about 3.5% (n = 10) chose other programmes such as radiotherapy, biology, and journalism. When asked about their intention to work in the nursing profession, surprisingly only 49.1% of the university-based students (n = 139) reported that they would definitely choose nursing as their career. The others (n = 131, 46.3%) reported that they would probably choose nursing as their future career, even though they were currently studying in the field. Table 6 summarizes the choice goals of the respondents.
### Table 6: Goal of Choosing Nursing as a Career

<table>
<thead>
<tr>
<th></th>
<th>Health-studies students (n = 279)</th>
<th>University-based general nursing students (n = 283)</th>
<th>Total (N = 562)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>n (%)</strong></td>
<td><strong>n (%)</strong></td>
<td><strong>n (%)</strong></td>
<td><strong>N (%)</strong></td>
</tr>
<tr>
<td><strong>Your Most Favourite Course</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RN (Gen)</td>
<td>103 (36.9)</td>
<td>254 (89.8)</td>
<td>357 (63.5)</td>
</tr>
<tr>
<td>RN (Psy)</td>
<td>61 (21.9)</td>
<td>15 (5.3)</td>
<td>76 (13.5)</td>
</tr>
<tr>
<td>EN (Gen)</td>
<td>63 (22.6)</td>
<td>3 (1.1)</td>
<td>66 (11.7)</td>
</tr>
<tr>
<td>EN (Psy)</td>
<td>32 (11.5)</td>
<td>1 (0.4)</td>
<td>33 (5.9)</td>
</tr>
<tr>
<td>Other Non-nursing Courses</td>
<td>20 (7.2)</td>
<td>10 (3.5)</td>
<td>30 (5.3)</td>
</tr>
<tr>
<td><strong>Choosing nursing as their career</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Definitely Not Choose</td>
<td>4 (1.4)</td>
<td>0 (0.0)</td>
<td>4 (0.7)</td>
</tr>
<tr>
<td>Probably Not Choose</td>
<td>18 (6.5)</td>
<td>2 (0.7)</td>
<td>20 (3.6)</td>
</tr>
<tr>
<td>Undecided</td>
<td>44 (15.8)</td>
<td>11 (3.9)</td>
<td>55 (9.8)</td>
</tr>
<tr>
<td>Probably Choose</td>
<td>147 (52.7)</td>
<td>131 (46.3)</td>
<td>278 (49.5)</td>
</tr>
<tr>
<td>Definitely Choose</td>
<td>66 (23.7)</td>
<td>139 (49.1)</td>
<td>205 (36.5)</td>
</tr>
</tbody>
</table>

*All percentages are corrected to one decimal place.*
4.7 Variables Influencing Perceptions of Nursing as a Career (Part 4 of the NCPQ) (Objective 3)

Students’ variables influencing perceptions of nursing as a career were assessed. It was done by a VIPNC scale. The VIPNC scale comprised 25 variables formulated in the form of a 5-point Likert scale to measure each item’s level of influence. The overall mean score of the VIPNC scale was taken as an average of the total mean of all 25 items, with a larger number indicating that the respondents had been more positively influenced.

4.7.1 Responses of Health-Studies Students towards Variables Influencing Perceptions of Nursing as a Career (Part 4 of the NCPQ)

According to the Table 7a, it showed the responses of health-studies students towards Variables Influencing Perceptions of Nursing as a Career. The overall mean score of the VIPNC scale of health-studies students was 3.41 (SD = 0.33). The three most positively influential variables of health-studies students were item 24 ‘your health care-related work experiences (including practicum)’ (mean = 3.69, SD = 0.79), item 17 ‘your reading about medicine or nursing’ (mean = 3.68, SD = 0.65), item 3 ‘your personality’ (mean = 3.67, SD = 0.83), where students thought that these variables would influence their perceptions of nursing as a career positively.

The fact that each variable had a mean value over 3 suggested that the overall 25 variables were positively influential. However, in regard to the percentage, there were still a few negatively influential variables could be classified. The four most negatively influential variables of health-studies students were item 5 ‘your past academic performance’ (n = 65, 23.3%), item 6 ‘your current academic performance’
(n = 59, 21.1%), item 4 ‘your health status’ (n = 24, 8.6%), and item 3 ‘your personality’ (n = 24, 8.6%), where students thought that these variables would influence their perceptions of nursing as a career negatively.
Table 7a: Responses of Health-Studies Students towards Variables Influencing Perceptions of Nursing as a Career

<table>
<thead>
<tr>
<th>Part 4 How do the following variables influence you in choosing nursing as a career?</th>
<th>Very Negatively Influenced</th>
<th>Negatively Influenced</th>
<th>No Influence at all / Not applicable</th>
<th>Positively Influenced</th>
<th>Very Positively Influenced</th>
<th>VIPNC Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Your gender</td>
<td>2 (0.7)</td>
<td>20 (7.2)</td>
<td>163 (58.4)</td>
<td>77 (27.6)</td>
<td>17 (6.1)</td>
<td>3.31 (0.72)</td>
</tr>
<tr>
<td>2. Your race</td>
<td>0 (0)</td>
<td>2 (0.7)</td>
<td>230 (82.4)</td>
<td>37 (13.3)</td>
<td>10 (3.6)</td>
<td>3.20 (0.50)</td>
</tr>
<tr>
<td>3. Your personality</td>
<td>2 (0.7)</td>
<td>2 (0.7)</td>
<td>80 (28.7)</td>
<td>177 (49.1)</td>
<td>38 (13.6)</td>
<td>3.67 (0.83)</td>
</tr>
<tr>
<td>4. Your health status</td>
<td>0 (0)</td>
<td>24 (8.6)</td>
<td>111 (39.8)</td>
<td>119 (42.7)</td>
<td>25 (9.0)</td>
<td>3.52 (0.78)</td>
</tr>
<tr>
<td>5. Your past academic performance</td>
<td>7 (2.5)</td>
<td>58 (20.8)</td>
<td>93 (33.3)</td>
<td>109 (39.1)</td>
<td>12 (4.3)</td>
<td>3.22 (0.91)</td>
</tr>
<tr>
<td>6. Your current academic performance</td>
<td>4 (1.4)</td>
<td>55 (19.7)</td>
<td>82 (29.4)</td>
<td>120 (43.0)</td>
<td>18 (6.5)</td>
<td>3.33 (0.91)</td>
</tr>
<tr>
<td>7. Your father</td>
<td>1 (0.4)</td>
<td>5 (1.8)</td>
<td>200 (71.9)</td>
<td>62 (22.3)</td>
<td>10 (3.6)</td>
<td>3.27 (0.57)</td>
</tr>
<tr>
<td>8. Your mother</td>
<td>1 (0.4)</td>
<td>5 (1.8)</td>
<td>195 (70.1)</td>
<td>66 (23.7)</td>
<td>11 (4.0)</td>
<td>3.28 (0.62)</td>
</tr>
<tr>
<td>9. Your close relatives</td>
<td>1 (0.4)</td>
<td>2 (0.7)</td>
<td>214 (76.7)</td>
<td>55 (19.7)</td>
<td>7 (2.5)</td>
<td>3.23 (0.52)</td>
</tr>
<tr>
<td>10. Your close friends</td>
<td>1 (0.4)</td>
<td>2 (0.7)</td>
<td>185 (66.3)</td>
<td>87 (31.2)</td>
<td>4 (1.4)</td>
<td>3.33 (0.53)</td>
</tr>
<tr>
<td>11. Your teachers</td>
<td>1 (0.4)</td>
<td>0 (0)</td>
<td>168 (60.2)</td>
<td>98 (35.1)</td>
<td>12 (4.3)</td>
<td>3.43 (0.59)</td>
</tr>
<tr>
<td>12. Your career advisors</td>
<td>1 (0.4)</td>
<td>2 (0.7)</td>
<td>194 (69.5)</td>
<td>72 (25.8)</td>
<td>10 (3.6)</td>
<td>3.32 (0.57)</td>
</tr>
<tr>
<td>13. Your contact with nurses</td>
<td>1 (0.4)</td>
<td>6 (2.2)</td>
<td>113 (40.5)</td>
<td>141 (50.5)</td>
<td>18 (6.5)</td>
<td>3.61 (0.66)</td>
</tr>
<tr>
<td>14. Your contact with physicians</td>
<td>2 (0.7)</td>
<td>2 (0.7)</td>
<td>143 (51.3)</td>
<td>122 (43.7)</td>
<td>10 (3.6)</td>
<td>3.49 (0.62)</td>
</tr>
<tr>
<td>15. Your family member, relative, or friend employed as a practicing nurse (RN/EN)</td>
<td>1 (0.4)</td>
<td>10 (3.6)</td>
<td>177 (63.7)</td>
<td>79 (28.4)</td>
<td>11 (4.0)</td>
<td>3.31 (0.66)</td>
</tr>
<tr>
<td>16. Your family member, relative, or friend employed in a health-related career other than nursing</td>
<td>1 (0.4)</td>
<td>6 (2.2)</td>
<td>195 (69.9)</td>
<td>69 (24.7)</td>
<td>8 (2.9)</td>
<td>3.28 (0.57)</td>
</tr>
<tr>
<td>17. Your reading about medicine or nursing</td>
<td>0 (0)</td>
<td>5 (1.8)</td>
<td>102 (36.6)</td>
<td>149 (53.4)</td>
<td>23 (8.2)</td>
<td>3.68 (0.65)</td>
</tr>
<tr>
<td>18. Your perceived image of nurses through the media</td>
<td>3 (1.1)</td>
<td>20 (7.2)</td>
<td>104 (37.4)</td>
<td>142 (51.1)</td>
<td>9 (3.2)</td>
<td>3.47 (0.75)</td>
</tr>
<tr>
<td>19. Your hospitalization experiences</td>
<td>1 (0.4)</td>
<td>9 (3.2)</td>
<td>191 (68.5)</td>
<td>70 (25.1)</td>
<td>8 (2.9)</td>
<td>3.27 (0.58)</td>
</tr>
<tr>
<td>20. Your experiences with outpatient health services</td>
<td>2 (0.7)</td>
<td>17 (6.1)</td>
<td>147 (52.7)</td>
<td>104 (37.3)</td>
<td>9 (3.2)</td>
<td>3.36 (0.68)</td>
</tr>
<tr>
<td>21. Your experiences visiting patients</td>
<td>2 (0.7)</td>
<td>9 (3.2)</td>
<td>145 (52.0)</td>
<td>115 (41.2)</td>
<td>8 (2.9)</td>
<td>3.42 (0.64)</td>
</tr>
<tr>
<td>22. Your experiences of caring for a sick family member or friend</td>
<td>1 (0.4)</td>
<td>3 (1.1)</td>
<td>130 (46.6)</td>
<td>127 (45.5)</td>
<td>18 (6.5)</td>
<td>3.57 (0.65)</td>
</tr>
<tr>
<td>23. Your volunteer work experiences</td>
<td>0 (0)</td>
<td>6 (2.2)</td>
<td>115 (41.2)</td>
<td>126 (45.2)</td>
<td>32 (11.5)</td>
<td>3.65 (0.71)</td>
</tr>
<tr>
<td>24. Your health care-related work experiences (including practicum)</td>
<td>1 (0.4)</td>
<td>15 (5.4)</td>
<td>92 (33.0)</td>
<td>132 (47.3)</td>
<td>39 (14.0)</td>
<td>3.69 (0.79)</td>
</tr>
<tr>
<td>25. Your non-health care-related work experiences (including practicum)</td>
<td>1 (0.4)</td>
<td>3 (1.1)</td>
<td>171 (61.3)</td>
<td>90 (32.3)</td>
<td>14 (5.0)</td>
<td>3.41 (0.62)</td>
</tr>
</tbody>
</table>

Overall Mean Score of VIPNC Scale: 3.41 (0.33)

The total number of participants by variables varied due to missing data.
4.7.2 Responses of University-Based General Nursing Students towards Variables Influencing Perceptions of Nursing as a Career (Part 4 of the NCPQ)

According to the Table 7b, it showed the responses of university-based general nursing students towards Variables Influencing Perceptions of Nursing as a Career. The overall mean score of the VIPNC scale of university-based general nursing students was 3.40 (SD = 0.34). The four most positively influential variables of university-based general nursing students were item 3 ‘your personality’ (mean = 3.75, SD = 0.76), item 24 ‘your health care-related work experiences (including practicum)’ (mean = 3.70, SD = 0.79), item 17 ‘your reading about medicine or nursing’ (mean = 3.63, SD = 0.66), and item 5 ‘your past academic performance’ (mean = 3.63, SD = 0.72), where students thought that these variables would influence their perceptions of nursing as a career positively.

The fact that each variable had a mean value over 3 suggested that the overall 25 variables were positively influential. However, in regard to the percentage, there were still a few negatively influential variables could be classified. The three most negatively influential variables of university-based general nursing students were item 4 ‘your health status’ (n = 29, 10.2%), item 5 ‘your past academic performance’ (n = 28, 9.9%), and item 6 ‘your current academic performance’ (n = 27, 9.5%), where students thought that these variables would influence their perceptions of nursing as a career negatively.
### Table 7b: Responses of University-Based General Nursing Students towards Variables Influencing Perceptions of Nursing as a Career

<table>
<thead>
<tr>
<th>Part 4 How do the following variables influence you in choosing nursing as a career?</th>
<th>Very Positively Influenced</th>
<th>Positively Influenced</th>
<th>No Influence at all / Not applicable</th>
<th>Negatively Influenced</th>
<th>Very Negatively Influenced</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VIPNC Scale</strong></td>
<td>25.0</td>
<td>13.4</td>
<td>9.2</td>
<td>2.6</td>
<td>1.0</td>
<td>2.5</td>
</tr>
<tr>
<td><strong>n (%)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Your gender</td>
<td>1 (0.4)</td>
<td>15 (5.3)</td>
<td>178 (62.9)</td>
<td>75 (26.5)</td>
<td>14 (4.9)</td>
<td>3.30 (0.66)</td>
</tr>
<tr>
<td>2. Your race</td>
<td>0 (0)</td>
<td>4 (1.4)</td>
<td>230 (81.3)</td>
<td>41 (14.5)</td>
<td>8 (2.8)</td>
<td>3.19 (0.49)</td>
</tr>
<tr>
<td>3. Your personality</td>
<td>1 (0.4)</td>
<td>24 (8.5)</td>
<td>48 (17.0)</td>
<td>182 (64.3)</td>
<td>28 (9.9)</td>
<td>3.75 (0.76)</td>
</tr>
<tr>
<td>4. Your health status</td>
<td>2 (0.7)</td>
<td>27 (9.5)</td>
<td>103 (36.4)</td>
<td>135 (47.7)</td>
<td>16 (5.7)</td>
<td>3.48 (0.77)</td>
</tr>
<tr>
<td>5. Your past academic performance</td>
<td>0 (0)</td>
<td>28 (9.9)</td>
<td>62 (21.9)</td>
<td>180 (63.6)</td>
<td>13 (4.6)</td>
<td>3.63 (0.72)</td>
</tr>
<tr>
<td>6. Your current academic performance</td>
<td>0 (0)</td>
<td>27 (9.5)</td>
<td>79 (27.9)</td>
<td>162 (57.2)</td>
<td>15 (5.3)</td>
<td>3.58 (0.74)</td>
</tr>
<tr>
<td>7. Your father</td>
<td>1 (0.4)</td>
<td>4 (1.4)</td>
<td>206 (72.8)</td>
<td>62 (21.9)</td>
<td>10 (3.5)</td>
<td>3.27 (0.56)</td>
</tr>
<tr>
<td>8. Your mother</td>
<td>2 (0.7)</td>
<td>9 (3.2)</td>
<td>184 (65.0)</td>
<td>71 (25.1)</td>
<td>17 (6.0)</td>
<td>3.33 (0.67)</td>
</tr>
<tr>
<td>9. Your close relatives</td>
<td>2 (0.7)</td>
<td>8 (2.8)</td>
<td>187 (66.1)</td>
<td>70 (24.7)</td>
<td>16 (5.7)</td>
<td>3.32 (0.66)</td>
</tr>
<tr>
<td>10. Your close friends</td>
<td>2 (0.7)</td>
<td>4 (1.4)</td>
<td>174 (61.5)</td>
<td>97 (34.3)</td>
<td>6 (2.1)</td>
<td>3.36 (0.59)</td>
</tr>
<tr>
<td>11. Your teachers</td>
<td>0 (0)</td>
<td>7 (2.5)</td>
<td>189 (66.8)</td>
<td>79 (27.9)</td>
<td>8 (2.8)</td>
<td>3.31 (0.57)</td>
</tr>
<tr>
<td>12. Your career advisors</td>
<td>1 (0.4)</td>
<td>2 (0.7)</td>
<td>226 (79.9)</td>
<td>51 (18.0)</td>
<td>3 (1.1)</td>
<td>3.19 (0.46)</td>
</tr>
<tr>
<td>13. Your contact with nurses</td>
<td>0 (0)</td>
<td>16 (5.7)</td>
<td>120 (42.4)</td>
<td>130 (45.9)</td>
<td>17 (6.0)</td>
<td>3.52 (0.70)</td>
</tr>
<tr>
<td>14. Your contact with physicians</td>
<td>0 (0)</td>
<td>11 (3.9)</td>
<td>177 (62.5)</td>
<td>86 (30.4)</td>
<td>9 (3.2)</td>
<td>3.33 (0.60)</td>
</tr>
<tr>
<td>15. Your family member, relative, or friend employed as a practicing nurse (RN/EN)</td>
<td>1 (0.4)</td>
<td>2 (0.7)</td>
<td>195 (68.9)</td>
<td>71 (25.1)</td>
<td>14 (4.9)</td>
<td>3.34 (0.60)</td>
</tr>
<tr>
<td>16. Your family member, relative, or friend employed in a health-related career other than nursing</td>
<td>1 (0.4)</td>
<td>1 (0.4)</td>
<td>223 (78.8)</td>
<td>48 (17.0)</td>
<td>10 (3.5)</td>
<td>3.23 (0.53)</td>
</tr>
<tr>
<td>17. Your reading about medicine or nursing</td>
<td>1 (0.4)</td>
<td>5 (1.8)</td>
<td>114 (40.3)</td>
<td>142 (50.2)</td>
<td>21 (7.4)</td>
<td>3.63 (0.66)</td>
</tr>
<tr>
<td>18. Your perceived image of nurses through the media</td>
<td>0 (0)</td>
<td>20 (7.1)</td>
<td>102 (36.0)</td>
<td>150 (53.0)</td>
<td>11 (3.9)</td>
<td>3.54 (0.69)</td>
</tr>
<tr>
<td>19. Your hospitalization experiences</td>
<td>2 (0.7)</td>
<td>7 (2.5)</td>
<td>214 (75.6)</td>
<td>50 (17.7)</td>
<td>10 (3.5)</td>
<td>3.21 (0.57)</td>
</tr>
<tr>
<td>20. Your experiences with outpatient health services</td>
<td>2 (0.7)</td>
<td>21 (7.4)</td>
<td>184 (65.0)</td>
<td>71 (25.1)</td>
<td>5 (1.8)</td>
<td>3.20 (0.62)</td>
</tr>
<tr>
<td>21. Your experiences visiting patients</td>
<td>3 (1.1)</td>
<td>22 (7.8)</td>
<td>145 (51.2)</td>
<td>100 (35.3)</td>
<td>13 (4.6)</td>
<td>3.35 (0.73)</td>
</tr>
<tr>
<td>22. Your experiences of caring for a sick family member or friend</td>
<td>1 (0.4)</td>
<td>7 (2.5)</td>
<td>113 (39.9)</td>
<td>142 (50.2)</td>
<td>20 (7.1)</td>
<td>3.61 (0.67)</td>
</tr>
<tr>
<td>23. Your volunteer work experiences</td>
<td>1 (0.4)</td>
<td>3 (1.1)</td>
<td>162 (57.2)</td>
<td>100 (35.3)</td>
<td>17 (6.0)</td>
<td>3.46 (0.64)</td>
</tr>
<tr>
<td>24. Your health care-related work experiences (including practicum)</td>
<td>2 (0.7)</td>
<td>22 (7.8)</td>
<td>65 (23.0)</td>
<td>165 (58.3)</td>
<td>29 (10.2)</td>
<td>3.70 (0.79)</td>
</tr>
<tr>
<td>25. Your non-health care-related work experiences (including practicum)</td>
<td>4 (1.4)</td>
<td>4 (1.4)</td>
<td>209 (73.9)</td>
<td>59 (20.8)</td>
<td>7 (2.5)</td>
<td>3.22 (0.58)</td>
</tr>
</tbody>
</table>

**Overall Mean Score of VIPNC Scale** | **3.40 (0.34)**

*The total number of participants by variables varied due to missing data.*
4.8 Perceptions of Nursing as a Career (Part 5 of the NCPQ) (Objective 4)

Students’ perceptions of nursing as a career were assessed. It was done by the PNC scale. The PNC scale with 30 statements was rated on a 5-point Likert scale. Question 1, 2, 3, 5, 7, 9, 11, 14, 15, 17, 20, 21, 23, 25, 26 and 29 were negatively phrased to test the consistency of participants. Participants who have positive perception should agree with the positive statements and disagree with the negative statements. The values of the negative response items were reversely coded and then the mean score of each statement was calculated. The overall mean score of the PNC scale was taken as an average of the total mean of all 30 statements, with a larger number indicating more positive perceptions.

4.8.1 Responses of Health-Studies Students towards Perceptions of Nursing as a Career (Part 5 of the NCPQ)

According to the Table 8a, it showed the responses of health-studies students towards perceptions of nursing as a career. The overall mean score of the PNC scale of health-studies students was 3.42 (SD = 0.29). The most positive perception of health-studies students was item 4 (mean = 4.10, SD = 0.80), indicating students thought that nursing can save lives, which makes it a meaningful job. The second most positive perception was item 30 (mean = 3.96, SD = 0.83), indicating students thought that the services provided by nurses are as important as those provided by physicians. The third most positive perceptions was item 19 (mean = 3.92, SD = 0.83), indicating students thought that nursing is a job suitable for both men and women.

The most negative perception of health-studies students was item 9 (mean = 2.30, SD = 0.77), indicating students thought that studying in a nursing programme is costly.
The second most negative perception was item 29 (mean = 2.43, SD = 0.85), indicating students thought that shift duty nursing work (including nights and holidays) affects normal social life. The third most negative perception was item 7 (mean = 2.49, SD = 0.78), indicating students thought that nursing is a dangerous job that requires frequent contact with highly infectious patients.
Table 8a: Responses of Health-Studies Students towards Perceptions of Nursing as a Career

<table>
<thead>
<tr>
<th>Part 5</th>
<th>Strongly Disagree n (%)</th>
<th>Disagree n (%)</th>
<th>Neutral n (%)</th>
<th>Agree n (%)</th>
<th>Strongly Agree n (%)</th>
<th>PNC Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nursing is a feminine job which is only suitable for women</td>
<td>53 (19.0)</td>
<td>154 (55.2)</td>
<td>60 (21.5)</td>
<td>12 (4.3)</td>
<td>0 (0)</td>
<td>3.89 (0.75)</td>
</tr>
<tr>
<td>2. Nursing is only suitable for people who want a secure job.</td>
<td>30 (10.8)</td>
<td>134 (48.0)</td>
<td>86 (30.8)</td>
<td>24 (8.6)</td>
<td>5 (1.8)</td>
<td>3.57 (0.86)</td>
</tr>
<tr>
<td>3. Everyone would benefit if nurses spent less time in research and more time caring for patients.</td>
<td>15 (5.4)</td>
<td>62 (22.4)</td>
<td>104 (37.5)</td>
<td>78 (28.2)</td>
<td>18 (6.5)</td>
<td>2.92 (0.99)</td>
</tr>
<tr>
<td>4. Nursing can save lives, which makes it a meaningful job.</td>
<td>2 (0.7)</td>
<td>5 (1.8)</td>
<td>49 (17.6)</td>
<td>130 (46.8)</td>
<td>92 (33.1)</td>
<td>4.10 (0.80)</td>
</tr>
<tr>
<td>5. People select nursing courses because they cannot achieve the academic standards to enter other preferred course choices.</td>
<td>47 (16.8)</td>
<td>109 (39.1)</td>
<td>90 (32.3)</td>
<td>27 (9.7)</td>
<td>6 (2.2)</td>
<td>3.59 (0.95)</td>
</tr>
<tr>
<td>6. Nursing can secure family income.</td>
<td>2 (0.7)</td>
<td>15 (5.4)</td>
<td>96 (34.4)</td>
<td>142 (50.9)</td>
<td>24 (8.6)</td>
<td>3.61 (0.75)</td>
</tr>
<tr>
<td>7. Nursing is a dangerous job that requires frequent contact with highly infectious patients.</td>
<td>3 (1.1)</td>
<td>24 (8.6)</td>
<td>95 (34.2)</td>
<td>139 (50.0)</td>
<td>17 (6.1)</td>
<td>2.49 (0.78)</td>
</tr>
<tr>
<td>8. Nursing requires expert skills.</td>
<td>2 (0.7)</td>
<td>4 (1.4)</td>
<td>64 (22.9)</td>
<td>161 (57.7)</td>
<td>48 (17.2)</td>
<td>3.89 (0.72)</td>
</tr>
<tr>
<td>9. Studying in a nursing programme is costly.</td>
<td>0 (0)</td>
<td>8 (2.9)</td>
<td>113 (40.5)</td>
<td>113 (40.5)</td>
<td>45 (16.1)</td>
<td>2.30 (0.77)</td>
</tr>
<tr>
<td>10. Nurses are well-educated.</td>
<td>1 (0.4)</td>
<td>6 (2.2)</td>
<td>100 (36.0)</td>
<td>142 (51.1)</td>
<td>29 (10.4)</td>
<td>3.69 (0.70)</td>
</tr>
<tr>
<td>11. Nursing is an unacceptable job that requires the handling of dead bodies.</td>
<td>15 (5.4)</td>
<td>93 (33.3)</td>
<td>122 (43.7)</td>
<td>40 (14.3)</td>
<td>9 (3.2)</td>
<td>3.23 (0.88)</td>
</tr>
<tr>
<td>12. Nursing programmes are difficult.</td>
<td>3 (1.1)</td>
<td>27 (9.7)</td>
<td>110 (39.4)</td>
<td>112 (40.1)</td>
<td>27 (9.7)</td>
<td>3.48 (0.84)</td>
</tr>
<tr>
<td>13. Nursing income is attractive.</td>
<td>1 (0.4)</td>
<td>16 (5.7)</td>
<td>104 (37.3)</td>
<td>136 (48.7)</td>
<td>22 (7.9)</td>
<td>3.58 (0.73)</td>
</tr>
<tr>
<td>14. The role of nurses is less important than that of doctors.</td>
<td>24 (8.6)</td>
<td>132 (47.3)</td>
<td>91 (32.6)</td>
<td>23 (8.2)</td>
<td>9 (3.2)</td>
<td>3.50 (0.89)</td>
</tr>
<tr>
<td>15. Nursing provides less opportunity to raise social status.</td>
<td>8 (2.9)</td>
<td>96 (34.9)</td>
<td>135 (49.1)</td>
<td>31 (11.3)</td>
<td>5 (1.8)</td>
<td>3.26 (0.77)</td>
</tr>
<tr>
<td>16. Nursing is a respectable profession.</td>
<td>3 (1.1)</td>
<td>15 (5.4)</td>
<td>86 (30.8)</td>
<td>146 (52.3)</td>
<td>29 (10.4)</td>
<td>3.66 (0.78)</td>
</tr>
<tr>
<td>17. Nursing cannot provide financial security.</td>
<td>12 (4.3)</td>
<td>119 (42.8)</td>
<td>128 (46.0)</td>
<td>19 (6.8)</td>
<td>0 (0)</td>
<td>3.45 (0.69)</td>
</tr>
<tr>
<td>18. Shift duty nursing work (including nights and holidays) provides more leisure time during weekdays.</td>
<td>26 (9.4)</td>
<td>68 (24.5)</td>
<td>130 (46.9)</td>
<td>49 (17.7)</td>
<td>4 (1.4)</td>
<td>2.77 (0.90)</td>
</tr>
<tr>
<td>19. Nursing is a job suitable for both men and women.</td>
<td>3 (1.1)</td>
<td>12 (4.3)</td>
<td>53 (19.0)</td>
<td>145 (52.0)</td>
<td>66 (23.7)</td>
<td>3.92 (0.83)</td>
</tr>
<tr>
<td>20. Nurses are just a subsidiary of physicians.</td>
<td>34 (12.3)</td>
<td>136 (49.1)</td>
<td>80 (28.9)</td>
<td>25 (9.0)</td>
<td>2 (0.7)</td>
<td>3.63 (0.84)</td>
</tr>
<tr>
<td>21. Nursing is a disgusting job in which unpleasant, low-skilled ‘dirty/messy’ work is performed.</td>
<td>26 (9.3)</td>
<td>85 (30.5)</td>
<td>114 (40.9)</td>
<td>49 (17.6)</td>
<td>5 (1.8)</td>
<td>3.28 (0.92)</td>
</tr>
<tr>
<td>22. People who can enter nursing courses have achieved good academic standard.</td>
<td>1 (0.4)</td>
<td>19 (6.8)</td>
<td>142 (50.9)</td>
<td>100 (35.8)</td>
<td>17 (6.1)</td>
<td>3.41 (0.72)</td>
</tr>
<tr>
<td>23. Nurses can only follow orders from physicians without queries.</td>
<td>28 (10.1)</td>
<td>114 (41.0)</td>
<td>93 (33.5)</td>
<td>37 (13.3)</td>
<td>6 (2.2)</td>
<td>3.44 (0.92)</td>
</tr>
<tr>
<td>24. Nurses are influential in the development of health care policies.</td>
<td>0 (0)</td>
<td>19 (6.8)</td>
<td>139 (49.8)</td>
<td>107 (38.4)</td>
<td>14 (5)</td>
<td>3.42 (0.69)</td>
</tr>
<tr>
<td>25. Nursing has a low salary</td>
<td>7 (2.5)</td>
<td>109 (39.1)</td>
<td>136 (48.7)</td>
<td>24 (8.6)</td>
<td>3 (1.1)</td>
<td>3.33 (0.71)</td>
</tr>
<tr>
<td>26. Nursing is a low prestige occupation.</td>
<td>18 (6.5)</td>
<td>117 (41.9)</td>
<td>112 (40.1)</td>
<td>32 (11.5)</td>
<td>0 (0)</td>
<td>3.43 (0.78)</td>
</tr>
<tr>
<td>27. Nurses can have their own professional judgments.</td>
<td>1 (0.4)</td>
<td>10 (3.6)</td>
<td>99 (35.7)</td>
<td>145 (52.3)</td>
<td>22 (7.9)</td>
<td>3.64 (0.70)</td>
</tr>
<tr>
<td>28. Nurses incorporating research findings into clinical practice would improve patient care standards.</td>
<td>0 (0)</td>
<td>6 (2.2)</td>
<td>105 (37.6)</td>
<td>149 (53.4)</td>
<td>19 (6.8)</td>
<td>3.65 (0.64)</td>
</tr>
<tr>
<td>29. Shift duty nursing work (including nights and holidays) affects normal social life.</td>
<td>1 (0.4)</td>
<td>24 (8.6)</td>
<td>108 (38.7)</td>
<td>107 (38.4)</td>
<td>39 (14.0)</td>
<td>2.43 (0.85)</td>
</tr>
<tr>
<td>30. The services provided by nurses are as important as those provided by physicians.</td>
<td>4 (1.4)</td>
<td>5 (1.8)</td>
<td>63 (22.6)</td>
<td>132 (47.3)</td>
<td>75 (26.9)</td>
<td>3.96 (0.83)</td>
</tr>
</tbody>
</table>

Overall Mean Score of PNC Scale 3.42 (0.29)

The total number of participants by variables varied due to missing data.
4.8.2 Responses of University-Based General Nursing Students towards Perceptions of Nursing as a Career (Part 5 of the NCPQ)

According to the Table 8b, it showed the responses of university-based general nursing students towards perceptions of nursing as a career. The overall mean score of the PNC scale of university-based general nursing students was 3.51 (SD = 0.28). The most positive perception of university-based general nursing students was item 4 (mean = 4.27, SD = 0.55), indicating students thought that nursing can save lives, which makes it a meaningful job. The second most positive perception was item 27 (mean = 4.08, SD = 0.52), indicating students thought that nurses can have their own professional judgments. The third most positive perceptions was item 1 (mean = 4.04, SD = 0.74), indicating students thought that nursing is not a feminine job.

The most negative perception of university-based general nursing students was item 29 (mean = 1.94, SD = 0.70), indicating students thought that shift duty nursing work (including nights and holidays) affects normal social life. The second most negative perception was item 7 (mean = 2.28, SD = 0.72), indicating students thought that nursing is a dangerous job that requires frequent contact with highly infectious patients. The third most negative perception was item 18 (mean = 2.52, SD = 0.97), indicating students thought that shift duty nursing work (including nights and holidays) provides more leisure time during weekdays.
Table Bb: Responses of University-Based General Nursing Students towards Perceptions of Nursing as a Career

<table>
<thead>
<tr>
<th>Part 5</th>
<th>Strongly Disagree n (%)</th>
<th>Disagree n (%)</th>
<th>Neutral n (%)</th>
<th>Agree n (%)</th>
<th>Strongly Agree n (%)</th>
<th>PNC Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nursing is a feminine job which is only suitable for women</td>
<td>75 (26.5)</td>
<td>152 (53.7)</td>
<td>48 (17.0)</td>
<td>8 (2.8)</td>
<td>0 (0)</td>
<td>4.04 (0.74)</td>
</tr>
<tr>
<td>2. Nursing is only suitable for people who want a secure job.</td>
<td>40 (14.1)</td>
<td>143 (50.5)</td>
<td>50 (17.7)</td>
<td>42 (14.8)</td>
<td>8 (2.8)</td>
<td>3.58 (1.00)</td>
</tr>
<tr>
<td>3. Everyone would benefit if nurses spent less time in research and more time caring for patients.</td>
<td>8 (2.8)</td>
<td>93 (32.9)</td>
<td>68 (24.0)</td>
<td>94 (33.2)</td>
<td>20 (7.1)</td>
<td>2.91 (1.03)</td>
</tr>
<tr>
<td>4. Nursing can save lives, which makes it a meaningful job.</td>
<td>0 (0)</td>
<td>1 (0.4)</td>
<td>12 (4.2)</td>
<td>179 (63.3)</td>
<td>91 (32.2)</td>
<td>4.27 (0.55)</td>
</tr>
<tr>
<td>5. People select nursing courses because they cannot achieve the academic standards to enter other preferred course choices.</td>
<td>57 (20.1)</td>
<td>111 (39.2)</td>
<td>76 (26.9)</td>
<td>35 (12.4)</td>
<td>4 (1.4)</td>
<td>3.64 (0.98)</td>
</tr>
<tr>
<td>6. Nursing can secure family income.</td>
<td>2 (0.7)</td>
<td>8 (2.8)</td>
<td>52 (18.4)</td>
<td>184 (65.2)</td>
<td>36 (12.8)</td>
<td>3.87 (0.69)</td>
</tr>
<tr>
<td>7. Nursing is a dangerous job that requires frequent contact with highly infectious patients.</td>
<td>1 (0.4)</td>
<td>17 (6.0)</td>
<td>67 (23.8)</td>
<td>173 (61.3)</td>
<td>24 (8.5)</td>
<td>2.28 (0.72)</td>
</tr>
<tr>
<td>8. Nursing requires expert skills.</td>
<td>0 (0)</td>
<td>2 (0.7)</td>
<td>39 (13.8)</td>
<td>196 (69.3)</td>
<td>46 (16.3)</td>
<td>4.01 (0.57)</td>
</tr>
<tr>
<td>9. Studying in a nursing programme is costly.</td>
<td>1 (0.4)</td>
<td>31 (11.0)</td>
<td>144 (50.9)</td>
<td>94 (33.2)</td>
<td>13 (4.6)</td>
<td>2.69 (0.74)</td>
</tr>
<tr>
<td>10. Nurses are well-educated.</td>
<td>1 (0.4)</td>
<td>10 (3.5)</td>
<td>69 (24.4)</td>
<td>178 (62.9)</td>
<td>25 (8.8)</td>
<td>3.76 (0.67)</td>
</tr>
<tr>
<td>11. Nursing is an unattractive job that requires the handling of dead bodies.</td>
<td>26 (9.2)</td>
<td>150 (53.0)</td>
<td>84 (29.7)</td>
<td>21 (7.4)</td>
<td>2 (0.7)</td>
<td>3.63 (0.78)</td>
</tr>
<tr>
<td>12. Nursing programmes are difficult.</td>
<td>1 (0.4)</td>
<td>30 (10.6)</td>
<td>68 (24.0)</td>
<td>137 (48.4)</td>
<td>47 (16.6)</td>
<td>3.70 (0.88)</td>
</tr>
<tr>
<td>13. Nursing income is attractive.</td>
<td>0 (0)</td>
<td>12 (4.2)</td>
<td>48 (17.0)</td>
<td>202 (71.4)</td>
<td>21 (7.4)</td>
<td>3.82 (0.62)</td>
</tr>
<tr>
<td>14. The role of nurses is less important than that of doctors.</td>
<td>27 (9.5)</td>
<td>135 (47.7)</td>
<td>67 (23.7)</td>
<td>44 (15.5)</td>
<td>10 (3.5)</td>
<td>3.44 (0.98)</td>
</tr>
<tr>
<td>15. Nursing provides less opportunity to raise social status.</td>
<td>11 (3.9)</td>
<td>112 (39.6)</td>
<td>114 (40.3)</td>
<td>39 (13.8)</td>
<td>7 (2.5)</td>
<td>3.29 (0.84)</td>
</tr>
<tr>
<td>16. Nursing is a respectable profession.</td>
<td>4 (1.4)</td>
<td>23 (8.1)</td>
<td>56 (19.8)</td>
<td>183 (64.7)</td>
<td>17 (6.0)</td>
<td>3.66 (0.77)</td>
</tr>
<tr>
<td>17. Nursing cannot provide financial security.</td>
<td>12 (4.3)</td>
<td>135 (47.9)</td>
<td>113 (40.1)</td>
<td>19 (6.7)</td>
<td>3 (1.1)</td>
<td>3.48 (0.73)</td>
</tr>
<tr>
<td>18. Shift duty nursing work (including nights and holidays) provides more leisure time during weekdays.</td>
<td>42 (14.9)</td>
<td>103 (36.5)</td>
<td>88 (31.2)</td>
<td>46 (16.3)</td>
<td>3 (1.1)</td>
<td>2.52 (0.97)</td>
</tr>
<tr>
<td>19. Nursing is a job suitable for both men and women.</td>
<td>0 (0)</td>
<td>4 (1.4)</td>
<td>39 (13.8)</td>
<td>196 (69.3)</td>
<td>44 (15.5)</td>
<td>3.99 (0.59)</td>
</tr>
<tr>
<td>20. Nurses are just a subsidiary of physicians.</td>
<td>47 (16.7)</td>
<td>157 (55.7)</td>
<td>46 (16.3)</td>
<td>23 (8.2)</td>
<td>9 (3.2)</td>
<td>3.74 (0.94)</td>
</tr>
<tr>
<td>21. Nursing is a disgusting job in which unpleasant, low-skilled ‘dirty/messy’ work is performed.</td>
<td>33 (11.7)</td>
<td>130 (45.9)</td>
<td>85 (30.0)</td>
<td>32 (11.3)</td>
<td>3 (1.1)</td>
<td>3.56 (0.88)</td>
</tr>
<tr>
<td>22. People who can enter nursing courses have achieved good academic standard.</td>
<td>2 (0.7)</td>
<td>32 (11.3)</td>
<td>149 (52.7)</td>
<td>99 (35.0)</td>
<td>1 (0.4)</td>
<td>3.23 (0.67)</td>
</tr>
<tr>
<td>23. Nurses can only follow orders from physicians without queries.</td>
<td>63 (22.3)</td>
<td>165 (58.3)</td>
<td>38 (13.4)</td>
<td>15 (5.3)</td>
<td>2 (0.7)</td>
<td>3.96 (0.80)</td>
</tr>
<tr>
<td>24. Nurses are influential in the development of health care policies.</td>
<td>4 (1.4)</td>
<td>18 (6.4)</td>
<td>111 (39.2)</td>
<td>148 (52.3)</td>
<td>2 (0.7)</td>
<td>3.45 (0.69)</td>
</tr>
<tr>
<td>25. Nursing has a low salary.</td>
<td>7 (2.5)</td>
<td>118 (41.7)</td>
<td>109 (38.5)</td>
<td>33 (11.7)</td>
<td>16 (5.7)</td>
<td>3.24 (0.90)</td>
</tr>
<tr>
<td>26. Nursing is a low prestige occupation.</td>
<td>16 (5.7)</td>
<td>145 (51.2)</td>
<td>93 (32.9)</td>
<td>26 (9.2)</td>
<td>3 (1.1)</td>
<td>3.51 (0.78)</td>
</tr>
<tr>
<td>27. Nurses can have their own professional judgments.</td>
<td>0 (0)</td>
<td>4 (1.4)</td>
<td>16 (5.7)</td>
<td>216 (76.3)</td>
<td>47 (16.5)</td>
<td>4.08 (0.52)</td>
</tr>
<tr>
<td>28. Nurses incorporating research findings into clinical practice would improve patient care standards.</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>38 (13.4)</td>
<td>204 (72.1)</td>
<td>41 (14.5)</td>
<td>4.01 (0.53)</td>
</tr>
<tr>
<td>29. Shift duty nursing work (including nights and holidays) affects normal social life.</td>
<td>0 (0)</td>
<td>8 (2.8)</td>
<td>38 (13.4)</td>
<td>167 (59.0)</td>
<td>70 (24.7)</td>
<td>1.94 (0.70)</td>
</tr>
<tr>
<td>30. The services provided by nurses are as important as those provided by physicians.</td>
<td>0 (0)</td>
<td>8 (2.8)</td>
<td>44 (15.5)</td>
<td>175 (61.8)</td>
<td>56 (19.8)</td>
<td>3.99 (0.68)</td>
</tr>
</tbody>
</table>

Overall Mean Score of PNC Scale **3.51 (0.28)**

The total number of participants by variables varied due to missing data.
4.9 Group Differences in the Variables Influencing Perceptions of Nursing as a Career (Part 4 of the NCP) between University-Based General Nursing Students and Health-Studies Students (Objective 5)

The t-test was used to compare the group differences between general nursing and health-studies students in the mean scores of individual variables in the VIPNC scale (Part 4 of the NCPQ) and in the overall mean scores of the VIPNC scale (Part 4 of the NCPQ). T-test is used to compare the mean value between two study groups and its p value from the t-test means there is statistically significant difference between the mean values (Peat et al., 2008).

According to the Table 9, it showed the group differences in the VIPNC scales (Part 4 of the NCP) between university-based general nursing students and health-studies students. No significant group difference was found in the overall mean score of the VIPNC scale between university-based general nursing students and health-studies students groups (t = 0.47, p = 0.639). The overall mean scores of the VIPNC scale were 3.40 (SD = 0.34) for university-based students and 3.41 (SD = 0.33) for health-studies students.

But when analyzing individual variables in VIPNC scale, there were significant group differences in several variables. The university-based general nursing students reported more positively influential in item 5 ‘your past academic performance’ (t = -5.92, p = < 0.001) and item 6 ‘your current academic performance’ (t = -3.57, p = < 0.001) than the health-studies students. The nursing students had item 5 ‘your past academic performance’ (mean = 3.63, SD = 0.72) and item 6 ‘your current academic performance’ (mean = 3.58, SD = 0.74); while the health-studies students had item 5
‘your past academic performance’ (mean = 3.22, SD = 0.91) and item 6 ‘your current academic performance’ (mean = 3.33, SD = 0.91).

The health-studies students reported more positively influential in item 11 ‘your teachers’ (t = 2.43, p = 0.015), item 12 ‘your career advisors’ (t = 2.94, p = 0.003) and item 14 ‘your contact with physicians’ (t = 3.09, p = 0.002) than the university-based general nursing students. The health-studies students had item 11 ‘your teachers’ (mean = 3.43, SD = 0.59), item 12 ‘your career advisors’ (mean = 3.32, SD = 0.57) and item 14 ‘your contact with physicians’ (mean = 3.49, SD = 0.62); while the nursing students had item 11 ‘your teachers’ (mean = 3.31, SD = 0.57), item 12 ‘your career advisors’ (mean = 3.19, SD = 0.46) and item 14 ‘your contact with physicians’ (mean = 3.33, SD = 0.60).

The health-studies students also reported more positively influential in item 20 ‘your experiences with outpatient health services’ (t = 2.99, p = 0.003), item 23 ‘your volunteer work experiences’ (t = 3.58, p = < 0.001) and item 25 ‘your non-health care-related work experiences (including practicum)’ (t = 3.75, p = < 0.001) than the university-based general nursing students. The health-studies students had item 20 ‘your experiences with outpatient health services’ (mean = 3.36, SD = 0.68), item 23 ‘your volunteer work experiences’(mean = 3.65, SD = 0.71) and item 25 ‘your non-health care-related work experiences (including practicum)’ (mean = 3.41, SD = 0.62); while the nursing students had item 20 ‘your experiences with outpatient health services’ (mean = 3.19, SD = 0.62), item 23 ‘your volunteer work experiences’ (mean = 3.46, SD = 0.64) and item 25 ‘your non-health care-related work experiences (including practicum)’ (mean = 3.22, SD = 0.58).
Table 9: Group Differences in the VIPNC Scale (Part 4 of the NCP) between University-Based General Nursing Students and Health-Studies Students

<table>
<thead>
<tr>
<th>Part 4 How do the following variables influence you in choosing nursing as a career?</th>
<th>Health-studies students</th>
<th>University-based general nursing students</th>
<th>T-test</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n = 279)</td>
<td>(n = 283)</td>
<td>VIPNC Scale Mean (SD)</td>
<td>VIPNC Scale Mean (SD)</td>
<td></td>
</tr>
<tr>
<td>1. Your gender</td>
<td>3.31 (0.72)</td>
<td>3.30 (0.66)</td>
<td>0.14</td>
<td>0.892</td>
</tr>
<tr>
<td>2. Your race</td>
<td>3.20 (0.50)</td>
<td>3.19 (0.49)</td>
<td>0.24</td>
<td>0.812</td>
</tr>
<tr>
<td>3. Your personality</td>
<td>3.67 (0.83)</td>
<td>3.75 (0.76)</td>
<td>-1.17</td>
<td>0.242</td>
</tr>
<tr>
<td>4. Your health status</td>
<td>3.52 (0.78)</td>
<td>3.48 (0.77)</td>
<td>0.60</td>
<td>0.550</td>
</tr>
<tr>
<td>5. Your past academic performance</td>
<td>3.22 (0.91)</td>
<td>3.63 (0.72)</td>
<td>-5.92</td>
<td>&lt; 0.001***</td>
</tr>
<tr>
<td>6. Your current academic performance</td>
<td>3.33 (0.91)</td>
<td>3.58 (0.74)</td>
<td>-3.57</td>
<td>&lt; 0.001***</td>
</tr>
<tr>
<td>7. Your father</td>
<td>3.27 (0.57)</td>
<td>3.27 (0.56)</td>
<td>0.03</td>
<td>0.980</td>
</tr>
<tr>
<td>8. Your mother</td>
<td>3.28 (0.62)</td>
<td>3.33 (0.67)</td>
<td>-0.84</td>
<td>0.402</td>
</tr>
<tr>
<td>9. Your close relatives</td>
<td>3.23 (0.52)</td>
<td>3.32 (0.66)</td>
<td>-1.71</td>
<td>0.88</td>
</tr>
<tr>
<td>10. Your close friends</td>
<td>3.33 (0.53)</td>
<td>3.36 (0.59)</td>
<td>-0.65</td>
<td>0.516</td>
</tr>
<tr>
<td>11. Your teachers</td>
<td>3.43 (0.59)</td>
<td>3.31 (0.57)</td>
<td>2.43</td>
<td>0.015*</td>
</tr>
<tr>
<td>12. Your career advisors</td>
<td>3.32 (0.57)</td>
<td>3.19 (0.46)</td>
<td>2.94</td>
<td>0.003**</td>
</tr>
<tr>
<td>13. Your contact with nurses</td>
<td>3.61 (0.66)</td>
<td>3.52 (0.70)</td>
<td>1.45</td>
<td>0.148</td>
</tr>
<tr>
<td>14. Your contact with physicians</td>
<td>3.49 (0.62)</td>
<td>3.33 (0.60)</td>
<td>3.09</td>
<td>0.002**</td>
</tr>
<tr>
<td>15. Your family member, relative, or friend employed as a practicing nurse (RN/EN)</td>
<td>3.31 (0.66)</td>
<td>3.34 (0.60)</td>
<td>-0.52</td>
<td>0.605</td>
</tr>
<tr>
<td>16. Your family member, relative, or friend employed in a health-related career other than nursing</td>
<td>3.28 (0.57)</td>
<td>3.23 (0.53)</td>
<td>1.00</td>
<td>0.317</td>
</tr>
<tr>
<td>17. Your reading about medicine or nursing</td>
<td>3.68 (0.65)</td>
<td>3.63 (0.66)</td>
<td>1.00</td>
<td>0.316</td>
</tr>
<tr>
<td>18. Your perceived image of nurses through the media</td>
<td>3.47 (0.75)</td>
<td>3.54 (0.69)</td>
<td>-1.11</td>
<td>0.266</td>
</tr>
<tr>
<td>19. Your hospitalization experiences</td>
<td>3.27 (0.58)</td>
<td>3.21 (0.57)</td>
<td>1.24</td>
<td>0.217</td>
</tr>
<tr>
<td>20. Your experiences with outpatient health services</td>
<td>3.36 (0.68)</td>
<td>3.20 (0.62)</td>
<td>2.99</td>
<td>0.003**</td>
</tr>
<tr>
<td>21. Your experiences visiting patients</td>
<td>3.42 (0.64)</td>
<td>3.35 (0.73)</td>
<td>1.32</td>
<td>0.188</td>
</tr>
<tr>
<td>22. Your experiences of caring for a sick family member or friend</td>
<td>3.57 (0.65)</td>
<td>3.61 (0.67)</td>
<td>-0.81</td>
<td>0.419</td>
</tr>
<tr>
<td>23. Your volunteer work experiences</td>
<td>3.65 (0.71)</td>
<td>3.46 (0.64)</td>
<td>3.58</td>
<td>&lt; 0.001***</td>
</tr>
<tr>
<td>24. Your health care-related work experiences (including practicum)</td>
<td>3.69 (0.79)</td>
<td>3.70 (0.79)</td>
<td>-0.67</td>
<td>0.948</td>
</tr>
<tr>
<td>25. Your non-health care-related work experiences (including practicum)</td>
<td>3.41 (0.62)</td>
<td>3.22 (0.58)</td>
<td>3.75</td>
<td>&lt; 0.001***</td>
</tr>
</tbody>
</table>

Overall Mean Score of VIPNC Scale

| 3.41 (0.33) | 3.40 (0.34) | 0.47 | 0.639 |

*p ≤ 0.05, **p ≤ 0.01, and ***p ≤ 0.001
4.10 Group Differences in the Perceptions of Nursing as a Career (Part 5 of the NCPQ) between University-Based General Nursing Students and Health-Studies Students (Objective 6)

Students’ perceptions of nursing as a career were assessed. It was done by the PNC scale. It had 30 statements expressed with both positive and negative sentiments. Question 1, 2, 3, 5, 7, 9, 11, 14, 15, 17, 20, 21, 23, 25, 26 and 29 of were negatively phrased to test the consistency of participants. Participants who have positive perception should agree with the positive statements and disagree with the negative statements. The values of the negative response items were reversely coded and then the mean score of each statement was calculated. The overall mean score of the PNC scale was taken as an average of the total mean of all 30 statements, with a larger number indicating more positive perceptions. The t-test was used to compare the group differences between general nursing and health-studies students in the mean scores of individual sentence in the PNC scale (Part 5 of the NCPQ) and in the overall mean scores of the PNC scale (Part 5 of the NCPQ).

According to the Table 10, it showed the group differences in the PNC scales (Part 5 of the NCP) between university-based general nursing students and health-studies students. The university-based students had statistically more positive perceptions of nursing as a career than the health-studies students \((t = -3.84, p < 0.001)\). The overall mean scores of the PNC scale were 3.51 (SD = 0.28) for university-based students and 3.42 (SD = 0.29) for health-studies students.

When analyzing individual variables in PNC scale, there were significant group differences in many variables. The university-based general nursing students reported
more positive perceptions than the health-studies students in item 1 (t = -2.38, p = 0.018), indicating nursing students thought that nursing is not a feminine job; item 4 (t = -3.02, p = 0.003), indicating nursing students thought that nursing can save lives, which makes it a meaningful job.

The nursing students reported more positive perceptions than the health-studies students in economic aspect of nursing such as item 6 (t = -4.16, p < 0.001), indicating nursing students thought nursing can secure family income and item 13 (t = -4.18, p < 0.001), indicating nursing students thought that nursing income is attractive.

The nursing students also reported more positive perceptions than the health-studies students in professional aspect of nursing such as item 8 (t = -2.16, p = 0.031), indicating nursing students thought that nursing requires expert skills.; item 12 (t = -3.12, p = 0.002), indicating nursing students thought that nursing programmes are difficult.; item 27 (t = -8.51, p <0.001), indicating nursing students thought that nurses can have their own professional judgments., and item 28 (t = -7.32, p <0.001), indicating nursing students thought that nurses incorporating research findings into clinical practice would improve patient care standards.

However, the university-based general nursing students also had more negative perceptions than the health-studies students in occupational aspect of nursing such as item 7 (t = 3.18, p = 0.002), indicating nursing students thought that nursing is a dangerous job that requires frequent contact with highly infectious patients.; item 18 (t = 3.18, p = 0.002), indicating nursing students thought that shift duty nursing work (including nights and holidays) provides more leisure time during weekdays and item
29 (t = 7.41, p < 0.001), indicating nursing students thought shift duty nursing work (including nights and holidays) affects normal social life.

On the other hand, the health-studies students had more positive perceptions than the nursing students in item 22 (t = 2.98, p = 0.003), indicating health-studies students thought that people who can enter nursing courses have achieved good academic standard.

However, the health-studies students also had more negative perceptions than the nursing students in item 9 (t = -6.15, p < 0.001), indicating health-studies students thought that studying in a nursing programme is costly; item 11 (t = -5.60, p < 0.001), indicating health-studies students thought that nursing is an unacceptable job that requires the handling of dead bodies; item 21 (t = -3.67, p < 0.001), indicating health-studies students thought that nursing is a disgusting job in which unpleasant, low-skilled ‘dirty/messy’ work is performed; and item 23 (t = -7.25, p < 0.001), indicating health-studies students thought that nurses can only follow orders from physicians without queries.
Table 10: Group Differences in the PNC Scale (Part 5 of the NCP) between University-Based General Nursing Students and Health-Studies Students

<table>
<thead>
<tr>
<th></th>
<th>Health-studies students</th>
<th>University-based general nursing students</th>
<th>T-test</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 279)</td>
<td>(n = 283)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PNC Scale Mean (SD)</td>
<td>PNC Scale Mean (SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Nursing is a feminine job which is only suitable for women</td>
<td>3.89 (0.75)</td>
<td>4.04 (0.74)</td>
<td>-2.38</td>
<td>0.018*</td>
</tr>
<tr>
<td>2. Nursing is only suitable for people who want a secure job.</td>
<td>3.57 (0.86)</td>
<td>3.58 (1.00)</td>
<td>-0.12</td>
<td>0.903</td>
</tr>
<tr>
<td>3. Everyone would benefit if nurses spent less time in research and more time caring for patients.</td>
<td>2.92 (0.99)</td>
<td>2.91 (1.03)</td>
<td>0.11</td>
<td>0.917</td>
</tr>
<tr>
<td>4. Nursing can save lives, which makes it a meaningful job.</td>
<td>4.10 (0.80)</td>
<td>4.27 (0.55)</td>
<td>-3.02</td>
<td>0.003**</td>
</tr>
<tr>
<td>5. People select nursing courses because they cannot achieve the academic standards to enter other preferred course choices.</td>
<td>3.59 (0.95)</td>
<td>3.64 (0.98)</td>
<td>-0.68</td>
<td>0.498</td>
</tr>
<tr>
<td>6. Nursing can secure family income.</td>
<td>3.61 (0.75)</td>
<td>3.87 (0.69)</td>
<td>-4.16</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>7. Nursing is a dangerous job that requires frequent contact with highly infectious patients.</td>
<td>2.49 (0.78)</td>
<td>2.28 (0.72)</td>
<td>3.18</td>
<td>0.002**</td>
</tr>
<tr>
<td>8. Nursing requires expert skills.</td>
<td>3.89 (0.72)</td>
<td>4.01 (0.57)</td>
<td>-2.16</td>
<td>0.031*</td>
</tr>
<tr>
<td>9. Studying in a nursing programme is costly.</td>
<td>2.30 (0.77)</td>
<td>2.69 (0.74)</td>
<td>-6.15</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>10. Nurses are well-educated.</td>
<td>3.69 (0.70)</td>
<td>3.76 (0.67)</td>
<td>-1.25</td>
<td>0.210</td>
</tr>
<tr>
<td>11. Nursing is an unacceptable job that requires the handling of dead bodies.</td>
<td>3.23 (0.88)</td>
<td>3.63 (0.78)</td>
<td>-5.60</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>12. Nursing programmes are difficult.</td>
<td>3.48 (0.84)</td>
<td>3.70 (0.88)</td>
<td>-3.12</td>
<td>0.002**</td>
</tr>
<tr>
<td>13. Nursing income is attractive.</td>
<td>3.58 (0.73)</td>
<td>3.82 (0.62)</td>
<td>-4.18</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>14. The role of nurses is less important than that of doctors.</td>
<td>3.50 (0.89)</td>
<td>3.44 (0.98)</td>
<td>0.72</td>
<td>0.474</td>
</tr>
<tr>
<td>15. Nursing provides less opportunity to raise social status.</td>
<td>3.26 (0.77)</td>
<td>3.29 (0.84)</td>
<td>-0.41</td>
<td>0.681</td>
</tr>
<tr>
<td>16. Nursing is a respectable profession.</td>
<td>3.66 (0.78)</td>
<td>3.66 (0.77)</td>
<td>-0.02</td>
<td>0.984</td>
</tr>
<tr>
<td>17. Nursing cannot provide financial security.</td>
<td>3.45 (0.69)</td>
<td>3.48 (0.73)</td>
<td>-0.49</td>
<td>0.627</td>
</tr>
<tr>
<td>18. Shift duty nursing work (including nights and holidays) provides more leisure time during weekdays.</td>
<td>2.77 (0.90)</td>
<td>2.52 (0.97)</td>
<td>3.18</td>
<td>0.002**</td>
</tr>
<tr>
<td>19. Nursing is a job suitable for both men and women.</td>
<td>3.92 (0.83)</td>
<td>3.99 (0.59)</td>
<td>-1.00</td>
<td>0.317</td>
</tr>
<tr>
<td>20. Nurses are just a subsidiary of physicians.</td>
<td>3.63 (0.84)</td>
<td>3.74 (0.94)</td>
<td>-1.50</td>
<td>0.134</td>
</tr>
<tr>
<td>21. Nursing is a disgusting job in which unpleasant, low-skilled ‘dirty/messy’ work is performed.</td>
<td>3.28 (0.92)</td>
<td>3.56 (0.88)</td>
<td>-3.67</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>22. People who can enter nursing courses have achieved good academic standard.</td>
<td>3.41 (0.72)</td>
<td>3.23 (0.67)</td>
<td>2.98</td>
<td>0.003**</td>
</tr>
<tr>
<td>23. Nurses can only follow orders from physicians without queries.</td>
<td>3.44 (0.92)</td>
<td>3.96 (0.80)</td>
<td>-7.25</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>24. Nurses are influential in the development of health care policies.</td>
<td>3.42 (0.69)</td>
<td>3.45 (0.69)</td>
<td>-0.51</td>
<td>0.614</td>
</tr>
<tr>
<td>25. Nursing has a low salary</td>
<td>3.33 (0.71)</td>
<td>3.24 (0.90)</td>
<td>1.41</td>
<td>0.158</td>
</tr>
<tr>
<td>26. Nursing is a low prestige occupation.</td>
<td>3.43 (0.78)</td>
<td>3.51 (0.78)</td>
<td>-1.20</td>
<td>0.233</td>
</tr>
<tr>
<td>27. Nurses can have their own professional judgments.</td>
<td>3.64 (0.70)</td>
<td>4.08 (0.52)</td>
<td>-8.51</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>28. Nurses incorporating research findings into clinical practice would improve patient care standards.</td>
<td>3.65 (0.64)</td>
<td>4.01 (0.53)</td>
<td>-7.32</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>29. Shift duty nursing work (including nights and holidays) affects normal social life.</td>
<td>2.43 (0.85)</td>
<td>1.94 (0.70)</td>
<td>7.41</td>
<td>&lt;0.001***</td>
</tr>
<tr>
<td>30. The services provided by nurses are as important as those provided by physicians.</td>
<td>3.96 (0.83)</td>
<td>3.99 (0.68)</td>
<td>-0.34</td>
<td>0.736</td>
</tr>
</tbody>
</table>

Overall Mean Score of PNC Scale

3.42 (0.29) 3.51 (0.28) -3.84 <0.001***

*p ≤ 0.05, **p ≤ 0.01, and ***p ≤ 0.001
4.11 Correlation between the Overall Perceptions of Nursing as a Career (Part 5 of the NCPQ) and Different Variables (Objective 7&8)

The relationship between the overall mean score of the PNC scale (Part 5 of the NCPQ) and different variables were examined. Pearson’s correlation test was used to examine the relationship between the overall mean scores of the PNC (Part 5 of the NCPQ) and VIPNC scales (Part 4 of the NCPQ). Pearson Product-Moment Correlation is used to describe the relationship between interval or ratio variables that allows you to make predictions from one variable to another variable (Jackson, 2009). Spearman’s correlation test was used to examine the relationship between the overall mean score of the PNC scale (Part 5 of the NCPQ) and different variables such as the mean scores of individual variables in the VIPNC scale (Part 4 of the NCPQ), the goal of choosing nursing as a career (Part 3 of the NCPQ, Question 2). Spearman's rank correlation is a nonparametric measure to describe the relationship between two variables (Jackson, 2009).

4.11.1 Correlation between the Overall Perceptions of Nursing as a Career (Part 5 of the NCPQ) and Different Variables for Health-Studies Students

According to the Table 11, it showed the correlation between the overall mean score of the PNC scale (Part 5 of the NCP) and different variables for health-studies students and university-based general nursing students. There was a statistically mild positive correlation between the overall mean scores of the PNC (Part 5 of the NCPQ) and VIPNC scales (Part 4 of the NCPQ) for health-studies students (r = 0.29, p < 0.001) (Cohen, 1988). When analysing the correlation between the overall mean score of the PNC scale (Part 5 of the NCPQ) and the mean scores of individual variables in the VIPNC scale (Part 4 of the NCPQ), the results showed that the Spearman’s
correlation coefficient ranged from 0.01 to 0.33, with some exhibiting a statistically significant association ($p \leq 0.01$).

The results showed moderate positive correlations between the overall mean score of the PNC scale (Part 5 of the NCPQ) and different variables of the VIPNC scale for health-studies students such as item 24 ‘your health care-related work experiences’ ($r = 0.33, p < 0.001$), item 23 ‘your volunteer work experiences’ ($r = 0.32, p < 0.001$) (Cohen, 1988).

There were also weak positive correlations between the overall mean score of the PNC scale (Part 5 of the NCPQ) and different variables of the VIPNC scale for health-studies students such as item 17 ‘your reading about medicine or nursing’ ($r = 0.27, p < 0.001$), item 22 ‘your experiences of caring for a sick family member or friend’ ($r = 0.24, p < 0.001$), item 21 ‘your experiences visiting patients’ ($r = 0.22, p < 0.001$), item 18 ‘your perceived image of nurses through the media’ ($r = 0.22, p < 0.001$), item 13 ‘your contact with nurses’ ($r = 0.21, p < 0.001$), item 3 ‘your personality’ ($r = 0.21, p < 0.001$) (Cohen, 1988).

The results also showed a statistically moderate positive correlation between the overall mean score of the PNC scale (Part 5 of the NCPQ) and the goal of choosing nursing as a career (Part 3 of the NCPQ, Question 2) for health-studies students ($r = 0.31, p < 0.001$) (Cohen, 1988).
4.11.2 Correlation between the Overall Perceptions of Nursing as a Career (Part 5 of the NCPQ) and Different Variables for University-Based General Nursing Students

According to the Table 11, there was a statistically mild positive correlation between the overall mean scores of the PNC (Part 5 of the NCPQ) and VIPNC scales (Part 4 of the NCPQ) for university-based general nursing students ($r = 0.24$, $p < 0.001$) (Cohen, 1988). When analysing the correlation between the overall mean score of the PNC scale (Part 5 of the NCPQ) and the mean scores of individual variables in the VIPNC scale (Part 4 of the NCPQ), the results showed that the Spearman’s correlation coefficient ranged from 0.03 to 0.30, with some exhibiting a statistically significant association ($p \leq 0.01$).

The results showed positive correlations between the overall mean score of the PNC scale (Part 5 of the NCPQ) and different variables of the VIPNC scale for university-based general nursing students such as item 3 ‘your personality’ ($r = 0.30$, $p < 0.001$), item 24 ‘your health care-related work experiences’ ($r = 0.27$, $p < 0.001$), item 4 ‘your health status’ ($r = 0.21$, $p < 0.001$), and item 8 ‘your mother’ ($r = 0.20$, $p = 0.001$).

The results also showed a statistically moderate positive correlation between the overall mean score of the PNC scale (Part 5 of the NCPQ) and the goal of choosing nursing as a career (Part 3 of the NCPQ, Question 2) for university-based general nursing students ($r = 0.34$, $p < 0.001$) (Cohen, 1988). For overall both student groups, the students held more positive perceptions of nursing as a career had a stronger desire to choose nursing ($r = 0.37$, $p < 0.001$).
Table 11: Correlations between Overall Mean Score of the PNC Scale and Different Variables

<table>
<thead>
<tr>
<th>VIPNC items (Spearman’s Correlation)</th>
<th>Health-Studies Students</th>
<th>University-Based General Nursing Students</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Overall mean score of the PNC scale</td>
<td>Overall mean score of the PNC scale</td>
<td>Overall mean score of the PNC scale</td>
</tr>
<tr>
<td>r  p value</td>
<td>r  p value</td>
<td>r  p value</td>
<td>r  p value</td>
</tr>
<tr>
<td>1. Your gender</td>
<td>0.13 0.028**</td>
<td>0.13 0.033*</td>
<td></td>
</tr>
<tr>
<td>2. Your race</td>
<td>0.07 0.252</td>
<td>0.07 0.212</td>
<td></td>
</tr>
<tr>
<td>3. Your personality</td>
<td>0.21 &lt;0.001***</td>
<td>0.30 &lt;0.001***</td>
<td></td>
</tr>
<tr>
<td>4. Your health status</td>
<td>0.08 0.176</td>
<td>0.21 &lt;0.001***</td>
<td></td>
</tr>
<tr>
<td>5. Your past academic performance</td>
<td>0.07 0.273</td>
<td>0.10 0.109</td>
<td></td>
</tr>
<tr>
<td>6. Your current academic performance</td>
<td>0.16 0.006**</td>
<td>0.11 0.063</td>
<td></td>
</tr>
<tr>
<td>7. Your father</td>
<td>0.01 0.819</td>
<td>0.11 0.069</td>
<td></td>
</tr>
<tr>
<td>8. Your mother</td>
<td>0.02 0.795</td>
<td>0.20 0.001***</td>
<td></td>
</tr>
<tr>
<td>9. Your close relatives</td>
<td>0.13 0.030*</td>
<td>0.12 0.042</td>
<td></td>
</tr>
<tr>
<td>10. Your close friends</td>
<td>0.17 0.006**</td>
<td>0.19 0.002***</td>
<td></td>
</tr>
<tr>
<td>11. Your teachers</td>
<td>0.11 0.079</td>
<td>0.18 0.003**</td>
<td></td>
</tr>
<tr>
<td>12. Your career advisors</td>
<td>0.08 0.210</td>
<td>0.04 0.483</td>
<td></td>
</tr>
<tr>
<td>13. Your contact with nurses</td>
<td>0.21 &lt;0.001***</td>
<td>0.08 0.198</td>
<td></td>
</tr>
<tr>
<td>14. Your contact with physicians</td>
<td>0.14 0.019</td>
<td>0.05 0.437</td>
<td></td>
</tr>
<tr>
<td>15. Your family member, relative, or friend employed as a practicing nurse (RN/EN)</td>
<td>0.07 0.275</td>
<td>0.15 0.014*</td>
<td></td>
</tr>
<tr>
<td>16. Your family member, relative, or friend employed in a health-related career other than nursing</td>
<td>0.09 0.116</td>
<td>0.06 0.330</td>
<td></td>
</tr>
<tr>
<td>17. Your reading about medicine or nursing</td>
<td>0.27 &lt;0.001***</td>
<td>0.05 0.371</td>
<td></td>
</tr>
<tr>
<td>18. Your perceived image of nurses through the media</td>
<td>0.22 &lt;0.001***</td>
<td>0.13 0.031*</td>
<td></td>
</tr>
<tr>
<td>19. Your hospitalization experiences</td>
<td>0.04 0.462</td>
<td>0.03 0.665</td>
<td></td>
</tr>
<tr>
<td>20. Your experiences with outpatient health services</td>
<td>0.13 0.031</td>
<td>0.04 0.547</td>
<td></td>
</tr>
<tr>
<td>21. Your experiences visiting patients</td>
<td>0.22 &lt;0.001***</td>
<td>0.18 0.003*</td>
<td></td>
</tr>
<tr>
<td>22. Your experiences of caring for a sick family member or friend</td>
<td>0.24 &lt;0.001***</td>
<td>0.19 0.002*</td>
<td></td>
</tr>
<tr>
<td>23. Your volunteer work experiences</td>
<td>0.32 &lt;0.001***</td>
<td>0.18 0.003*</td>
<td></td>
</tr>
<tr>
<td>24. Your health care-related work experiences (including practicum)</td>
<td>0.33 &lt;0.001***</td>
<td>0.27 &lt;0.001***</td>
<td></td>
</tr>
<tr>
<td>25. Your non-health care-related work experiences (including practicum)</td>
<td>0.05 0.368</td>
<td>0.08 0.173</td>
<td></td>
</tr>
<tr>
<td>Overall mean score of the VIPNC scale (Pearson’s correlation)</td>
<td>0.29 &lt;0.001***</td>
<td>0.24 &lt;0.001***</td>
<td></td>
</tr>
<tr>
<td>The goal of choosing nursing as a career (Part 3 of the NCPQ, Question 2) (Spearman’s Correlation)</td>
<td>0.31 &lt;0.001***</td>
<td>0.34 &lt;0.001***</td>
<td>0.37 &lt;0.001***</td>
</tr>
</tbody>
</table>

*p ≤ 0.05, **p ≤ 0.01, and ***p ≤ 0.001
4.12 Factor Structure of the VIPNC (Part 4 of the NCPQ) & PNC Scales (Part 5 of the NCPQ)

To explore the factor structure and construct validity of the VIPNC (Part 4 of the NCPQ) and PNC (Part 5 of the NCPQ) scales, exploratory factor analysis using principal axis factoring was conducted. Exploratory factor analysis is often used to analyse the structure of a set of variables (Pallant, 2007).

4.12.1 Factor Structure & Internal Consistency and Reliability of the VIPNC Scale (Part 4 of the NCPQ)

An exploratory factor analysis was used to discover the factor structure of the VIPNC scale (Part 4 of the NCPQ). Missing values replaced with means were used to form the correlation matrix for the analysis. The data were deemed suitable for factor analysis with a 0.85 KMO measure of sampling adequacy in this study (Kaiser, 1970; Kaiser, 1974) and a Bartlett’s test of sphericity (Bartlett, 1954) achieving statistical significance (p < 0.001).

The results show seven components with eigenvalues above 1. However, the scree plot (Figure 3) revealed that the point of inflexion was in the fourth factor. Given that 562 sample size with 25 items in part 4 VIPNC scale, the sample to item ratio was 22:1 which provides over 70% accuracy (Costello & Osborne, 2005). The principal components analysis with Varimax rotation was performed with four extraction factors, accounting for 48.0% of the variance (Table 12a). A factor analysis with total variance ranging from 40 to 60% is considered sufficient (Wood & Haber, 2002). Rotated factor loadings of the VIPNC scale represent how the variables are weighted for each factor and also the correlation between the variables and the factor.
They are correlations thus the possible values range from -1 to +1 (Polit & Hungler, 1997). The interpretation of the factors is based on variables with loadings greater than 0.30 to ensure an adequate number of items in each factor interpretation. Table 12b describes the rotated component matrix of the VIPNC scale and Table 12c describes the factor loading, item-total correlation & Cronbach’s Alpha of individual factor for VIPNC scale.
Figure 3: Scree Plot of Component Numbers for the VIPNC Scale (Part 4 of the NCPQ)

Table 12a: Factor Extraction for VIPNC Scale (Part 4 of the NCPQ)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Rotated Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Eigenvalues</td>
</tr>
<tr>
<td>Experience</td>
<td>3.61</td>
</tr>
<tr>
<td>Contact with Professional</td>
<td>3.19</td>
</tr>
<tr>
<td>Personal</td>
<td>2.82</td>
</tr>
<tr>
<td>Significant Other</td>
<td>2.40</td>
</tr>
</tbody>
</table>
The 4 factors extracted from the VIPNC scale (Part 4 of the NCPQ) were as follows:

(1) **Factor 1 – “Experience” Factor**

Factor 1 ‘Experience’ factor composed of 9 items with factor loadings ranging from 0.41 to 0.76. It explained 14.4% of the variance. Item analysis was performed for the subscale. It showed the correlation between the respective item and the ‘experience’ factor. The item-total correlations of ‘experience’ factor were from 0.38 to 0.58. An item-correlation with more than 0.2 or 0.3 indicates the item measuring the same construct of the scale (Everitt, 2002; Field, 2005). Cronbach’s alpha of ‘experience’ factor if item deleted were from 0.78 to 0.806 which is lower than the Cronbach’s alpha of ‘experience’ factor at 0.81 indicating no items needed to be deleted from the ‘experience’ factor. The ‘experience’ factor indicated experiences related to care delivery and social experiences. There were two items, ‘your contact with nurses’ and ‘your contact with physicians’ from the original ‘contact with professional’ factor sitting within the ‘experience’ factor.

Factor 1 comprised 9 items:

1. Your experiences visiting patients
2. Your experiences with outpatient health services
3. Your experiences of caring for a sick family member or friend
4. Your hospitalization experiences
5. Your health care-related work experiences (including practicum)
6. Your volunteer work experiences
7. Your non-health care-related work experiences (including practicum)
8. Your perceived image of nurses through the media
9. Your reading about medicine or nursing
(2) Factor 2 – “Contact with Professional” Factor

Factor 2 ‘Contact with Professional’ factor composed of 7 items with factor loadings ranging from 0.53 to 0.68. It explained 12.8% of the variance. Item analysis was performed for the subscale. It showed the correlation between the respective item and the ‘contact with professional’ factor. The item-total correlations of ‘contact with professional’ factor were from 0.47 to 0.63. An item-correlation with more than 0.2 or 0.3 indicates the item measuring the same construct of the scale (Everitt, 2002; Field, 2005). Cronbach’s alpha of ‘contact with professional’ factor if item deleted were from 0.76 to 0.79 which is lower than the Cronbach’s alpha of ‘contact with professional’ factor at 0.81 indicating no items needed to be deleted from the ‘contact with professional’ factor. The ‘contact with professional’ factor referred to contact with professionals such as nurses and physicians. It had one item, ‘your health care-related work experiences (including practicum)’ from the original ‘experience’ factor sitting within the ‘contact with professional’ factor.

Factor 2 comprised 7 items:

1. Your contact with nurses
2. Your contact with physicians
3. Your teachers
4. Your family member, relative, or friend employed in a health-related career other than nursing
5. Your career advisors
6. Your family member, relative, or friend employed as a practicing nurse (RN/EN)
7. Your close friends
(3) Factor 3 – “Personal” Factor

Factor 3 ‘personal’ factor composed of 6 items with factor loadings ranging from 0.57 to 0.67. It explained 11.3% of the variance. Item analysis was performed for the subscale. It showed the correlation between the respective item and the ‘personal’ factor. The item-total correlations of ‘personal’ factor were from 0.45 to 0.51. Cronbach’s alpha of ‘personal’ factor if item deleted were from 0.68 to 0.70 which is lower than the Cronbach’s alpha of ‘personal’ factor at 0.73 indicating no items needed to be deleted from the ‘personal’ factor.

Factor 3 comprised 6 items:

1. Your gender
2. Your current academic performance
3. Your past academic performance
4. Your race
5. Your health status
6. Your personality
(4) Factor 4 – “Significant Other” Factor

Factor 4 ‘significant other’ factor composed of 3 items with factor loadings ranging from 0.71 to 0.82. It explained 9.6% of the variance. Item analysis was performed for the subscale. It showed the correlation between the respective item and the ‘significant other’ factor. The item-total correlations of ‘significant other’ factor were from 0.56 to 0.68. An item-correlation with more than 0.2 or 0.3 indicates the item measuring the same construct of the scale (Everitt, 2002; Field, 2005). Cronbach’s alpha of ‘significant other’ factor if item deleted were from 0.66 to 0.78 which is lower than the Cronbach’s alpha of ‘significant other’ factor at 0.79 indicating no items needed to be deleted from the ‘significant other’ factor.

Factor 4 comprised 3 items:

1. Your mother
2. Your father
3. Your close relatives

To conclude, Cronbach’s alpha was used to test the internal consistency and reliability of each factor in the VIPNC scale (Part 4 of the NCPQ): 0.81 (experience); 0.81 (contact with professional); 0.73 (personal); 0.79 (significant other). The overall Cronbach’s alpha of the VIPNC scale (Part 4 of the NCPQ) was 0.88.
Table 12b: Rotated Component Matrix of the VIPNC Scale (Part 4 of the NCPQ) with Four Dimensions Set for Extraction

<table>
<thead>
<tr>
<th>Rotated Component Matrixa</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Experience Factor</strong></td>
<td></td>
</tr>
<tr>
<td>21. Your experiences visiting patients</td>
<td>0.764</td>
</tr>
<tr>
<td>20. Your experiences with outpatient health services</td>
<td>0.698</td>
</tr>
<tr>
<td>22. Your experiences of caring for a sick family member or friend</td>
<td>0.658</td>
</tr>
<tr>
<td>19. Your hospitalization experiences</td>
<td>0.580</td>
</tr>
<tr>
<td>24. Your health care-related work experiences (including practicum)</td>
<td>0.566</td>
</tr>
<tr>
<td>23. Your volunteer work experiences</td>
<td>0.531</td>
</tr>
<tr>
<td>25. Your non-health care-related work experiences (including practicum)</td>
<td>0.493</td>
</tr>
<tr>
<td>18. Your perceived image of nurses through the media</td>
<td>0.481</td>
</tr>
<tr>
<td>17. Your reading about medicine or nursing</td>
<td>0.410</td>
</tr>
<tr>
<td><strong>Contact with Professional Factor</strong></td>
<td></td>
</tr>
<tr>
<td>13. Your contact with nurses</td>
<td>0.409</td>
</tr>
<tr>
<td>14. Your contact with physicians</td>
<td>0.398</td>
</tr>
<tr>
<td>11. Your teachers</td>
<td>0.627</td>
</tr>
<tr>
<td>16. Your family member, relative, or friend employed in a health-related career other than nursing</td>
<td>0.625</td>
</tr>
<tr>
<td>12. Your career advisors</td>
<td>0.611</td>
</tr>
<tr>
<td>15. Your family member, relative, or friend employed as a practicing nurse (RN/EN)</td>
<td>0.595</td>
</tr>
<tr>
<td>10. Your close friends</td>
<td>0.533</td>
</tr>
<tr>
<td><strong>Personal Factor</strong></td>
<td></td>
</tr>
<tr>
<td>1. Your gender</td>
<td>0.673</td>
</tr>
<tr>
<td>6. Your current academic performance</td>
<td>0.661</td>
</tr>
<tr>
<td>5. Your past academic performance</td>
<td>0.651</td>
</tr>
<tr>
<td>2. Your race</td>
<td>0.585</td>
</tr>
<tr>
<td>4. Your health status</td>
<td>0.574</td>
</tr>
<tr>
<td>3. Your personality</td>
<td>0.573</td>
</tr>
<tr>
<td><strong>Significant Other Factor</strong></td>
<td></td>
</tr>
<tr>
<td>8. Your mother</td>
<td>0.817</td>
</tr>
<tr>
<td>7. Your father</td>
<td>0.784</td>
</tr>
<tr>
<td>9. Your close relatives</td>
<td>0.305</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.
Table 12c: Factor loading, Item-Total Correlation & Cronbach’s Alpha of Individual Factor for VIPNC Scale

<table>
<thead>
<tr>
<th>Factor</th>
<th>Factor loading</th>
<th>Corrected Item-Total Correlation (Individual Factor)</th>
<th>Cronbach’s Alpha if Item Deleted (Individual Factor)</th>
<th>Cronbach’s Alpha of Individual Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experience Factor</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.809</td>
</tr>
<tr>
<td>21. Your experiences visiting patients</td>
<td>0.764</td>
<td>0.576</td>
<td>0.781</td>
<td></td>
</tr>
<tr>
<td>20. Your experiences with outpatient health services</td>
<td>0.698</td>
<td>0.523</td>
<td>0.788</td>
<td></td>
</tr>
<tr>
<td>22. Your experiences of caring for a sick family member or friend</td>
<td>0.658</td>
<td>0.574</td>
<td>0.781</td>
<td></td>
</tr>
<tr>
<td>19. Your hospitalization experiences</td>
<td>0.580</td>
<td>0.432</td>
<td>0.799</td>
<td></td>
</tr>
<tr>
<td>24. Your health care-related work experiences (including practicum)</td>
<td>0.566</td>
<td>0.579</td>
<td>0.780</td>
<td></td>
</tr>
<tr>
<td>23. Your volunteer work experiences</td>
<td>0.531</td>
<td>0.546</td>
<td>0.785</td>
<td></td>
</tr>
<tr>
<td>25. Your non-health care-related work experiences (including practicum)</td>
<td>0.493</td>
<td>0.504</td>
<td>0.791</td>
<td></td>
</tr>
<tr>
<td>18. Your perceived image of nurses through the media</td>
<td>0.481</td>
<td>0.382</td>
<td>0.806</td>
<td></td>
</tr>
<tr>
<td>17. Your reading about medicine or nursing</td>
<td>0.410</td>
<td>0.428</td>
<td>0.799</td>
<td></td>
</tr>
<tr>
<td><strong>Contact with Professional Factor</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.805</td>
</tr>
<tr>
<td>13. Your contact with nurses</td>
<td>0.682</td>
<td>0.625</td>
<td>0.762</td>
<td></td>
</tr>
<tr>
<td>14. Your contact with physicians</td>
<td>0.650</td>
<td>0.569</td>
<td>0.773</td>
<td></td>
</tr>
<tr>
<td>11. Your teachers</td>
<td>0.627</td>
<td>0.557</td>
<td>0.776</td>
<td></td>
</tr>
<tr>
<td>16. Your family member, relative, or friend employed in a health-related career other than nursing</td>
<td>0.625</td>
<td>0.516</td>
<td>0.783</td>
<td></td>
</tr>
<tr>
<td>12. Your career advisors</td>
<td>0.611</td>
<td>0.527</td>
<td>0.782</td>
<td></td>
</tr>
<tr>
<td>15. Your family member, relative, or friend employed as a practicing nurse (RN/EN)</td>
<td>0.595</td>
<td>0.466</td>
<td>0.793</td>
<td></td>
</tr>
<tr>
<td>10. Your close friends</td>
<td>0.533</td>
<td>0.513</td>
<td>0.783</td>
<td></td>
</tr>
<tr>
<td><strong>Personal Factor</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.729</td>
</tr>
<tr>
<td>1. Your gender</td>
<td>0.673</td>
<td>0.471</td>
<td>0.690</td>
<td></td>
</tr>
<tr>
<td>6. Your current academic performance</td>
<td>0.661</td>
<td>0.508</td>
<td>0.678</td>
<td></td>
</tr>
<tr>
<td>5. Your past academic performance</td>
<td>0.651</td>
<td>0.497</td>
<td>0.682</td>
<td></td>
</tr>
<tr>
<td>2. Your race</td>
<td>0.585</td>
<td>0.442</td>
<td>0.706</td>
<td></td>
</tr>
<tr>
<td>4. Your health status</td>
<td>0.574</td>
<td>0.456</td>
<td>0.694</td>
<td></td>
</tr>
<tr>
<td>3. Your personality</td>
<td>0.573</td>
<td>0.448</td>
<td>0.697</td>
<td></td>
</tr>
<tr>
<td><strong>Significant Other Factor</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.789</td>
</tr>
<tr>
<td>8. Your mother</td>
<td>0.817</td>
<td>0.681</td>
<td>0.656</td>
<td></td>
</tr>
<tr>
<td>7. Your father</td>
<td>0.784</td>
<td>0.652</td>
<td>0.693</td>
<td></td>
</tr>
<tr>
<td>9. Your close relatives</td>
<td>0.705</td>
<td>0.564</td>
<td>0.781</td>
<td></td>
</tr>
<tr>
<td><strong>Overall Cronbach’s Alpha of the whole VIPNC Scale</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.875</td>
</tr>
</tbody>
</table>
4.13.2 Factor Structure & Internal Consistency and Reliability of the PNC Scale (Part 5 of the NCPQ)

An exploratory factor analysis was also used to discover the factor structure of the PNCS scale (Part 5 of the NCPQ). Missing values replaced with means were used to form the correlation matrix for the analysis. The data were deemed suitable for factor analysis with a 0.80 KMO measure of sampling adequacy in this study (Kaiser, 1970; Kaiser, 1974) and a Bartlett’s test of sphericity (Bartlett, 1954) value achieving statistical significance (p < 0.001).

The results showed nine factors with eigenvalues above 1. However, the scree plot (Figure 4) revealed that the point of inflexion was in the fifth factor. In addition, the six-factor set to nine-factor sets had factors with only one or two variables. Therefore, it was more meaningful to analyse in five factors with four to eight variables in each factor. Given that 562 sample size with 30 items in part 5 PNC scale, the sample to item ratio was 18:1 which provides 60 – 70% accuracy (Costello & Osborne, 2005). The principal components analysis with Varimax rotation was performed with 5 extraction factors, accounting for 42.5% of the variance (Table 13a). A factor analysis with total variance ranging from 40 to 60% is considered sufficient (Wood & Haber, 2002). Rotated factor loadings of the PNC scale represent how the variables are weighted for each factor and also the correlation between the variables and the factor. They are correlations thus the possible values range from -1 to +1 (Polit & Hungler, 1997). The interpretation of the factors was based on variables with loadings greater than 0.30 to ensure an adequate number of variables in each factor’s interpretation. Table 13b describes the rotated component matrix of the PNC scale and Table 13c describes the factor loading, item-total correlation & Cronbach’s Alpha of
individual factor for PNC scale.

Figure 4: Scree Plot of Component Number for the PNC Scale (Part 5 of the NCPQ)

Table 13a: Factor Extraction of PNC Scale (Part 5 of the NCPQ)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Total Eigenvalues</th>
<th>% of Variance</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Professional Factor</td>
<td>3.20</td>
<td>10.7</td>
<td>10.7</td>
</tr>
<tr>
<td>2. Social Factor</td>
<td>2.92</td>
<td>9.7</td>
<td>20.4</td>
</tr>
<tr>
<td>3. Economic Factor</td>
<td>2.40</td>
<td>8.0</td>
<td>28.4</td>
</tr>
<tr>
<td>4. Occupational Factor</td>
<td>2.17</td>
<td>7.2</td>
<td>35.6</td>
</tr>
<tr>
<td>5. Educational Factor</td>
<td>2.06</td>
<td>6.9</td>
<td>42.5</td>
</tr>
</tbody>
</table>
The five factors extracted from the PNC scale (Part 5 of the NCPQ) were as follows.

(1) Factor 1 – “Professional” Factor

Factor 1 ‘Professional' factor composed of 8 items with factor loadings ranging from -0.48 to -0.54 and from 0.40 to 0.73. It explained 10.7% of the variance. Item analysis was performed for the subscale. It showed the correlation between the respective item and the ‘professional' factor. The item-total correlations of ‘professional' factor were from 0.31 to 0.56. An item-correlation with more than 0.2 or 0.3 indicates the item measuring the same construct of the scale (Everitt, 2002; Field, 2005). Cronbach’s alpha of ‘professional' factor if item deleted were from 0.68 to 0.725 which is lower than the Cronbach’s alpha of ‘professional' factor at 0.73 indicating no items needed to be deleted from the 'professional' factor.

Factor 1 comprised 8 items:

1. Nurses can have their own professional judgments.
2. Nurses incorporating research findings into clinical practice would improve patient care standards.
3. Nursing is a job suitable for both men and women.
4. Nursing is an unacceptable job that requires the handling of dead bodies.
5. The services provided by nurses are as important as those provided by physicians.
6. Nursing is a disgusting job in which unpleasant, low-skilled ‘dirty/messy’ work is performed.
7. Nursing can save lives, which makes it a meaningful job.
8. Nurses are influential in the development of health care policies.
(2) Factor 2 – “Social” Factor

Factor 2 ‘Social’ factor composed of 7 items with factor loadings ranging from 0.40 to 0.68. It explained 9.7% of the variance. Item analysis was performed for the subscale. It showed the correlation between the respective item and the ‘social’ factor. The item-total correlations of ‘social’ factor were from 0.31 to 0.52. An item-correlation with more than 0.2 or 0.3 indicates the item measuring the same construct of the scale (Everitt, 2002; Field, 2005). Cronbach’s alpha of ‘social’ factor if item deleted were from 0.65 to 0.709 which is lower than the Cronbach’s alpha of ‘social’ factor at 0.71 indicating no items needed to be deleted from the ‘social’ factor.

Factor 2 comprised 7 items:

1. Nurses are just a subsidiary of physicians.
2. The role of nurses is less important than that of doctors.
3. Nursing is only suitable for people who want a secure job.
4. Nursing provides less opportunity to raise social status.
5. Nurses can only follow orders from physicians without queries.
6. Nursing is a feminine job which is only suitable for women.
7. People select nursing courses because they cannot achieve the academic standards to enter other preferred course choices.
(3) Factor 3 – “Economic” Factor

Factor 3 ‘Economic’ factor composed of 5 items with factor loadings ranging from -0.65 to -0.68 and from 0.53 to 0.71. It explained 8.0% of the variance. Item analysis was performed for the subscale. It showed the correlation between the respective item and the ‘economic’ factor. The item-total correlations of ‘economic’ factor were from 0.39 to 0.54. An item-correlation with more than 0.2 or 0.3 indicates the item measuring the same construct of the scale (Everitt, 2002; Field, 2005). Cronbach’s alpha of ‘economic’ factor if item deleted were from 0.60 to 0.65 which is lower than the Cronbach’s alpha of ‘economic’ factor at 0.69 indicating no items needed to be deleted from the ‘economic’ factor.

Factor 3 comprised 5 items:

1. Nursing cannot provide financial security.
2. Nursing income is attractive.
3. Nursing can secure family income.
4. Nursing has a low salary.
5. Nursing is a low prestige occupation.
(4) Factor 4 – “Occupational” Factor

Factor 4 ‘Occupational’ factor composed of 4 items with factor loadings of -0.51 and ranging from 0.54 to 0.68. It explained 7.2% of the variance. Item analysis was performed for the subscale. It showed the correlation between the respective item and the ‘occupational’ factor. The item-total correlations of ‘occupational’ factor were from 0.27 to 0.40. An item-correlation with more than 0.2 or 0.3 indicates the item measuring the same construct of the scale (Everitt, 2002; Field, 2005). Although item 7, 12, 18 had low item-total correlations expressing ‘occupational’ factor, since these three items capture important ideas of students’ thoughts that the results were shown in the descriptive statistics. Cronbach’s alpha of ‘occupational’ factor if item deleted were from 0.36 to 0.48 which is lower than the Cronbach’s alpha of ‘occupational’ factor at 0.51 indicating no items needed to be deleted from the ‘occupational’ factor. However, as three item-correlations and Cronbach’s alpha of ‘occupational’ factor were low, items in this ‘occupational’ factor should be considered for future revising.

Factor 4 comprised 4 items:

1. Shift duty nursing work (including nights and holidays) affects normal social life.
2. Nursing is a dangerous job that requires frequent contact with highly infectious patients.
3. Nursing programmes are difficult.
4. Shift duty nursing work (including nights and holidays) provides more leisure time during weekdays.
(5) Factor 5 – “Educational” Factor

Factor 5 ‘Educational’ factor composed of 5 items with factor loadings ranging from 0.43 to 0.66. It explained 6.9% of the variance. Item analysis was performed for the subscale. It showed the correlation between the respective item and the ‘educational’ factor. The item-total correlations of ‘educational’ factor were from 0.26 to 0.50. An item-correlation with more than 0.2 or 0.3 indicates the item measuring the same construct of the scale (Everitt, 2002; Field, 2005). Although item 9 and 16 had low item-total correlations expressing ‘educational’ factor, since these two items capture important ideas of students’ thoughts that the results were shown in the descriptive statistics. Cronbach’s alpha of ‘educational’ factor if item deleted were from 0.45 to 0.58 which is lower than the Cronbach’s alpha of ‘educational’ factor at 0.59 indicating no items needed to be deleted from the ‘educational’ factor. However, as two item-correlations and Cronbach’s alpha of ‘educational’ factor were low, these items should be considered for future revising.

Factor 5 comprised 5 items:

1. Nurses are well-educated.
2. People who can enter nursing courses have achieved good academic standard.
3. Studying in a nursing programme is costly.
4. Nursing is a respectable profession.
5. Nursing requires expert skills.

To conclude, Cronbach’s alpha coefficients were used to test the internal consistency and reliability of each factor in the PNC scale (Part 5 of the NCPQ): 0.73 (professional); 0.71 (social); 0.69 (economic); 0.51 (occupational); and 0.59
(educational). The overall Cronbach’s alpha of the PNC scale (Part 5 of the NCPQ) was 0.78.
Table 13b: Rotated Component Matrix of the PNC Scale (Part 5 of the NCPQ) with Five Dimensions Set for Extraction

<table>
<thead>
<tr>
<th>Rotated Component Matrixa</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Professional Factor</strong></td>
<td></td>
</tr>
<tr>
<td>27. Nurses can have their own professional judgments.</td>
<td>0.731</td>
</tr>
<tr>
<td>28. Nurses incorporating research findings into clinical practice would improve patient care standards.</td>
<td>0.646</td>
</tr>
<tr>
<td>19. Nursing is a job suitable for both men and women.</td>
<td>0.543</td>
</tr>
<tr>
<td>11. Nursing is an unacceptable job that requires the handling of dead bodies.</td>
<td>-0.538</td>
</tr>
<tr>
<td>30. The services provided by nurses are as important as those provided by physicians.</td>
<td>0.522</td>
</tr>
<tr>
<td>21. Nursing is a disgusting job in which unpleasant, low-skilled ‘dirty/messy’ work is performed.</td>
<td>-0.481</td>
</tr>
<tr>
<td>4. Nursing can save lives, which makes it a meaningful job.</td>
<td>0.458</td>
</tr>
<tr>
<td>24. Nurses are influential in the development of health care policies.</td>
<td>0.404</td>
</tr>
<tr>
<td><strong>Social Factor</strong></td>
<td></td>
</tr>
<tr>
<td>20. Nurses are just a subsidiary of physicians.</td>
<td></td>
</tr>
<tr>
<td>14. The role of nurses is less important than that of doctors.</td>
<td></td>
</tr>
<tr>
<td>2. Nursing is only suitable for people who want a secure job.</td>
<td></td>
</tr>
<tr>
<td>15. Nursing provides less opportunity to raise social status.</td>
<td></td>
</tr>
<tr>
<td>23. Nurses can only follow orders from physicians without queries.</td>
<td></td>
</tr>
<tr>
<td>1. Nursing is a feminine job which is only suitable for women</td>
<td></td>
</tr>
<tr>
<td>5. People select nursing courses because they cannot achieve the academic standards to enter other preferred course choices.</td>
<td></td>
</tr>
<tr>
<td>3. Everyone would benefit if nurses spent less time in research and more time caring for patients.</td>
<td></td>
</tr>
<tr>
<td><strong>Economic Factor</strong></td>
<td></td>
</tr>
<tr>
<td>17. Nursing cannot provide financial security.</td>
<td></td>
</tr>
<tr>
<td>13. Nursing income is attractive.</td>
<td></td>
</tr>
<tr>
<td>6. Nursing can secure family income.</td>
<td></td>
</tr>
<tr>
<td>25. Nursing has a low salary</td>
<td></td>
</tr>
<tr>
<td>26. Nursing is a low prestige occupation.</td>
<td></td>
</tr>
<tr>
<td><strong>Occupational Factor</strong></td>
<td></td>
</tr>
<tr>
<td>29. Shift duty nursing work (including nights and holidays) affects normal social life.</td>
<td></td>
</tr>
<tr>
<td>7. Nursing is a dangerous job that requires frequent contact with highly infectious patients.</td>
<td></td>
</tr>
<tr>
<td>12. Nursing programmes are difficult.</td>
<td></td>
</tr>
<tr>
<td>18. Shift duty nursing work (including nights and holidays) provides more leisure time during weekdays.</td>
<td></td>
</tr>
<tr>
<td><strong>Educational Factor</strong></td>
<td></td>
</tr>
<tr>
<td>10. Nurses are well-educated.</td>
<td></td>
</tr>
<tr>
<td>22. People who can enter nursing courses have achieved good academic standard.</td>
<td></td>
</tr>
<tr>
<td>9. Studying in a nursing programme is costly.</td>
<td></td>
</tr>
<tr>
<td>16. Nursing is a respectable profession.</td>
<td></td>
</tr>
<tr>
<td>8. Nursing requires expert skills.</td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
a. Rotation converged in 8 iterations.
| Table 13c: Factor loading, Item-Total Statistics & Cronbach’s Alpha of Individual Factor for PNC Scale |
|---|---|---|---|---|
| **Professional Factor** | Factor loading | Corrected Item-Total Correlation (Individual Factor) | Cronbach’s Alpha if Item Deleted (Individual Factor) | Cronbach’s Alpha of Individual Factor |
| 27. | Nurses can have their own professional judgments. | 0.731 | 0.558 | 0.679 |
| 28. | Nurses incorporating research findings into clinical practice would improve patient care standards. | 0.646 | 0.455 | 0.701 |
| 19. | Nursing is a job suitable for both men and women. | 0.543 | 0.410 | 0.707 |
| 11. | Nursing is an unacceptable job that requires the handling of dead bodies. | -0.538 | 0.411 | 0.708 |
| 30. | The services provided by nurses are as important as those provided by physicians. | 0.522 | 0.474 | 0.694 |
| 21. | Nursing is a disgusting job in which unpleasant, low-skilled ‘dirty/messy’ work is performed. | -0.481 | 0.405 | 0.712 |
| 4. | Nursing can save lives, which makes it a meaningful job. | 0.458 | 0.406 | 0.708 |
| 24. | Nurses are influential in the development of health care policies. | 0.404 | 0.312 | 0.725 |
| **Social Factor** | | | | 0.712 |
| 20. | Nurses are just a subsidiary of physicians. | 0.675 | 0.523 | 0.653 |
| 14. | The role of nurses is less important than that of doctors. | 0.648 | 0.470 | 0.667 |
| 2. | Nursing is only suitable for people who want a secure job. | 0.623 | 0.419 | 0.680 |
| 15. | Nursing provides less opportunity to raise social status. | 0.550 | 0.420 | 0.680 |
| 23. | Nurses can only follow orders from physicians without queries. | 0.459 | 0.434 | 0.676 |
| 1. | Nursing is a feminine job which is only suitable for women | 0.426 | 0.391 | 0.688 |
| 5. | People select nursing courses because they cannot achieve the academic standards to enter other preferred course choices. | 0.402 | 0.312 | 0.709 |
| **Economic Factor** | | | | 0.690 |
| 17. | Nursing cannot provide financial security. | 0.711 | 0.539 | 0.600 |
| 13. | Nursing income is attractive. | -0.676 | 0.447 | 0.640 |
| 6. | Nursing can secure family income. | -0.652 | 0.391 | 0.663 |
| 25. | Nursing has a low salary | 0.610 | 0.434 | 0.647 |
| 26. | Nursing is a low prestige occupation. | 0.526 | 0.423 | 0.650 |
| **Occupational Factor** | | | | 0.514 |
| 29. | Shift duty nursing work (including nights and holidays) affects normal social life. | 0.667 | 0.399 | 0.359 |
| 7. | Nursing is a dangerous job that requires frequent contact with highly infectious patients. | 0.565 | 0.273 | 0.469 |
| 12. | Nursing programmes are difficult. | 0.543 | 0.290 | 0.455 |
| 18. | Shift duty nursing work (including nights and holidays) provides more leisure time during weekdays. | -0.513 | 0.268 | 0.481 |
| **Educational Factor** | | | | 0.585 |
| 10. | Nurses are well-educated. | 0.658 | 0.496 | 0.446 |
| 22. | People who can enter nursing courses have achieved good academic standard. | 0.633 | 0.305 | 0.549 |
| 9. | Studying in a nursing programme is costly. | 0.504 | 0.263 | 0.577 |
| 16. | Nursing is a respectable profession. | 0.460 | 0.288 | 0.562 |
| 8. | Nursing requires expert skills. | 0.433 | 0.388 | 0.508 |
| **Overall Cronbach’s Alpha of the whole PNC Scale** | | | | 0.776 |
Chapter 5: Discussion

This chapter discusses the findings in Chapter 4. The goal of choosing nursing as a career among health-studies students and university-based nursing students will be explored. The perceptions of nursing as a career and the variables influencing it will be elaborated in detail.

5.1 Gender Distribution

Nursing has been well known as a female-dominated profession (Foong et al., 1999; Hemsley-Brown & Foskett, 1999; Law & Arthur, 2003). The impression of caring is a kind of feminine personality characteristic (Hemsley-Brown & Foskett, 1999; Nicolson, 1996; Philpot, 2000). Fewer male students at around 33% have studied in both nursing and health-studies programmes in this study. It was consistent with previous studies that less male were studied in nursing (Wang et al., 2011). Wang and colleagues (2011) also explained that the reasons of having less male health-studies and nursing students result from the general public’s negative perceptions of nurses as being characterised by inferiority, femininity, and powerlessness.

5.2 Participants’ Work Experience

The health-studies programme structures contain fewer clinical practicum hours than the nursing programmes (The Nursing Council of Hong Kong, 2013 January; Vocational Training Council, 2013). This study showed the difference of participants’ work experiences (Table 4). Apparently, the health-studies students had less health care-related work and that may have driving them to enhance their clinical exposure to do more health-related volunteer work. Nursing students had more clinical practicum and have lower participation in volunteer work. The results suggested that
health-studies students may have a higher drive to use volunteer work as a mean to enhance clinical exposure. In addition, health-studies students had lower household income than the university-based students, and that may drive them to pursue more work as indicated in the result. Whether it was related to financial needs, it needs further investigation.

5.3 Health-Studies Students’ Self-Evaluation of Academic Performance and the Goal of Choosing Nursing as a Career

Regarding the self-evaluation of academic performance (Table 5) and the goals of choosing nursing as a career (Table 6) of health-studies students, many wanted to join registered nursing programmes but thought they could not meet the entry requirements. They only thought they were capable of meeting the lower entry requirements of enrolled nursing programmes (The Nursing Council of Hong Kong, 2011 March; Vocational Training Council, 2012b). This indicates that there is a gap between expectations and abilities. Some even lost the confidence to enter the enrolled nursing programmes, or did not know whether they could fulfill the related requirements. These students might not be familiar with the entry requirements of nursing programmes, and thus capable students might be discouraged from entering nursing programmes and careers. Actually, many students cannot enroll the nursing programmes just by fulfilling the basic entry requirements (The Nursing Council of Hong Kong, 2011 March). As they did not know whether they could enter the nursing programmes, they could not confirm their career choices.
5.4 University-Based Students' Goal of Choosing Nursing as a Career

When university-based students replied similar question about programme choice (Table 6), the majority chose the general registered nursing programme as their favourite course. However, a few did not make this choice, despite the fact that they were currently studying in the programme. Some reported a preference for psychiatric registered nursing programmes, radiotherapy, and journalism. Obviously, this mismatching of programme choice is worth to have further investigation.

When asked about their intention to choose the nursing profession, it is alarming that only about half of the university-based students reported that they would definitely choose nursing as their career. The other half indicated that they would probably choose nursing as their future career, despite the fact that they were studying in the nursing programme. This might reflect a risk of wastage in the time of students, the nursing profession, and government resources. There is room to improve the determination of career goals amongst these students. It is necessary to promote the continuity of professional development amongst nursing students to reinforce the value of nursing and prevent wastage. As previous studies have suggested, nurse educators play important roles to achieve this mission. They are role models for nursing students, help influencing their professional behaviour and supporting their retention (Price, 2009b). Nurse educators can provide a positive, supportive, and encouraging clinical practice environment that promote the professional identification, role identity, and value of the nursing students. They help strengthening the clinical competence of nursing students so as to develop their commitment and ensure their retention (Lai et al., 2006; Price, 2009b; Wong & Lee, 2000).
5.5 The Three Most Positive Variables & the Three Most Negative Variables Influencing Perceptions of Nursing As a Career among Health-Studies Students & University-Based General Nursing Students

Some positive and negative variables influencing perceptions of nursing as a career were identified. These variables were similar in both health-studies students and university-based general nursing students groups, yet they may be different in the underlying reasons (Table 7a & 7b).

5.5.1 The Three Most Positive Variables Influencing Perceptions

For health-studies students, the health care-related work experiences, the reading about medicine or nursing and the personality were the first, second, third most positive influential variables. While for university-based general nursing students, the personality, the health care-related work experiences, the reading about medicine or nursing and their past academic performance were the first, second, third most positive influential variables.

Health Care-Related Work Experiences & The Reading About Medicine Or Nursing

Both groups of students form their own perceptions about nursing through their health care-related work experiences which were the first and the second most positively influential variables. O’Brien, Mooney, & Glacken (2008) also stated that the clinical placements provide impressions of nursing which help students to determine the career choice to nursing. Together with the reading about medicine or nursing (2nd & 3rd top ranking), it support previous finding about professional socialization and development as an important influence affecting the decision to become a nurse (Price, 2009b; Wong & Lee, 2000). It is also coherent with the Social Cognitive Career Theory (Lent et al., 1994), which claimed that the learning
experiences would influence the self-efficacy beliefs and outcome expectations, which would further influence one’s career choice goals (Lent et al., 1994; Lent & Hackett, 1994; Swanson & Fouad, 2010).

**Personality**

Nursing is a profession that typically involves human relations such as respect and love for others (Wilkes & Wallis, 1998; Wong & Lee, 2000). Students with personalities drawn towards helping people and saving lives would be positively influenced to join nursing. This is more typical for the university-based nursing students as ‘personality’ was being rated as the most positive influencing variable.

**Past Academic Performance**

Aptitude is a major consideration of people in choosing their career (Bandura, 1986). Students who have had greater achievements in science may perceive nursing as an easy course of study (Cho et al., 2010; Law & Arthur, 2003). As the university-based general nursing students had achieved academic performance to enter the nursing program, thus their past academic performance would be the positive influential variable of university-based general nursing students. Interesting, for those health-studies students, this variable becomes one of the most negative variables affecting their perception of nursing as a career.
5.5.2 The Three Most Negative Variables Influencing Perceptions

According to Table 7a & 7b, it showed that the overall 25 variables were positively influential. However, in regard to the percentage, there were still a few negatively influential variables could be classified. For health-studies students, the past and current academic performance, the health status, and the personality were the first, second, third most negative influential variables. While for university-based general nursing students, the health status, and the past and current academic performance were the first, second, third most negative influential variables.

The Past And Current Academic Performance

For the health-studies students, some of them may perceive their academic performance incapable of meeting the entry requirement of nursing programmes (Table 5), thus they may consider their past and current academic performance would be negatively influential variables that inhibit them to enter the nursing program (Table 6). While for the university-based general nursing students, this negative influential variable may echo with what Cho et al., (2010) and Neilson & Jones, (2011) had suggested that students with high academic achievement may choose nursing unwillingly because they cannot achieve the academic standards to enter their preferred career choice that other than nursing; and finally choose nursing reluctantly as their career similar to what another study suggested (Neilson & Lauder, 2008). Therefore, past and current academic performance would be the negative influential variables. This is consistent with Bandura’s social cognitive theory (Bandura, 1986) and the Social Cognitive Career Theory (Lent et al., 1994). Both claimed that people tend to choose careers that fit past achievements to ensure future success (Bandura, 1986; Lent et al., 1994; Price, 2009a).
**Health Status**

Nursing is physically challenging job (Buerhaus et al., 2005). Both health-studies students and the university-based general nursing students perceived that their health status would be a negatively influential variable. The result is also consistent with the result of Kovner, Brewer, Wu, Cheng, Suzuki, (2006) which suggested that nursing work is often physically and emotionally demanding, and registered nurses who have poor or fair health status may find nursing work burden, difficult and may be less satisfied. As the nursing students need to perform more clinical practicum than the health-studies students, they would encounter with more physically demanding nursing work than the health-studies students. Thus, the nursing students perceived that their health status would be more negatively influential variables when comparing with the health-studies students.

**Personality**

Although personality was being reported as a positive influencing variable in both groups, a minority of health-studies students thought that their personality would negatively influence perceptions of nursing as a career. Personality is composed of a variety of traits, or dispositions to behave in certain ways which relates to the types of careers people choose (Tokar, Fischer, & Subich, 1998). Thus, personality could influence the perception positively or negatively.
5.6 The Three Most Positive & the Three Most Negative Perceptions of Nursing as a Career among Health-Studies Students & University-Based General Nursing Students

The positive and negative perceptions of nursing as a career of both students groups were similar (Table 8a & 8b).

5.6.1 The Three Most Positive Perceptions Of Nursing As A Career

For both students groups, saving lives and helping people, the professionalism and importance of nursing, and unbiased gender roles of nursing were the first, second, third most positive perceptions of nursing as a career.

Saving Lives and Helping People

Nursing is a meaningful, humanitarian job and a common reason for choosing it as a career is to save lives and help people (Hemsley-Brown & Foskett, 1999; Larsen et al., 2003; Price, 2009b). This study finding is consistent with the literature. This motivation creates a sense of self-sacrifice and job satisfaction (Hemsley-Brown & Foskett, 1999). Thus, saving lives and helping people is the “intrinsic value” of nursing that acted as the main positive perception of nursing as a career.

The Professionalism and Importance of Nursing

The health-studies students perceived that the services provided by nurses are as important as those provided by physicians; while the university-based general nursing students perceived that nurses can have their own professional judgments. Both sentences ‘the services provided by nurses are as important as those provided by physicians’ and ‘nurses can have their own professional judgments’ indicated how the
students view nursing and suggested a belief in the professionalism and importance of nursing. It was this “extrinsic value” of nursing that contributed to the second most positive perception of nursing as a career. The feelings of being professional and respected are strongly influenced by the ‘others’ responses (MacIntosh, 2003; Price, 2009b). Today, most Hong Kong nurses have a Bachelor’s degree and some even have Master’s and doctoral degrees (Chan & Lai, 2010; Thompson, 2006). Nowadays nurse-led clinics are also becoming more common. Nurses can make their own judgments and give advices to patients independently and professionally (Chan & Lai, 2010). The nurses’ clinic increase the autonomy of nursing and nurses are no longer considered inferior to other professionals—academically or professionally (Chan & Lai, 2010).

Unbiased Gender Roles of Nursing

The health-studies students perceived that nursing is a job suitable for both men and women; while the university-based general nursing students perceived that nursing is not a feminine job. Both students groups had a perception of unbiased gender roles in the nursing field, which was the third most positive perception of nursing as a career. As health-studies and nursing students were interested in and had knowledge of their fields, they perceived no gender bias in a nursing career. Women are more likely to take on the role of caring for people (Hemsley-Brown & Foskett, 1999; Law & Arthur, 2003) while men in the nursing field are often considered a scarce resource with hidden advantages. Men have always overpresented in the high-tech specialties of nursing such as intensive care, perioperative, and emergency departments (Kleinman, 2004; Wang et al., 2011). However, this study did not
examine the general public’s interest in gender roles as they relate to a nursing career, and thus future studies on the general public are suggested.

5.6.2 The Three Most Negative Perceptions Of Nursing As A Career

The perceptions of nursing as a career of both students groups were similar. For health-studies students, the perceptions related to how costly the nursing programme might be, shift duty, and the dangers of possible contact with highly infectious patients were the first, second, third most negative perceptions of nursing as a career. While for university-based general nursing students, the perceptions related to shift duty were the first and third, while the dangers of possible contact with highly infectious patients as the second most negative perceptions of nursing as a career.

How Costly the Nursing Programme Might Be

Health-studies students perceived nursing as being costly to study. In Hong Kong, most of the Bachelor’s degree programmes have government funding to support. Many health-studies students come from relatively low-income families (Table 2) and they could not achieve good academic standard to compete for government-funded nursing programmes, thus they have to consider expansive, self-financed nursing programmes without government support (Tung Wah College, 2012; University Grants Committee of the Hong Kong Special Administrative Region, 2012). It is understandable that health-studies students perceive nursing as being costly to study as more negatively but not for the university group.
**Shift Duty**

Nursing is a job to save life and help people. Shift duty nursing work is inevitable in nursing. Both students group perceived shift duty as negative perception of nursing as a career and nursing students perceived negative to two items related to shift work. Most people are concerned about their social lives and health status, and thus would rarely choose an occupation with shift work (Hemsley-Brown & Foskett, 1999; Stevens & Walker, 1993). As the nursing students had more clinical practicum than the health-studies students, they would do with more shift work than the health-studies students. It can reflected by two sentences describing shift duty got low mean score which indicating poor perceptions. These meant that the nursing students strongly thought that shift duty affects normal social life, and did not think that shift duty can provide more leisure time during weekdays. Thus the university-based nursing students would perceive shift duty more negatively than the health-studies students.

**The Dangers of Possible Contact with Highly Infectious Patients**

Nursing is a job to care of patients including those infectious patients. Possible contact with infectious patients is inevitable in nursing. Regarding possible contact with infectious patients, it is possible for an infectious disease to be transmitted to healthcare personnel and kill them, so students’ worries are reasonable. Severe Acute Respiratory Syndrome (SARS) inflected about 8,459 patients resulting in over 800 deaths worldwide (World Health Organization, 2013). About 5,326 patients with SARS resulted in 347 reported deaths in China (up to June 2003), and 1,755 individuals infected and 299 dead including 8 healthcare personnel in Hong Kong (Hong Kong Special Administrative Region Government, 2003; World Health
Organization, 2013). The SARS outbreak in Taiwan also created a high level of fear and anxiety in the public and amongst healthcare workers (Chen, Lin, & Ho, 2006). Many healthcare personnel refused to take care of SARS patients, ran out of hospitals, and quit their jobs temporarily (Chen et al., 2006). Thus, these recent and local experiences of possible contact with highly infectious patients became the negative perception of nursing as a career.
5.7 Group Differences in the Variables Influencing Perceptions of Nursing as a Career (Part 4 of the NCP) between University-Based General Nursing Students and Health-Studies Students

In this study, there is no significant difference in the overall mean score of Variables Influencing Perceptions of Nursing as a Career Scale (Part 4 of the NCP) between university-based general nursing students and health-studies students (Table 9). It could be due to similarity of these two groups in terms of their career choice. Many health-studies students surveyed in this study having expressed their desire to further study in the nursing education (Table 6). They were potential nursing students. They desire to articulate the professional nursing programs and work in the nursing profession worldwide such as United Kingdom, U.S.A and Hong Kong. There are many similar students who try to enter nursing through similar programmes (City of London College, 2013; Delaware County Community College, 2013; Education-Portal, 2013; HKU SPACE Community College, 2012; Hong Kong Community College, 2009; Vocational Training Council, 2012a). Thus, the variables influencing health-studies students' perceptions of nursing as a career showed no significant differences with those of the nursing students.

But when analyzing individual variables in VIPNC scale, there were significant group differences in several variables. The university-based general nursing students had better academic achievements than those health-studies students, thus the nursing students would perceive more positively influence in the past and current academic performance than the health-studies students (Table 9).
As the health-studies students did not know whether they could enter the nursing programmes, they might have difficulties to confirm their career choices (Table 6). They would receive advices from different people such as teachers, career advisors, physicians (Table 9), nurses, relatives, friends, and guidance professionals, who may shape the decision to choose nursing was reported in many other countries (Buerhaus et al., 2005; Law & Arthur, 2003; Neilson & Jones, 2011; Price 2009b; Turner, 2011). While those university-based general nursing students had entered the nursing programmes, they did not need to struggle into the nursing programmes. Besides, nursing programmes are the career-based programmes, the nursing students with more clinical practicum make them more familiarize with the nursing job. As the university-based general nursing students would mostly know their preferences in nursing, they would perceive less influence from others.

Similarly, the nursing students with more clinical practicum make them more familiarize with the nursing job. They would know their preference in nursing (Table 6), they would perceive less influence from other work experiences or health services experiences. While those health-studies students had less health care-related work experiences, they would only clarify about nursing from experiences with outpatient health services and volunteer work experiences. They may compare nursing with their non-health care-related work experiences. Thus, the health-studies students reported more influence in experiences with outpatient health services, volunteer work experiences and non-health care-related work experiences.
5.8 Group Differences in the Perceptions of Nursing as a Career (Part 5 of the NCPQ) between University-Based General Nursing Students and Health-Studies Students

In this study, the university-based students had statistically more positive perceptions of nursing as a career than the health-studies students (Table 10).

The perception of nursing as a career has a positive correlation with students’ health care-related work experiences (Table 11). Nursing students have more health care-related work and better appreciation of nursing profession. Their perceptions are more positive in areas such as ‘nursing can save lives’, ‘nursing can secure family income’, ‘nursing income is attractive’, ‘nursing requires expert skills’, ‘nurses can have their own professional judgments’, ‘nurses incorporating research findings into clinical practice would improve patient care standards’; but more negative perceptions in negative aspects of nursing such as shift duty. This is coherent with previous study by Lai et al. (2006) that student with greater clinical ability tended to have a stronger intention to be a nurse.

On the other hand, many health-studies students surveyed in this study have expressed their desire to further study in the nursing education (Table 6). However, there is gap between their expectations and abilities (Table 5 & 6). Because they did not know whether they could enter the nursing programmes, they could not confirm their career choices. It was evidenced by the result showing that fewer health-studies students would definitely choose nursing as their career (Table 6). They were still considering and struggling to enter the nursing programs. The potential to become a
nursing student is largely limited by their academic performance and other uncertainties.
5.9 Influencing Variables that Affect Perception for Nursing as a Career

Variables influencing perception of nursing as a career scale (VIPNC scale) has a weak positive correlation with the PNC scale. When asked about self-perceived influencing variables that affect students’ perception of nursing as a career, “personality” and “health care related work experiences” were found to have most significant impacts. Personality is composed of a variety of traits, or dispositions to behave in certain ways which relates to the types of careers people choose (Tokar et al., 1998). Nursing is a profession that typically involves human relations such as respect and love for others (Wilkes & Wallis, 1998; Wong & Lee, 2000). Students with personalities drawn towards helping people and saving lives involving human relations would influence the perceptions of nursing as a career.

Students observe and learn the nursing skills, attitudes and behaviours through clinical practicum which is a process of professional socialization (Dinmohammadi, Peyrovi, & Mehrdad, 2013). Then, students interact with what they learnt, and undergo the development of professional behavior and career commitment through their learning (Dinmohammadi et al., 2013). Lastly, students adapt the transition from the theoretical orientation of education to the practical focus of professional work (Dinmohammadi et al., 2013). This is consistent with previous studies in which students with greater clinical ability confirmed the value of nurses and exhibited more motivation to stay in the profession (Lai et al., 2006; Larsen et al., 2003; Wong & Lee, 2000). It is also consistent with the Social Cognitive Career Theory (Lent et al., 1994), which claimed that the learning experiences would influence the self-efficacy beliefs and outcome expectations, which would further influence one’s choice goals for a career (Lent et al., 1994; Lent & Hackett, 1994; Swanson & Fouad, 2010). Thus, the
results showed positive correlation between the perception of nursing as a career and the students’ health care-related work experiences. Consequently, university-based students had more clinical practicum; they had more positive perceptions than health-studies students. This also supports why students with more positive perceptions of nursing as a career tend to choose nursing as a career.

5.9.1 Variables Associated With Perceptions of Nursing as Career

A number of variables were significantly related to the perception of nursing as a career (Part 5 of the NCPQ). Among health-studies students, they are volunteer work experiences, students’ reading about medicine or nursing, students’ experiences of caring for a sick family member or friend, students’ experiences visiting patients, students’ perceived image of nurses through the media, and students’ contact with nurses. All experiences and contact with professional provide direct interaction in the nursing field, providing a more realistic, deeper level of understanding regarding the demands of nursing that influences the decision to become a nurse (Price, 2009a; Price, 2009b).

For university-based general nursing students, students’ health status and students’ mother were associated with perception of nursing as a career. Nursing work is hard working which requires good health status to cope with (Kovner et al., 2006). Law & Arthur (2003) also reported that students’ career choice to nursing was influenced by mother’s occupation.
5.10 Factor Structure of Variables Influencing Perceptions of Nursing as a Career Scale (VIPNC Scale)

The four factors of VIPNC scale identified from the exploratory factor analysis were experience, contact with professional, personal and significant other. Some of the items had cross loading, meaning that they were also an integral part of two or more factors.

5.10.1 Factor 1 – “Experience” Factor

Factor 1 ‘Experience’ factor consists of 9 items explaining personal experiences visiting patients, own hospitalization, health care-related work experiences, media and reading about medicine or nursing. The ‘experience’ factor indicated direct interaction in the nursing field, can provide a more realistic, deeper level of understanding regarding the demands of nursing that influences the decision to become a nurse (Price, 2009a; Price, 2009b). Students observe and learn the nursing skills, attitudes and behaviours through clinical practicum, experiences of caring for a sick family member or friend, their reading about medicine or nursing, and their observation during visiting patients, using outpatient health services, performing volunteer work or hospitalization etc. Students observe and learn those nursing skills, attitudes and behaviours as fundamental process of professional socialization (Dinmohammadi et al., 2013). Then, students interact with what they learnt internalizing a sense of professional identity, which is the interactive process of professional socialization (Dinmohammadi et al., 2013). Afterwards, students undergo the development of professional behavior and career commitment through their learning; it is not only cognitive and psychomotor learning, but also affective skill learning, in which this is
the development process of professional socialization (Dinmohammadi et al., 2013). Lastly, students learnt all the skills in schools and try to apply in the clinical setting, they may profound stress and problems; while the newly graduated nurses adapt their new roles and responsibilities, adapt the transition from the theoretical orientation of education to the practical focus of professional work, this process is the adaption process of professional socialization (Dinmohammadi et al., 2013). Students form their own perceptions about nursing through these interactions with care delivery and social experience. Students would also evaluate and change the way to view themselves, their role and the perceptions of nursing in regard to their experiences during the programmes, such as the past experience, the type and form of education provided, the opportunity to reflect on their practice, and the beliefs and values promoted during the course (Dinmohammadi et al., 2013)

Nowadays, many people perceive nursing is a good career with job security and prospects of raising earnings when compared with non-health care-related work (Buerhaus et al., 2005). Even those with experience related to non-health care-related work and non-nursing bachelor degree would consider joining the nursing profession. It is evidenced by the existing pre-registration master nursing programme aiming to allow graduate with non-nursing degrees to prepare for profession registration and earn a higher degree in nursing (The Hong Kong Polytechnic University, 2013).

Experience gained through the mass media portraying the image of nurses would influence people’s decision to become a nurse (Larsen et al., 2003). The mass media provides information about nursing, with television dramas promoting a positive image (Kohler & Edwards, 1990). However, the media also apparent the portrayal of
nurses as doctor’s subordinate (Takase et al., 2006), and the news often reporting medical error overwhelming the image of nurse which appear to negatively influence perceptions of nursing (Kohler & Edwards, 1990). The public hold the fuzzy image of nurses from the media (Takase et al., 2006). Thus, the perceived image of nurses through the media would influence the perception of nursing as a career.

5.10.2 Factor 2 – “Contact with Professional” Factor

Factor 2 ‘Contact with Professional’ factor comprises of 7 items. It describes contact with health professionals, career advisors, teachers, relatives, or friends who were health personnel. The students’ experiences of contacting professional also shape students’ mind in nursing field (Buerhaus et al., 2005; Lai et al., 2006; Law & Arthur, 2003; Neilson & Jones, 2011; Price 2009b; Turner, 2011). Direct interactions with nurses also provide a more realistic and deeper level of understanding regarding the demands of nursing, which influence career choice (Law & Arthur, 2003; Lai et al., 2006; Price, 2009b). The positive role model of nurses also has positive influence in the students’ enthusiastic about their career choice to be nurses (Larsen et al. 2003). Teachers in the nursing schools and vocational institutes are mostly nurses and other health professionals who acted as role models of students influencing their career choice. Students would contact the nurses and physicians in the practicum, therefore the item ‘your health care-related work experiences (including practicum)’ from the original ‘experience’ factor also sit within the ‘contact with professional’ factor. Also, the results in this study showed that many of the surveyed students know people who have worked as a nurse or in other health-related careers, therefore the item ‘your close friends’ also include in this ‘contact with professional’ factor. Varaei, Vaismoradi, Jasper, & Faghihzadeh (2012) suggested that less nurses recommend
nursing to others while Milisen, De Busser, Kayaert, Abraham & de Casterle (2010) suggested that many nursing students would recommend family or friends to study nursing. A positive image of nursing has positive influence in the career choice to nursing (Takase et al., 2006). Therefore, the contact with professional can influence the perception of nursing as a career.

5.10.3 Factor 3 – “Personal” Factor

Factor 3 ‘Personal’ factor referred to items influencing the individuals personally such as gender, current and past academic performance, race, personality, and health status. It had one item, ‘your volunteer work experiences’ from the original ‘experience’ factor sitting within the ‘personal’ factor.

Students would self-evaluate their personal variables such as gender role, academic performance, race, personality, and health status to decide whether the nursing career suit themselves or not. Personality is composed of a variety of traits, or dispositions to behave in certain ways which relates to the types of careers people choose (Tokar et al., 1998). People with the personality of helping people usually like to perform volunteer work, therefore the item ‘your volunteer work experiences’ from the original ‘experience’ factor also sit within the ‘personal’ factor. Thus, the personality can influence the perception of nursing as a career.

Bandura, Barbaranelli, Caprara, & Pastorelli, (2001) stated that social cognitive theory can explain the career choice and development. The individual weighs various satisfactions and dissatisfactions, and then makes concessions between the wants and the opportunities (Ginzberg, Ginsburg, Axelrad, & Herma, 1951). This supports that
“current and past academic performance” in the personal factor is valid as a component for self-evaluation in career choice. The perceived academic, social, and self-regulatory efficacy influence the occupational choices (Bandura et al., 2001). The perceived self-efficacy influence the aspirations and strength of commitments, the perseverance in the face of difficulties and setbacks (Bandura et al., 2001). Bandura and associates (2001) claimed that people who have perceived higher efficacy to fulfill educational requirements and occupational roles would have wider career options to choose, and prepare themselves better in academically and have greater staying power to pursue challenging career. Therefore, the past and current academic performance would influence the perception of nursing as a career.

Besides, gender and race shape some social conceptions and customs and guide thoughts about nursing as a career. For example, nursing is known as a female-dominated profession (Foong et al., 1999; Grossman & Northrop, 1993; Hemsley-Brown & Foskett, 1999; Law & Arthur, 2003). The impression of caring is a typically feminine personality characteristic (Hemsley-Brown & Foskett, 1999; Nicolson, 1996; Philpot, 2000).

Nursing work is often physically demanding that require nurse with satisfactory health status to cope with (Kovner et al., 2006). Registered nurses who have poor or fair health status may find nursing work burden, difficult and may be less satisfied (Kovner et al., 2006).

5.10.4 Factor 4 – “Significant Other” Factor
Factor 4 ‘Significant Other’ factor referred to the significant others influencing the individuals such as mother, father, and close relatives. It is well documented from the literature that significant other includes mother, father, close relatives, acts as a source of comments and advice on the nursing field that affect decisions regarding nursing as a career (Campbell-Heider, Sackett, Rny, & Whistler, 2008; Grossman & Northrop, 1993; Law & Arthur, 2003; Neilson & Jones, 2011). A study by Davies and Kandel (1981) found that parents have stronger influence than best friends in the decisions on the educational goals of the subjects. Palmer & Cochran (1988) also reported that parents have significant influence on adolescent’s career plans. ‘Significant Other’ as a factor is well supported from previous studies.
5.11 Factor Structure of Perceptions of Nursing as a Career Scale (PNC Scale)

Exploratory factor analysis has identified five factors. These five factors describe professional, social, economic, occupational and educational aspect of the nursing field. Some of the items had cross loading, meaning that they were also an integral part of two or more factors.

5.11.1 Factor 1 – “Professional” Factor

Factor 1 ‘Professional’ factor represented the perception of professionalism and the importance of nursing. It had 8 items including 6 positive phased items and 2 negative phased items. The need of negatively phrased items is to test the consistency of participants. Both positive and negative sentiments were expressed to minimise the possibility of set responses. There are two negative phased sentences, ‘nurses can only follow orders from physicians without queries’ and ‘nursing is a feminine job which is only suitable for women’ from the original ‘social’ factor sitting within the ‘professional’ factor. There are also two positive bearing sentences ‘nursing is a respectable profession’ and ‘nursing requires expert skills’ from the original ‘educational’ factor sitting within the ‘professional’ factor.

The perceptions of being professional and respected are strongly influenced by his or her own self competence (Milisen et al. 2010) and the others’ response (MacIntosh, 2003; Price, 2009b). The social and humanistic dimensions of nursing career in helping others provide positive perceptions of nursing (Varaei et al., 2012). Also, the skills, knowledge and academic attainments provide the positive and professional image towards nursing profession (Varaei et al. 2012). It explained that
why the sentence ‘nursing requires expert skills’ from the original ‘educational’ factor sitting within the ‘professional’ factor.

5.11.2 Factor 2 – “Social” Factor

Factor 2 ‘Social’ factor indicated the social aspect of nursing. It referred to how people view nursing. There is a positive phased sentence ‘the services provided by nurses are as important as those provided by physicians’ from the original ‘professional’ factor sitting within the ‘social’ factor. There are also two negative phased sentences ‘nursing has a low salary’ and ‘nursing is a low prestige occupation’ from the original ‘economic’ factor sitting within the ‘social’ factor.

Nursing is traditionally known as a female occupation (Hemsley-Brown & Foskett, 1999). The stereotypical image of the nursing in the public is a subordinate of physicians (Brodie et al., 2004; Seago, Spetz, Alvarado, Keane, & Grumbach, 2006). This traditional hierarchical structure between doctors and nurses in the clinical field has been established by the public (Roberts & Vasquez, 2004). Nursing is always unvalued by the public (Brodie et al., 2004). The ideas of low academic standards and poor salary of nurses are stereotyped in the public. Varaei et al. (2012) also stated that the society did not respect nursing. All these low social values about nursing would poorly affect the perception of nursing as a career.

The sentence ‘everyone would benefit if nurses spent less time in research and more time caring for patients’ loaded on the ‘social’ factor with absolute factor loading below 0.3. The meaning of this sentence may be ambiguous and arbitrary in
nature so that it cannot identify the positive or negative views of the participants. Rewording of the sentence should be considered for future testing.

5.11.3 Factor 3 – “Economic” Factor

Factor 3 ‘Economic’ factor represented the financial aspect of nursing. It had 5 items including 2 positive phased items and 3 negative phased items. There is a negative phased sentence ‘nursing provides less opportunity to raise social status’ from the original ‘social’ factor sitting within the ‘economic’ factor.

Socioeconomic status associated with salary may promote or inhibit particular career ambitions amongst individuals (Lent & Hackett, 1994). Some students heard about the nurses strike for higher salary and concluded that nurses must be under-paid (Hemsley-Brown & Foskett, 1999). In response to the recent downturn in the national economy, a nurse shortage associated with higher salaries and more secure jobs has attracted many people (Buerhaus et al., 2005; Cho et al., 2010). Brodie et al., (2004) suggested that the perceptions of nursing are valued by the pay of nurses compared with the other careers.

5.11.4 Factor 4 – “Occupational” Factor

Factor 4 ‘Occupational’ factor stated the occupational aspect of nursing. It had 4 items including 1 positive phased item and 3 negative phased items. There are two negative phased sentences ‘nursing is an unacceptable job that requires the handling of dead bodies’ and ‘nursing is a disgusting job in which unpleasant, low-skilled ‘dirty/messy’ work is performed’ from the original ‘professional’ factor sitting within
the ‘occupational’ factor. There is a positive phased sentence ‘nursing requires expert skills’ from the original ‘educational’ factor sitting within the ‘occupational’ factor.

Nursing duty is required to provide 24-hour services to the patients, shift work is unavoidable. However, nurses working on rotating shifts work would increase the job stress, physical and emotional health problems and lowers the working attitudes and satisfaction (Baba & Jamal, 1991; Jamal & Baba, 1992). The International Agency for Research on Cancer (2007) stated that shift work has disrupted the circadian rhythm suppressing melatonin production, disregulating genes involved in tumour development, and resulting to probably carcinogenic to humans (Group 2A). In the study of Schernhammer et al. (2003) also showed that rotating night shifts work was associated with the increased risk of colorectal cancer. Besides, shift work with night duty induces out of phase with society and difficulties in the social lives because most family and social activities are on day-oriented rhythms of general public (Costa, 2003).

Besides, nursing job has duty to take care of infectious patients. It is possible for an infectious disease, such as Severe Acute Respiratory Syndrome (SARS) to be transmitted to healthcare personnel and kill them (Hong Kong Special Administrative Region Government, 2003; World Health Organization, 2013). Both shift work with disturbance of life style and circadian rhythms (McGrath, Reid, & Boore, 2003) and possible contact with infectious disease would increase the occupational stress of nursing task leading to burnout the nurse and lower the perception of nursing as a career.
5.11.5 Factor 5 – “Educational” Factor

Factor 5 ‘Educational’ factor identified the educational aspect of nursing. It had 5 positive phased items.

Today health care faces lots of challenges, such as, rising health care costs (Food and Health Bureau, Hong Kong Special Administrative Region Government, [FHB, HKSAR] March 2008), shortages of professionals (Canadian Nurses Association [CNA], 2008), an aging population (Australian Bureau of Statistics, 2010; CNA, 2008; Hong Kong Census and Statistics Department, 2008; Hong Kong Mandatory Provident Fund Schemes Authority, 2013), introduction of new technology and difficulties with access to care (CNA, 2008), the increasing expectation on health care provision (FHB, HKSAR, March 2008). Similar challenges force many countries to reform their health care systems (Wong, 1998). Education can be one of the solutions. As nursing is the largest portion of the health care workforce, it is necessary to experience proletarianization and professionalization to have cost control (Wong, 1998). For proletarianization, it is to reallocate the low skilled work to health care assistants. For professionalization, it is to upgrade the nursing education, and nursing autonomy, and increase nursing status.

In this study, some of the health-studies students perceived difficulty in meeting the requirements of registered nursing programmes. They have no confident to enter the nursing programmes. They would consider self-financed nursing education instead of the government funded programmes (Tung Wah College, 2012; University Grants Committee of the Hong Kong Special Administrative Region, 2012). Thus, studying in a nursing programme is costly.
Chapter 6: Implications, Recommendations and Limitations

This chapter includes the implications and recommendations suggested by this study and the limitations of it.

6.1 Implications/Recommendations

Successes and failures are influential to the people viewing the ability of themselves (Bandura, 1997). Therefore, it is suggested that the vocational institute should provide a supportive and challenging learning environment that enhances the self-efficacy and abilities of health-studies students. The university-based nursing school should consider the preferences amongst its applicants and cogitate using an admissions interview or questionnaire to select suitable candidates as a way of reducing the chance of the mismatches between students and study programmes that lead to attrition.

Nurse educators are important role models for nursing students, influencing their career decisions (Price, 2009b; Wong & Lee, 2000). Nurse educators have a responsibility to strengthen the clinical competencies of nursing students (Lai et al., 2006). The results show a statistically moderate positive correlation between perceptions of nursing as a career and health care-related work experiences. It is suggested that nurse educators make an effort to provide a positive, supportive, conductive, and encouraging clinical practice environment with good interpersonal relationships that promotes the professional identification, role identity, and value of nursing to the nursing students so as to develop their commitment to the nursing profession and ensure retention (Wong & Lee, 2000).
The intrinsic value of nursing, reflected in saving lives and helping people, and its extrinsic value, reflected in the importance of its services, make nursing an attractive choice. Career counselling can be used to promote the intrinsic and extrinsic value of nursing, providing information about admissions requirements, employment prospects, and earning potential to health-studies students in an effort to clarify common misconceptions.

As shift duty and possible contact with infectious patients are inevitable in nursing, career counselling can also be used to emphasise the reality of nursing dangers, clarify misconceptions, and discuss solutions to minimise the negative perceptions related to shift work, infectious disease, and costly programmes. Moreover, nursing administrators should make efforts to enhance good and harmonious working environments and promote social activities such as recreation clubs for shift working staff to reduce the negative perception of shift working. Facing infectious disease is expected, and nursing administrators should provide adequate protective measures to ensure safe working environments (Stone, Clarke, Cimiotti, & Correa-de-Araujo, 2004).

Regarding the expansive tuition fees for nursing programmes, some part-time health care jobs can be introduced to the nursing students, such as Temporary Undergraduate Nursing Students (TUNS) and Employed Student Nurses (British Columbia Nurses’ Union, 2011; Hong Kong Legislative Council, 2010). Such a measure may be helpful to relieve the financial burden shouldered by many nursing students.
6.2 Limitations

This study has a few limitations, which should be acknowledged. It was conducted with a convenience sample and the major limitation of convenience sampling is the potential bias of self-selection (Portney & Watkins, 1993). Because the sample was limited to health-studies students in the vocational institute and university-based nursing students, the findings may not be generalisable to the greater population of nursing students. Future studies with a larger and more diverse sample are suggested. As this study used a cross-sectional design, the potential change in perception of nursing as a career cannot be marked. Therefore, a longitudinal study is suggested to explore a longer-term trend of students’ perceptions of nursing as a career.
Chapter 7: Conclusion

This study showed that health-studies students are trying hard to enter nursing programmes, but their relatively low self-efficacy and abilities are affecting their goals of entering a programme and ultimately choosing nursing as a career. Enhancing the self-efficacy and abilities of health-studies students will be vital. This study also indicated a mismatch between nursing students and their programme choices that should be further investigated. Applicants’ preferences and admission interviews or questionnaires should be considered to select suitable candidates during recruitment procedures to reduce the chance of mismatched study programmes leading to attrition.

The results revealed a statistically positive correlation between the perception of nursing as a career and the health care-related work experiences. University-based students had more positive perceptions than health-studies students, but it is alarming that less than half of the university-based general nursing students reported that they would definitely choose general nursing as their career while the other half reported that they would probably choose general nursing, despite being enrolled in the programme. Promoting professional identification, role identity, and the value of nursing amongst the nursing students to develop their commitment and support retention will be crucial.

This study also revealed the intrinsic (saving lives and helping people) and extrinsic (the importance of nursing services) values of the nursing profession. Career counselling can be used to promote both values by providing health-studies students with information about admissions requirements, employment prospects, and earnings potential to clarify misconceptions and boost recruitment. Career counselling can also
be used to emphasise the reality of nursing work, debunk misconceptions, and discuss solutions to minimise the negative perceptions related to shift work, infectious disease, and costly programmes.

The psychometric properties of the newly developed scales, Variables Influencing Perceptions of Nursing as a Career Scale (VIPNC scale) and Perceptions of Nursing as a Career Scale (PNC scale), demonstrate that they are potentially valuable tools for assessing perception of nursing as a career and investigation of its influencing variables.

In conclusion, both the health-studies and nursing students recruited for this study will have the potential to join the nursing profession. Their responses provide a general picture of the positive and negative perceptions of nursing as a career and its factors that nurse educators and administrators may find useful in planning career counselling and admissions procedures.
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Appendix 1a: "Nursing Career Perception Questionnaire (NCPQ)" “對護理作為職業的看法的問卷” (Chinese version)

“對護理作為職業的看法的問卷”

請以✓號選擇您覺得最適當的選項。請回答所有的問題。

第一部份：個人資料

1. 性別
   □ (1)男 □ (2)女

2. 年齡: ___________________歲

3. 所屬課程
   □ (1)健康有關的高級文憑
   □ (2)在醫院護士學校修讀的護理學高級文憑<註冊護士(普通科)>
   □ (3)在大學修讀的 (UGC funded) 護理學高級文憑<註冊護士(普通科)>
   □ (4)在大學修讀的(UGC funded) 護理學(榮譽)理學士<註冊護士(普通科)>

4. 就讀年級
   □ (1)一年級 □ (2)二年級
   □ (3)二年級 □ (4)四年級
5. 每月平均家庭收入（港元）

□ (1) $4999
□ (2) $5000 - 7999
□ (3) $8000 - 9999
□ (4) $10000 - 14999
□ (5) $15000 - 19999
□ (6) $20000 - 24999
□ (7) $25000 - 29999
□ (8) $30000 - 39999
□ (9) $40000 - 59999
□ (10) $60000

6. 你有沒有任何家庭成員/親戚/朋友是或曾是一個護士（註冊護士/登記護士）嗎？

□ (1) 有 □ (2) 沒有

7. 你有沒有任何家庭成員/親戚/朋友是或曾是從事護士以外的健康相關的工作？

□ (1) 有 □ (2) 沒有

8. 每週平均志願工作時數

□ (1) 完全沒有經驗 □ (2) < 3 小時 □ (3) 3 - 6 小時
□ (4) 7 - 9 小時 □ (5) 10 - 12 小時 □ (6) > 12 小時

9. 健康護理相關的工作經驗（包括實習）的總數

□ (1) 完全沒有經驗 □ (2) < 3 個月 □ (3) 3 - 6 個月
□ (4) 7 - 9 個月 □ (5) 10 個月 – 1年 □ (6) > 1年

10. 非健康護理相關工作經驗（包括實習）的總數

□ (1) 完全沒有經驗 □ (2) < 3 個月 □ (3) 3 - 6 個月
□ (4) 7 - 9 個月 □ (5) 10 個月 – 1年 □ (6) > 1年

(請回答第二部分)
第二部份（此部份只供修讀健康有關的高級文憑的同學回答）

1. 你的學業成績能夠達到入讀“註冊護士”護理課程的要求嗎？

<table>
<thead>
<tr>
<th>(1)絕對不能夠</th>
<th>(2)大概不能夠</th>
<th>(3)不知道</th>
<th>(4)大概能夠</th>
<th>(5)絕對能夠</th>
</tr>
</thead>
</table>

2. 你的學業成績能夠達到入讀“登記護士”護理課程的要求嗎？

<table>
<thead>
<tr>
<th>(1)絕對不能够</th>
<th>(2)大概不能够</th>
<th>(3)不知道</th>
<th>(4)大概能够</th>
<th>(5)绝对能够</th>
</tr>
</thead>
</table>

（請回答第三部份）

第三部份

1. 你最心儀的學科是：

   □ (1)“註冊護士(普通科)”護理課程
   □ (2)“註冊護士(精神科)”護理課程
   □ (3)“登記護士(普通科)”護理課程
   □ (4)“登記護士(精神科)”護理課程
   □ (5)其他，請註明：______________________________

2. 在未來5年內，你會否選擇護理作為你的職業？

<table>
<thead>
<tr>
<th>(1)絕對不會</th>
<th>(2)大概不會</th>
<th>(3)未有打算是</th>
<th>(4)大概會</th>
<th>(5)絕對會</th>
</tr>
</thead>
</table>

（請回答第四部份）
第四部份

以下因素如何影響你選擇護理作為職業呢？
請以✓號選擇最合您心意的答案。

<table>
<thead>
<tr>
<th></th>
<th>非常負面的影響</th>
<th>負面的影響</th>
<th>完全沒有影響</th>
<th>正面的影響</th>
<th>非常正面的影響</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>你的性別</td>
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<td>2.</td>
<td>你的種族</td>
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<td>3.</td>
<td>你的性格</td>
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<td>4.</td>
<td>你的健康狀況</td>
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<tr>
<td>5.</td>
<td>你以往的學業成績</td>
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<tr>
<td>6.</td>
<td>你現在的學業成績</td>
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<td>7.</td>
<td>你的父親</td>
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<td>8.</td>
<td>你的母親</td>
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<td>9.</td>
<td>你的親戚</td>
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<td>10.</td>
<td>你的好友</td>
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<td>11.</td>
<td>你的老師</td>
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<tr>
<td>12.</td>
<td>你的職業附導主任</td>
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<tr>
<td>13.</td>
<td>你所接觸的護士</td>
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<td>14.</td>
<td>你所接觸的醫生</td>
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<tr>
<td>15.</td>
<td>你的家庭成員/親戚/朋友是或曾是一個護士（註冊護士/登記護士）</td>
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<tr>
<td>16.</td>
<td>你的家庭成員/親戚/朋友是或曾是從事護士以外的健康相關的工作</td>
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<td>17.</td>
<td>你所閱讀關於醫學或護理的書籍</td>
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<td>18.</td>
<td>你透過傳播媒體所認識到的護士形像</td>
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<td>19.</td>
<td>你住院的經驗</td>
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<td>20.</td>
<td>你使用門診健康服務的經驗</td>
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<tr>
<td>21.</td>
<td>你探望病人的經驗</td>
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<td>22.</td>
<td>你照顧生病的家人或朋友的經驗</td>
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<td>23.</td>
<td>你的志願工作經驗</td>
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<td>24.</td>
<td>你的健康護理相關的工作經驗（包括實習）</td>
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<td>25.</td>
<td>你的非健康護理相關的工作經驗（包括實習）</td>
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</table>

（請回答第五部份）
請以 ✓ 號選擇最合您心意的答。

<table>
<thead>
<tr>
<th>序號</th>
<th>話題</th>
<th>非常不同意</th>
<th>不同意</th>
<th>中立</th>
<th>同意</th>
<th>非常同意</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>護理是一種女性的工作，只適合女人。</td>
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<td>2.</td>
<td>護理工作只是適合那些想要有穩定職業的人。</td>
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<td>3.</td>
<td>如果護士花少些時間在研究和花多些時間在照顧病人上，每個人都將會受益。</td>
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<td>4.</td>
<td>護理可以拯救生命，是一份有意義的工作。</td>
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<td>5.</td>
<td>修讀護理課程的人都因為學術水平未能達到其他首選學科的要求。</td>
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<td>6.</td>
<td>護理工作能夠保障家庭收入。</td>
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<td>7.</td>
<td>護理工作需要經常接觸高度傳染的病人，是一份危險的工作。</td>
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<td>8.</td>
<td>護理工作是需要做很多專門技能的工作。</td>
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<td>9.</td>
<td>修讀護理課程的費用是昂貴的。</td>
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<td>10.</td>
<td>護士都是受過良好教育的。</td>
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<td>11.</td>
<td>護理工作需要處理病人遺體，是一份難以接受的工作。</td>
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<td>12.</td>
<td>修讀護理課程很困難。</td>
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<tr>
<td>13.</td>
<td>護士的收入具吸引力。</td>
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<tr>
<td>14.</td>
<td>護士的角色不及醫生的角色重要。</td>
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<td>15.</td>
<td>護理工作較難提升社會階層。</td>
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<tr>
<td>16.</td>
<td>護理工作是一種受人尊敬的專業工作。</td>
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<td>17.</td>
<td>護理工作不能提供財政上的安全感。</td>
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<td>18.</td>
<td>輪班的護理工作(包括晚間及公眾假期)提供較多平日的休閒時間。</td>
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<td>19.</td>
<td>護理是一個適合男人和女人的工作。</td>
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<td>20.</td>
<td>護士只不過是醫生的附屬。</td>
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<tr>
<td>21.</td>
<td>護理需要執行低技能‘骯髒/污穢’的工作，是一份令人厭惡的職業。</td>
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<td>22.</td>
<td>入讀護理課程的人都是學術水平較好的。</td>
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<td>23.</td>
<td>護士只可以毫無疑問地遵循醫生的指令工作。</td>
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<td>24.</td>
<td>護士在發展衛生保健政策中頗具影響力。</td>
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<tr>
<td>25.</td>
<td>護理工作的薪酬低。</td>
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<td>26.</td>
<td>護理是一份低聲望的工作。</td>
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<td>27.</td>
<td>護士可以有自己的專業判斷。</td>
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<tr>
<td>28.</td>
<td>護士將研究結果納入臨床實習中，會提升病人護理的水平。</td>
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<tr>
<td>29.</td>
<td>輪班的護理工作(包括晚間及公眾假期)會影響正常的社交生活。</td>
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<tr>
<td>30.</td>
<td>護士的工作與醫生的工作是同等重要的。</td>
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</tbody>
</table>

問卷完，謝謝你的寶貴意見。
Appendix 1b: "Nursing Career Perception Questionnaire (NCPQ)" “對護理作為業的看法的問卷”(English version)

“Nursing Career Perception Questionnaire (NCPQ)"

Please tick ✓ the appropriate response unless otherwise asked.

Part 1: Socio-demographic Data

1. Gender

☐ (1) Male ☐ (2) Female

2. Age: _______________ years old

3. Course undertaken

☐ (1) Higher Diploma in Health Studies Division ☐ (2) Hospital-Based School of General Nursing, Higher Diploma in Nursing <Registered Nurse (General)>

☐ (3) Study in University (UGC funded), Higher Diploma in Nursing <Registered Nurse (General)>

☐ (4) Study in University (UGC funded), Bachelor of Science (Honours) in Nursing <Registered Nurse (General)>

4. Years of study

☐ (1) year 1 ☐ (2) year 2

☐ (3) year 3 ☐ (4) year 4
5. Average family income per month (HK$)

□ (1) ≤$4999 □ (2) $5000 - 7999 □ (3) $8000-9999
□ (4) $10000-14999 □ (5) $15000-19999 □ (6) $20000-24999
□ (7) $25000-29999 □ (8) $30000-39999 □ (9) $40000-59999
□ (10) ≥ $ 60000

6. Is or was there any family member, relative, or friend employed as a practicing nurse (Registered Nurse / Enrolled Nurse)?

□ (1) Yes □ (2) No

7. Is or was there any family member, relative, or friend employed in a health-related career other than nursing?

□ (1) Yes □ (2) No

8. Average volunteer work per week

□ (1) No experience at all □ (2) <3hours □ (3) 3-6hours
□ (4) 7-9hours □ (5) 10-12hours □ (6) >12hours

9. Total amount of health care-related work experiences (include practicum)

□ (1) No experience at all □ (2) <3months □ (3) 3-6months
□ (4) 7-9months □ (5) 10months– 1year □ (6) >1year

10. Total amount of non-health care-related work experiences (include practicum)

□ (1) No experience at all □ (2) <3months □ (3) 3-6months
□ (4) 7-9months □ (5) 10months– 1year □ (6) >1year

(Please go to Part 2)
Part 2 (For Higher Diploma in Health Studies Division students only)

1. Can your academic performance meet the entry requirements of “Registered Nurse” programme?

□ (1) Definitely not □ (2) Probably not □ (3) Unknown □ (4) Probably □ (5) Definitely not

2. Can your academic performance meet the entry requirements of “Enrolled Nurse” programme?

□ (1) Definitely not □ (2) Probably not □ (3) Unknown □ (4) Probably □ (5) Definitely not

(Please go to Part 3)

Part 3

1. Your most favourite course is:

□ (1) “Registered Nurse (General)” nursing program

□ (2) “Registered Nurse (Psychiatric)” nursing program

□ (3) “Enrolled Nurse (General)” nursing program

□ (4) “Enrolled Nurse (Psychiatric)” nursing program

□ (5) Others, Please specific: ________________________________

2. In the coming 5 years, would you choose nursing as your career?

□ (1) Definitely No □ (2) Probably No □ (3) Undecided □ (4) Probably Yes □ (5) Definitely Yes

(Please go to Part 4)
### Part 4

How do the following factors influence you in choosing nursing as a career?

*Please tick ✓ the answer that best expresses your “true” feelings.*

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<tbody>
<tr>
<td>1.</td>
<td>Your gender</td>
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<td>2.</td>
<td>Your race</td>
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<tr>
<td>3.</td>
<td>Your personality</td>
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<td>4.</td>
<td>Your health status</td>
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<td>5.</td>
<td>Your past academic performance</td>
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<td>6.</td>
<td>Your current academic performance</td>
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<td>Your father</td>
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<td>8.</td>
<td>Your mother</td>
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<td>9.</td>
<td>Your close relatives</td>
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<td>10.</td>
<td>Your close friends</td>
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<td>11.</td>
<td>Your teachers</td>
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<td>12.</td>
<td>Your career advisors</td>
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<td>13.</td>
<td>Your contact with nurses</td>
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<td>14.</td>
<td>Your contact with physicians</td>
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<td>15.</td>
<td>Your family member, relative, or friend employed as a practicing nurse (RN/EN)</td>
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<td>16.</td>
<td>Your family member, relative, or friend employed in a health-related career other than nursing</td>
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<td>17.</td>
<td>Your reading about medicine or nursing</td>
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<td>18.</td>
<td>Your perceived image of nurses through the media</td>
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<td>19.</td>
<td>Your hospitalization experiences</td>
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<td>20.</td>
<td>Your experiences with outpatient health services</td>
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<td>21.</td>
<td>Your experiences visiting patients</td>
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<td>22.</td>
<td>Your experiences of caring for a sick family member or friend</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>23.</td>
<td>Your volunteer work experiences</td>
<td></td>
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<tr>
<td>24.</td>
<td>Your health care-related work experiences (including practicum)</td>
<td></td>
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<tr>
<td>25.</td>
<td>Your non-health care-related work experiences (including practicum)</td>
<td></td>
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</table>

*(Please go to Part 5)*
### Part 5

*Please tick ✓ the answer that best expresses your “true” feelings.*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>1) Strongly Disagree</th>
<th>2) Disagree</th>
<th>3) Neutral</th>
<th>4) Agree</th>
<th>5) Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nursing is a feminine job which is only suitable for women</td>
<td></td>
<td></td>
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<tr>
<td>2.</td>
<td>Nursing is only suitable for people who want a secure job.</td>
<td></td>
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<tr>
<td>3.</td>
<td>Everyone would benefit if nurses spent less time in research and more time caring for patients.</td>
<td></td>
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<tr>
<td>4.</td>
<td>Nursing can save lives, which makes it a meaningful job.</td>
<td></td>
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<tr>
<td>5.</td>
<td>People select nursing courses because they cannot achieve the academic standards to enter other preferred course choices.</td>
<td></td>
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<tr>
<td>6.</td>
<td>Nursing can secure family income.</td>
<td></td>
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<tr>
<td>7.</td>
<td>Nursing is a dangerous job that requires frequent contact with highly infectious patients.</td>
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<tr>
<td>8.</td>
<td>Nursing requires expert skills.</td>
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</tr>
<tr>
<td>9.</td>
<td>Studying in a nursing programme is costly.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10.</td>
<td>Nurses are well-educated.</td>
<td></td>
<td></td>
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<tr>
<td>11.</td>
<td>Nursing is an unacceptable job that requires the handling of dead bodies.</td>
<td></td>
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<tr>
<td>12.</td>
<td>Nursing programmes are difficult.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>13.</td>
<td>Nursing income is attractive.</td>
<td></td>
<td></td>
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<tr>
<td>14.</td>
<td>The role of nurses is less important than that of doctors.</td>
<td></td>
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<tr>
<td>15.</td>
<td>Nursing provides less opportunity to raise social status.</td>
<td></td>
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<tr>
<td>16.</td>
<td>Nursing is a respectable profession.</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>17.</td>
<td>Nursing cannot provide financial security.</td>
<td></td>
<td></td>
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<tr>
<td>18.</td>
<td>Shift duty nursing work (including nights and holidays) provides more leisure time during weekdays.</td>
<td></td>
<td></td>
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<tr>
<td>19.</td>
<td>Nursing is a job suitable for both men and women.</td>
<td></td>
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</tr>
<tr>
<td>20.</td>
<td>Nurses are just a subsidiary of physicians.</td>
<td></td>
<td></td>
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<tr>
<td>21.</td>
<td>Nursing is a disgusting job in which unpleasant, low-skilled ‘dirty/messy’ work is performed.</td>
<td></td>
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</tr>
<tr>
<td>22.</td>
<td>People who can enter nursing courses have achieved good academic standard.</td>
<td></td>
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<td></td>
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<tr>
<td>23.</td>
<td>Nurses can only follow orders from physicians without queries.</td>
<td></td>
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<tr>
<td>24.</td>
<td>Nurses are influential in the development of health care policies.</td>
<td></td>
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<tr>
<td>25.</td>
<td>Nursing has a low salary</td>
<td></td>
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<tr>
<td>26.</td>
<td>Nursing is a low prestige occupation.</td>
<td></td>
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<tr>
<td>27.</td>
<td>Nurses can have their own professional judgments.</td>
<td></td>
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<tr>
<td>28.</td>
<td>Nurses incorporating research findings into clinical practice would improve patient care standards.</td>
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<tr>
<td>29.</td>
<td>Shift duty nursing work (including nights and holidays) affects normal social life.</td>
<td></td>
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<tr>
<td>30.</td>
<td>The services provided by nurses are as important as those provided by physicians.</td>
<td></td>
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</tr>
</tbody>
</table>

Thank you for your participation
Appendix 2: Content Validity Index of "Nursing Career Perception Questionnaire (NCPQ)"

Please complete this content validity index by giving a tick ✓ to independently rate the relevancy of each item to the objectives using a 4-point rating scale: (1) Not relevant at all, (2) Not quite relevant, (3) Quite relevant, and (4) Very relevant.

<table>
<thead>
<tr>
<th>Section</th>
<th>Information</th>
<th>Rating Scale</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1.</td>
<td>性別 Gender</td>
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<td></td>
<td>□(1)男 Male</td>
<td>( )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□(2)女 Female</td>
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<td></td>
<td>Comments</td>
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<tr>
<td>2.</td>
<td>年齡 Age</td>
<td>(1) Not quite relevant</td>
<td>( )</td>
</tr>
<tr>
<td></td>
<td>□(1)男 Male</td>
<td>( )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□(2)女 Female</td>
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<td></td>
<td>Comments</td>
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<tr>
<td>3.</td>
<td>所屬課程 Course undertaken</td>
<td>(1) Quite relevant</td>
<td>( )</td>
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<tr>
<td></td>
<td>□(1)健康有關的高級文憑 Higher Diploma in Health Studies Division</td>
<td>( )</td>
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<tr>
<td></td>
<td>□(2)環境保護/化學有關的高級文憑 Higher Diploma in Environmental protection/Chemistry Division</td>
<td>( )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>□(3)在醫院護士學校修讀護理學高級文憑 &lt;註冊護士(普通科)&gt; Hospital-Based School in Nursing «Registered Nurse (General)&gt;</td>
<td>( )</td>
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<tr>
<td></td>
<td>□(4)在大學修讀的護理學高級文憑 &lt;註冊護士(普通科)&gt; Study in University, HD in Nursing/BSN «Registered Nurse (General)&gt;</td>
<td>( )</td>
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<td></td>
<td>Comments</td>
<td>( )</td>
<td></td>
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<tr>
<td>4.</td>
<td>就讀年級 Years of study</td>
<td>(4) Very relevant</td>
<td>( )</td>
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<tr>
<td></td>
<td>□(1)一年級 year 1</td>
<td>( )</td>
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<td></td>
<td>□(2)二年級 year 2</td>
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<td></td>
<td>□(3)三年級 year 3</td>
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<td></td>
<td>□(4)四年級 year 4</td>
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<td>Comments</td>
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<tr>
<td>5.</td>
<td>每月平均家庭收入 (港元) Average family income per month (HK$)</td>
<td>(1) Not relevant at all</td>
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<td>□(1)≤ $4999</td>
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<td>□(2)$5000 - 7999</td>
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<td>□(3)$8000 - 9999</td>
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<td>□(4)$10000 - 14999</td>
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<td>□(5)$15000 - 19999</td>
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<td>□(6)$20000 - 24999</td>
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<td></td>
<td>□(7)$25000 - 29999</td>
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<td>□(8)$30000 - 39999</td>
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<td>□(9)$40000 - 59999</td>
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<td></td>
<td>□(10)≥ $60000</td>
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<td>Comments</td>
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</table>
Content Validity Index of “Nursing Career Perception Questionnaire (NCPQ)”
Please complete this content validity index by giving a tick ✔ to independently rate the relevancy of each item to the objectives using a 4-point rating scale: (1) Not relevant at all, (2) Not quite relevant, (3) Quite relevant, and (4) Very relevant.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Rating Scale</th>
<th>Comments</th>
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<tbody>
<tr>
<td>6.</td>
<td>你有沒有任何家庭成員 / 親戚 / 朋友是或曾是一個護士（註冊護士 / 登記護士）嗎？</td>
<td>(1) Not relevant at all (2) Not quite relevant (3) Quite relevant (4) Very relevant</td>
<td>□(1)有 Yes □(2)沒有 No</td>
</tr>
<tr>
<td>7.</td>
<td>你有沒有任何家庭成員 / 親戚 / 朋友是或曾是從事護士以外的健康相關的工作？</td>
<td></td>
<td>□(1)有 Yes □(2)沒有 No</td>
</tr>
<tr>
<td>8.</td>
<td>每週平均志願工作時數 Average volunteer work per week</td>
<td>(1) No experience at all (2)&lt;3 hours (3)3-6 hours (4)7-9 hours (5)10-12 hours (6)&gt;12 hours</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>健康護理相關的工作經驗 (包括實習的總數) Total amount of health care related working experience (include practicum)</td>
<td>(1) No experience at all (2)&lt;3 months (3)3-6 months (4)7-9 months (5)10 months - 1 year (6)&gt;1 year</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>非健康護理相關工作經驗 (包括實習的總數) Total amount of non-health care related working experience (include practicum)</td>
<td>(1) No experience at all (2)&lt;3 months (3)3-6 months (4)7-9 months (5)10 months - 1 year (6)&gt;1 year</td>
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<tr>
<td></td>
<td>(請回答第二部分) (Please go to Part 2)</td>
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<tr>
<td>Comment:</td>
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Content Validity Index of “Nursing Career Perception Questionnaire (NCPQ)”
Please complete this content validity index by giving a tick ✓ to independently rate the relevancy of each item to the objectives using a 4-point rating scale: (1) Not relevant at all, (2) Not quite relevant, (3) Quite relevant, and (4) Very relevant.

<table>
<thead>
<tr>
<th>第二部份：選擇護理作為職業的近端影響</th>
<th>Part 2 : Contextual Influences Proximal to Choice Behavior towards nursing as a career</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 你的學業成績能夠達到入讀 “註冊護士” 護理課程的要求嗎?</td>
<td>Can your academic performance meet the entry requirements of “Registered Nurse” nursing program?</td>
</tr>
<tr>
<td>□ (1)絕對不能夠 □ (2)大概不能夠 □ (3)未知 □ (4)大概能夠 □ (5)絕對能夠</td>
<td></td>
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<tr>
<td>Definitely not not unknown Probably yes</td>
<td></td>
</tr>
<tr>
<td>Comments</td>
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</tr>
</tbody>
</table>

| 2. 你的學業成績能夠達到入讀 “登記護士” 護理課程的要求嗎?  | Can your academic performance meet the entry requirements of “Enrolled Nurse” nursing program?  |
| □ (1)絕對不能够 □ (2)大概不能够 □ (3)未知 □ (4)大概能够 □ (5)绝对能够  |  |
| Definitely not not unknown Probably yes  |
| Comments  |  |

(請回答第三部份) (Please go to Part 3)

<table>
<thead>
<tr>
<th>第三部份：選擇護理作為職業目標</th>
<th>Part 3 : Choice goal towards nursing as a career</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 你最心儀的學科是:  Your most favourite course is:</td>
<td></td>
</tr>
<tr>
<td>□(1)“註冊護士” 護理課程 Registered Nurse nursing program</td>
<td></td>
</tr>
<tr>
<td>□(2)“登記護士” 護理課程 Enrolled Nurse nursing program</td>
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<tr>
<td>□(3)其他Others，請註明Please specific: ________________</td>
<td></td>
</tr>
<tr>
<td>Comments</td>
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</tbody>
</table>

2. 護理作為職業是你的選擇目標: Nursing as a career is your choice goal:  |
| □ (1)絕對不是 □ (2)大概不是 □ (3)未有 □ (4)大概是 □ (5)絕對是  |  |
| Definitely not probably undecided probably yes  |
| Comments  |  |

(請回答第四部份) (Please go to Part 4)
Content Validity Index of “Nursing Career Perception Questionnaire (NCPQ)”
Please complete this content validity index by giving a tick ✓ to independently rate the relevancy of each item to the objectives using a 4-point rating scale: (1) Not relevant at all, (2) Not quite relevant, (3) Quite relevant, and (4) Very relevant.

<table>
<thead>
<tr>
<th>第四部份 Part 4</th>
<th>以下因素如何影響你選擇護理作為職業呢？</th>
</tr>
</thead>
<tbody>
<tr>
<td>How do the following factors influence you in choosing nursing as a career?</td>
<td></td>
</tr>
</tbody>
</table>

請以 ✓ 號選擇最合您心意的答案。Please tick ✓ the answer that best expresses your “true” feelings.

<table>
<thead>
<tr>
<th></th>
<th>(1) Very Negatively Influence</th>
<th>(2) Negatively Influence</th>
<th>(3) No Influence at all/Not applicable</th>
<th>(4) Positively Influence</th>
<th>(5) Very Positively Influence</th>
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<tbody>
<tr>
<td>1. 你的性別 Your gender</td>
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<td>2. 你的種族 Your race</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
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<td>(   ) (   ) (   ) (   )</td>
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<td>3. 你的性格 Your personality</td>
<td>(   ) (   ) (   ) (   )</td>
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<tr>
<td>4. 你的健康狀況 Your health status</td>
<td>(   ) (   ) (   ) (   )</td>
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<tr>
<td>5. 你以往的學業成績 Your past academic performance</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
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<tr>
<td>6. 你現在的學業成績 Your current academic performance</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
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<tr>
<td>7. 你的父親 Your father</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
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</tr>
<tr>
<td>8. 你的母親 Your mother</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
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<tr>
<td>9. 你的親戚 Your close relatives</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
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<tr>
<td>10. 你的好友 Your close friends</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
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<tr>
<td>11. 你的老師 Your teachers</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
<td>(   ) (   ) (   ) (   )</td>
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<td>12. 你的職業附導主任 Your career advisors</td>
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<td>13. 護士 The nurses</td>
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<td>14. 醫生 The physicians</td>
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<tr>
<td>15. 你的家庭成員/親戚/朋友是或曾是一個護士/登記護士 Your family member / relative / friend practicing as a nurse (Registered Nurse / Enrolled Nurse)</td>
<td>(   ) (   ) (   ) (   )</td>
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<td>16. 你的家庭成員/親戚/朋友是或曾是從事護士以外的健康相關的工作 Your family member / relative / friend practicing in health related field other than nursing</td>
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<td>17. 閱讀關於醫學或護理的書籍 Reading books about medicine or nursing</td>
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Comments
### Content Validity Index of “Nursing Career Perception Questionnaire (NCPQ)”

Please complete this content validity index by giving a tick √ to independently rate the relevancy of each item to the objectives using a 4-point rating scale: (1) Not relevant at all, (2) Not quite relevant, (3) Quite relevant, and (4) Very relevant.

#### Part 4

<table>
<thead>
<tr>
<th>Question</th>
<th>(1) Not relevant at all</th>
<th>(2) Not quite relevant</th>
<th>(3) Quite relevant</th>
<th>(4) Very relevant</th>
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<tbody>
<tr>
<td>18. 傳播媒體</td>
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<td>Portrayal of nurses on the media</td>
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<td>19. 你以往住院的經驗</td>
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<td>Your previous hospitalized experience</td>
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<td>20. 你以往使用門診健康服務的經驗</td>
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<tr>
<td>Your previous use of outpatient health services experience</td>
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<td>21. 你以往在醫院探望病人的經驗</td>
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<tr>
<td>Your previous experience of visiting patients in the hospital</td>
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<tr>
<td>22. 你以往在醫院照顧生病的家人或朋友的經驗</td>
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<tr>
<td>Your previous experience of caring a sick family member or friend in the hospital</td>
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<tr>
<td>23. 你以往的志願工作的經驗</td>
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<tr>
<td>Your previous volunteer work experience</td>
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<tr>
<td>24. 你以往的健康護理相關的工作經驗(包括實習)</td>
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<td>Your previous health care related working experience (include practicum)</td>
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<tr>
<td>25. 你以往的非健康護理相關的工作經驗(包括實習)</td>
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<tr>
<td>Your previous non-health care related working experience (include practicum)</td>
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**Content Validity Index of “Nursing Career Perception Questionnaire (NCPQ)”**

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| 第五部份 Part 5 | 1. 護理是一種女性的工作，只適合女人。Nursing is a feminine job which is only suitable for women. | ( ) ( ) ( ) ( ) |
| | 2. 護理工作是適合那些想要工作安全感的人。Nursing is suitable for people who want a secure job. | ( ) ( ) ( ) ( ) |
| | 3. 如果護士花少些時間在研究和花多些時間在照顧病人上，每個人都將會受益。Everyone would benefit if nurses spent less time in research and more time caring for patients. | ( ) ( ) ( ) ( ) |
| | 4. 護理可以拯救生命，是一份有意義的工作。Nursing can save life which is a meaningful job. | ( ) ( ) ( ) ( ) |
| | 5. 修讀護理課程的人都是因為學術水平未能達到其他首選學科的要求。People select nursing courses because they cannot achieve the academic standards to enter other preferred course choices. | ( ) ( ) ( ) ( ) |
| | 6. 護理工作能夠保障家庭收入。Nursing can secure family income. | ( ) ( ) ( ) ( ) |
| | 7. 護士總是暴露於危疾的病患之中。Nurses are always exposed to patients with dangerous diseases. | ( ) ( ) ( ) ( ) |
| | 8. 護理工作是需要做很多專門技能的工作。Nursing requires much expert skills. | ( ) ( ) ( ) ( ) |
| | 9. 修讀護理課程的費用實在是昂貴的。Studying nursing program is costly. | ( ) ( ) ( ) ( ) |
| | 10. 護士都是受過良好教育的。Nurses are well-educated. | ( ) ( ) ( ) ( ) |

**Comments**
**Content Validity Index of “Nursing Career Perception Questionnaire (NCPQ)”**

Please complete this content validity index by giving a tick ✓ to independently rate the relevancy of each item to the objectives using a 4-point rating scale: (1) Not relevant at all, (2) Not quite relevant, (3) Quite relevant, and (4) Very relevant.

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<tr>
<th>第五部份 Part 5</th>
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<th>(2) Quite relevant</th>
<th>(3) Not quite relevant</th>
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</tr>
</thead>
<tbody>
<tr>
<td>11. 護理工作需要處理屍體，是一份難以接受的工作。 Nursing task that require handling of dead bodies is an unacceptable job.</td>
<td>(   )</td>
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</tr>
<tr>
<td>12. 修讀護理課程很困難。 Nursing program is difficult to study.</td>
<td>(   )</td>
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<tr>
<td>13. 護士的收入具吸引力。 Nursing income is attractive.</td>
<td>(   )</td>
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<td>14. 護士的工作不數醫生的工作重要。 The service given by nurses is less important than that given by physicians.</td>
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<td>15. 護理工作較難提升社會階層。 Nursing provides less opportunity to raise social status.</td>
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<td>16. 護理工作是一種受人尊敬的專業工作。 Nursing is a respectable profession.</td>
<td>(   )</td>
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<tr>
<td>17. 護理工作不能提供財政上的安全感。 Nursing cannot provide financial security.</td>
<td>(   )</td>
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<td>18. 輪班的護理工作(包括晚上和公眾假期)提供較多平日的休閒時間。 Shift duty nursing work (including night and holidays) provides more leisure time during weekdays.</td>
<td>(   )</td>
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<tr>
<td>19. 護理是一個適合男人和女人的工作。 Nursing is a job suitable for both men and women.</td>
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<tr>
<td>20. 護士只不過是醫生的附屬。 Nurses are just a subsidiary of physicians.</td>
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**Comments**

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Content Validity Index of “Nursing Career Perception Questionnaire (NCPQ)”
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<tr>
<th>第五部份 Part 5</th>
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</thead>
<tbody>
<tr>
<td>21. 護士需要執行令人不愉快及低技能‘骯髒的’或‘污穢的’工作，以照顧他們的病人。</td>
<td>( )</td>
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<tr>
<td>Nurses need to perform unpleasant low skilled 'dirty' or 'messy' work in order to care for their patients.</td>
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<td>22. 入讀護理課程的人都是學術水平較好的。</td>
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<tr>
<td>People who can enter nursing course have achieved good academic standard.</td>
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<tr>
<td>23. 護士可以毫無疑問地遵循醫生的命令工作。</td>
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<tr>
<td>Nurses can only follow orders from physicians without queries.</td>
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<tr>
<td>24. 護士在發展衛生保健政策中頗具影響力。</td>
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<tr>
<td>Nurses are influential in the development of health care policies.</td>
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<tr>
<td>25. 護理工作的薪酬低。</td>
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<tr>
<td>Nursing has a low salary.</td>
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<tr>
<td>26. 護理是一個低聲望的工作。</td>
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<tr>
<td>Nursing is a low prestige occupation.</td>
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<tr>
<td>27. 護士可以有自己的專業判斷。</td>
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<tr>
<td>Nurses can have their own professional judgments.</td>
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<tr>
<td>28. 護士將研究結果納入臨床實習中，會提升病人護理的水平。</td>
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<tr>
<td>Nurses incorporating research findings into clinical practice would improve patient care standard.</td>
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<tr>
<td>29. 輪班的護理工作(包括晚間及公眾假期)會影響正常的社交生活。</td>
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<tr>
<td>Shift duty nursing work (including night and holidays) affects normal social life.</td>
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<tr>
<td>30. 護士的工作與醫生的工作是同等重要的。</td>
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<tr>
<td>The service given by nurses is as important as that given by physicians.</td>
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問卷完，謝謝你的寶貴意見
Thank you for your participation

Comments
有關研究資料

研究題目：「在職業技術學院就讀的學生，在大學就讀的和在醫院護士學校就讀的護士學生對護理作為職業的看法」

誠邀閣下參加由江黃潔芳博士負責監督，香港理工大學護理學院碩士生劉婉清負責執行的研究計劃。

這項研究的目的是為了了解在職業技術學院就讀的學生，在大學就讀的和在醫院護士學校就讀的護士學生對護理作為職業的看法。

請參加者簽署同意書，並在20分鐘內完成“對護理作為職業的看法的問卷”，並將已完成的問卷直接投入收集箱內。當參加者完成問卷後，亦表示參加者默許同意。

參與這項研究是不記名及自願的。閣下享有充分的權利在研究開始之前或之後決定退出這項研究，而不會受到任何對閣下不正常的待遇或被追究責任。

凡有關閣下的資料將會保密，一切資料的編碼只有研究人員得悉。所有問卷及個人資料將會在研究結束後被毀滅。

如果閣下對這項研究有任何的不滿，可隨時與香港理工大學人類實驗對象操守小組委員會秘書呂小姐聯絡（地址：香港理工大學研究事務處M502室轉交）。

如果閣下想獲得更多有關這項研究的資料，請與劉婉清小姐聯絡，電話2256聯絡。

謝謝閣下有興趣參與這項研究。

研究小組
江黃潔芳博士
劉婉清小姐
INFORMATION SHEET

Study Title: “The Perceptions of Nursing as a Career among students studying in the vocational institute, nursing students from the university and hospital-based nursing school”

You are invited to participate in a study supervised by Dr. KONG WONG Kit Fong Sarah and conducted by Ms. LAU Yuen Ching Belle, student of Master in Nursing, School of Nursing of The Hong Kong Polytechnic University.

The aim of this study is to investigate the perceptions of nursing as a career among students studying in the vocational institute, nursing students from the university and hospital-based nursing school in Hong Kong.

Participant is required to sign the consent form below, complete the “Nursing Career Perception Questionnaire (NCPQ)” within 20 minutes and then put the completed questionnaire directly into the collection box. Upon the completion of the questionnaires, the participants have given an implicit consent in the study.

Participation is anonymous and voluntary. You have every right to withdraw from the study before or during the measurement without penalty of any kind.

All information related to you will remain confidential, and will be identifiable by codes known only to the researcher. Questionnaires will be destroyed at the end of the research.

If you have any complaints about the conduct of this research study, please do not hesitate to contact Ms. Kath Lui, Secretary of the Human Subjects Ethics Sub-Committee of The Hong Kong Polytechnic University in person or in writing (c/o Research Office in Room M502 of the University).

If you would like more information about this study, please contact Ms. LAU Yuen Ching Belle at 2256.

Investigator
Dr. KONG WONG Kit Fong Sarah
Ms. LAU Yuen Ching Belle

Thank you for your interest in participating in this study.
參與研究同意書

研究題目：「在職業技術學院就讀的學生，在大學就讀的和在醫院護士學校就讀的護士學生對護理作為職業的看法」

本人 ______________________ 同意參加由 江黃潔芳博士
負責監督， 香港理工大學護理學院碩士生劉婉清 執行的研究項目。

我理解此研究所獲得的資料可用於未來的研究和學術交流。然而我有權保護自己的隱私，我的個人資料將不能洩漏。

我對所附資料的有關步驟已經得到充分的解。我理解可能會出現的風險。我是自願參與這項研究。

我理解我有權在研究過程中提出問題，並在任何時候決定退出研究而不會受到任何不正常的待遇或被追究責任。

參加者姓名： __________________________________________

參加者簽名： __________________________________________

研究人員姓名： __________________________________________

研究人員簽名： __________________________________________

日期： __________________________________________
CONSENT TO PARTICIPATE IN RESEARCH

Study Title: “The Perceptions of Nursing as a Career among students studying in the vocational institute, nursing students from the university and hospital-based nursing school”

I _______________________ hereby consent to participate in the captioned research supervised by Dr. KONG WONG Kit Fong Sarah and conducted by Ms. LAU Yuen Ching Belle, student of Master in Nursing, School of Nursing of The Hong Kong Polytechnic University.

I understand that information obtained from this research may be used in future research and published. However, my right to privacy will be retained, i.e., my personal details will not be revealed.

The procedure as set out in the attached information sheet has been fully explained. I understand the benefits and risks involved. My participation in the project is voluntary.

I acknowledge that I have the right to question any part of the procedure and can withdraw at any time without penalty of any kind.

Name of participant

Signature of participant

Name of researcher

Signature of researcher

Date
Appendix 5: Ethical Approval Sought From The Human Subjects Ethics Sub-Committee, School Of Nursing, The Hong Kong Polytechnic University

To WONG Kit Fong (School of Nursing)

From KWONG Wai Yung, Chair, Departmental Research Committee

Email hsemik@ Date 18-May-2012

Application for Ethical Review for Teaching/Research Involving Human Subjects

I write to inform you that approval has been given to your application for human subjects ethics review of the following project for a period from 21-Apr-2012 to 30-Apr-2013:

Project Title: The Perceptions of Nursing as a Career among students studying in the vocational institute, and nursing students from the university and hospital based nursing school

Department: School of Nursing

Principal Investigator: WONG Kit Fong

Please note that you will be held responsible for the ethical approval granted for the project and the ethical conduct of the personnel involved in the project. In the case of the Co-PI, if any, has also obtained ethical approval for the project, the Co-PI will also assume the responsibility in respect of the ethical approval (in relation to the area of expertise of respective Co-PI in accordance with the stipulations given by the approving authority).

You are responsible for informing the Departmental Research Committee in advance of any changes in the proposal or procedures which may affect the validity of this ethical approval.

You will receive separate email notification should you be required to obtain fresh approval.

KWONG Wai Yung

Chair

Departmental Research Committee
Appendix 6: Formal Approval for Data Collection for Research Sought From the Department Head of Applied Science, Hong Kong Institute of Vocational Education (Sha Tin), Vocational Training Council

To: Ms. L.AI Yuen Ching, Belle
Lecturer, Department of Applied Science

25 April 2012.

Dear Ms. L.AI,

Ms. Application for Data Collection for Research

Regarding your application for data collection from the Applied Science process of our Institution from May to October 2012 for your research on the perceptions of nursing as a career, I am pleased to inform you that your request is granted. You are reminded to adhere to the usual ethical conduct such as privacy in the research.

Should you need further information, please feel free to contact Ms. Delby LoPung, our Executive Officer, on 2226-7161.

Yours sincerely,

Mr. Andrew Chan
Head, Department of Applied Science
Appendix 7: Acceptance of Abstract for Presentation in the International Nursing Conference: From Knowledge to Practice: Advances in Nursing Care 2013 on June 20-23, 2013; Wuxi, Jiangsu Province, China.

Dear LAU, Yuen Ching Belle,

Acceptance of Abstract for Presentation in the International Nursing Conference:
From Knowledge to Practice: Advances in Nursing Care 2013

Congratulations on the selection of your Oral presentation entitled, “Perceptions of Nursing as a Career amongst Health-Studies Students and University-Based Nursing Students”, during the International Nursing Conference: From Knowledge to Practice: Advances in Nursing Care 2013. We look forward to your participation in this upcoming event.

Oral Presentation Scheduled
- Abstract ID #: NE_1
- Abstract Title: Perceptions of Nursing as a Career amongst Health-Studies Students and University-Based Nursing Students
- Date: Saturday, 22 June 2013
- Session Time: 9:00 am-11:00am
- Venue: The 5th meeting room, 2/F

There will be a total of eight/nine presentations scheduled during the session and your total presentation time is 10 minutes with 5 minutes for questions from the audience.

REGISTRATION FOR CONFERENCE
- 5th June 2013 (Wed) – Presenter Registration Deadline
- All presenters are required to register for at least the day of presentation. Presenters must register and submit payment by the presenter registration deadline to be listed in the final program.
- Registration form is available on our website at: http://un.polyu.edu.hk/filemanagers/common/collaborations/pi_lota_chapter/AbstractRegistrationForm_INC2013.pdf
- The completed registration form with a HK dollar or US dollar cheque should be sent to the Secretariat, Mr Aero LI, The Hong Kong Polytechnic University, School of Nursing, Hung Hom, Kowloon, Hong Kong. Personal or Cashier cheque should be crossed and made payable to: “The Hong Kong Polytechnic University”.

Details of the conference are as follows:
Date: 20-23 June 2013
Time: 0900 – 1730
Venue: Wuxi Medical School, Jiangnan University, Wuxi, Jiangsu Province, China
Should you have any question, please contact the Conference Secretariat, Mr. Aero Li at aero.li

Yours sincerely,

Professor Alice Yuet Loke
Scientific Committee,
Ex-Officio, Pi Iota Chapter,
STTI Honor Society of Nursing
Professor,
School of Nursing,
The Hong Kong Polytechnic University