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EDUCATIONAL FACTORS INFLUENCING THE SELF-EFFICACY OF NEW GRADUATE NURSES FOR PROFESSIONAL COMPETENCIES DURING THE TRANSITION TO REGISTERED NURSE

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ABSTRACT

Problem: New graduate nurses (NGNs) are often considered the solution to the global nursing shortage. However, researchers are reporting an alarming new trend; NGNs are leaving the profession (Duchscher & Cowin, 2004; Sochalski, 2002). They are unprepared to work in the 'real world', even after successfully graduating from a nursing program.

Aim: This study examined the relationship between each of four educational factors (biological science courses, clinical practicum in undergraduate education; orientation/training provided by the employing hospital; post-registration preceptorship) and NGNs' self-efficacy (confidence) for professional competencies as they transition to the role of registered nurse.

Methods: Based on Bandura's theory of self-efficacy, a researcher-designed self-report questionnaire was mailed to 339 NGNs working in acute care hospitals across the province of Ontario.

Results: Post-registration preceptorship most positively influenced NGNs' confidence with their professional competencies. Specifically, preceptorship lasting at least 4 weeks, and the consistency of one preceptor, contributed to greater confidence for NGNs.

Keywords: New graduate nurse, self-efficacy, confidence, transition, registered nurse

CO-AUTHORSHIP

Erika Cheung completed the following work under the supervision of Dr. Carroll Iwasiw and Dr. Dorothy Forbes. Both Dr. Iwasiw and Dr. Forbes will be co-authors on the publication of this manuscript.

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"The thing always happens that you really believe in; and the belief in a thing that makes it happen."

- Frank Lloyd Wright

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Part One

Background

Canada's aging population is not an isolated trend. According to the World Health Organization (WHO), the number of people aged 65 and above will increase by 88% in the next 25 years (WHO, 1998). What is more alarming is the disproportionate growth of the working age population, which was estimated to increase by only 45% (WHO). This is congruent with the reported projections by researchers at Statistics Canada (2005); it was estimated that the number of seniors aged 65 and over will exceed the number of children aged less than 15 years, by 2015. Further, it was estimated that by 2031, Canada's senior population would account for 23% to 25% of the total population (Statistics Canada). Naturally, as people age, they develop more health problems. With today's advancing medical technology, people are living longer, and have more complex health needs. However, considering the projected disproportionate growth in the workforce (Statistics Canada; WHO), providing the necessary health care to the growing and aging population will be difficult.

Globally, there is a high demand for nurses. Though nurses make up the largest proportion of health care providers in almost every country (International Council of Nurses [ICN], 2006), there is still a severe shortage of nurses. The shortage of nurses is exacerbated by the increasing demand for health care, the aging nursing workforce, and the diminishing influx of nurses. It was estimated that 30, 000 nurses in Canada would leave the profession by 2006 (Canadian Institute for Health Information [CIHI], 2005). Statistics to confirm this number were not available to validate this estimated number, however, the province of Ontario reported a loss of 3, 843 RN members in the year 2006

(College of Nurses of Ontario [CNO], 2006a). The estimated average age of registered nurses (RNs) working in Canada in 2005 was 44.7 years (CIHI, 2006). As nurses prepare to retire, the loss of RNs from the profession will likely exceed the number of new graduate nurses (NGNs) entering the nursing profession.

Problem

Demands on the Canadian health care system have generated increasing concern over the diminishing nursing workforce. New graduate nurses make up a large portion of the supply of new nurses. However, studies have shown that NGNs are difficult to retain. As reported in a survey conducted in 2000, 11.6% of NGNs left the profession within four years of graduation (Sochalski, 2002). Researchers estimated that 35% to 61% of NGNs in the United States will either change employers or leave the profession entirely (Duchscher & Cowin, 2004). Canadian statistics are unavailable; however, it is reasonable to expect that the percentages are comparable to the statistics from the United States.

In addition to the attrition of NGNs, there has been a decline in registration within the nursing profession. In 2005, the College of Nurses of Ontario (provincial regulatory body) had the lowest number of new RN members register with the college since 2001. This trend was similar nationally, where there was an overall decrease in registration of new RN members in Canada (CNO, 2006b). This decline in registration in Ontario is attributed to the closing of diploma nursing programs in 2005; a gradual increase in RN registration should be expected, as more baccalaureate-prepared nurses begin to graduate from schools of nursing.

Significance

Nurse educators and administrators need to seriously consider the reasons for the loss of NGNs. Attrition from the nursing profession, and a decline in entry into the profession is exacerbating an already diminishing supply of nurses. Not only are experienced nurses leaving or retiring from the profession, novice nurses are also leaving (Sochalski, 2002). If NGNs do not stay in their job or the profession, this attrition can have damaging effects on the health care system (Berliner & Ginzberg, 2002; Rivers, Tsai, & Munchus, 2005). Many researchers have explored the stressful transition from NGN to professional nurse (Casey, Fink, Krugman, & Propst, 2004; Crow, Smith, & Hartman, 2005; Delaney, 2003; Duchscher, 2001; Ellerton & Gregor, 2003; Gerrish, 2000; Godinez, Schweiger, Gruver, & Ryan; 1999; Oermann & Garvin, 2002; Roberts, Jones, & Lynn, 2004). Now is the time for nurse educators and administrators to intervene to recruit and retain NGNs, in an effort to address the nursing shortage.

New Graduate Nurse Transition

The transition from NGN to RN can be stressful (Oermann & Garvin, 2002) due to inadequate socialization into the role of professional nurse (Delaney, 2003; Duchscher, 2001; Oermann & Garvin). Duchscher, and Oermann and Garvin, acknowledge the importance of a preceptorship, so that experienced RNs can facilitate the transition. A solid educational background is one of the cornerstones to the success of any professional, and nurses are no exception. Nurse researchers have reported that NGNs feel inadequately prepared to assume the role of a professional nurse, in spite of having graduated from accredited schools of nursing. Further, despite the experience in clinical areas during their undergraduate education, NGNs have voiced concerns over the

contextual change from the role of a student nurse, to the role of a RN. They feel unprepared to work within their health care organization as a professional (Casey et al., 2004; Delaney, 2003; Duchscher, 2001; Ebright, Urden, Patterson, & Chalko, 2004; Gerrish, 2000; Godinez et al., 1999), and have expressed frustration with the lack of clinical preparation when trying to manage a full patient load (Delaney; Duchscher; Gerrish).

These stresses experienced by NGNs have forced some into changing their jobs, leading to high turnover, which is costly to the health care system (Rivers, et al., 2005). Some NGNs have left the profession completely (Sochalski, 2002), burdening an already overtaxed health care system (Berliner & Ginzberg, 2002; Buerhaus, Staiger, & Auerbach, 2000), and further contributing to the nursing shortage. The lack of preparation can be addressed early by nurse educators and administrators, when nursing students are receiving their formal education, and when NGNs are starting their careers. By providing appropriate educational support, NGNs should feel more prepared to deal with the realities of working within the nursing profession.

Educational Factors

The four educational factors expected to help transition NGNs into their role as a professional nurse are: 1) biological science courses; 2) clinical practicum; 3) training and/or orientation, and 4) post-registration preceptorship. Biological science courses provide nursing students with knowledge, which partially influences their performance. This knowledge should be applied during clinical practicum, i.e. clinical experiences of nursing students throughout the four years of undergraduate education, and integrated into practice as a professional nurse. Clinical practicum offers students the opportunity to

incorporate knowledge with their nursing skills. Further, orientation and post-registration preceptorship should help NGNs incorporate knowledge, skills, and ability, into their practice. These four educational factors, in addition to nursing theory courses, should provide NGNs with the knowledge necessary to integrate into their nursing practice in the clinical setting. Their experience in the clinical setting should also assist them in gaining confidence in their ability to practice as a RN. Exploring which of these four educational factors has the most influence on NGNs' self-efficacy for clinical performance, will assist nurse educators and administrators in determining how best to ease the transition into the nursing profession.

Theory of Self-Efficacy

Bandura's theory of self-efficacy has been used to assess the ability of individuals to make complex decisions (Bandura & Wood, 1989); perform nursing tasks in a clinical setting (Clark, Owen, & Tholcken, 2004; Ford-Gilboe, Laschinger, Laforet-Fliesser, Ward-Griffin, & Foran, 1997); improve rehabilitation (Gage & Polatajko, 1994; Gortner & Jenkins, 1990), and transition successfully from school to work (Pinquart, Juang, & Silbereisen, 2003). The ability of an individual to perform a behaviour or accomplish a task, is dependent on his or her perception of own abilities (Maddux, 1995), and knowledge and skills (Schunk, 1996). Challenges can be overcome (Schunk) in abstract situations by utilizing one's knowledge (Bandura, 1979).

Perceptions of self-efficacy are influenced by four factors: previous performance, vicarious experience (observing others), verbal persuasion (verbal feedback based on past performance, or formal or informal teaching), and emotional arousal (emotional or physiological response to one's performance) (Bandura, 1986; Maddux & Stanley, 1986;

Schunk, 1986). The impact of education on perceptions of self-efficacy has been widely studied by nurse researchers (Babenko-Mould, Andrusyszyn, & Goldenberg, 2004; Clark et al., 2004; Ford-Gilboe et al., 1997; Goldenberg, Andrusyszyn, & Iwasiw, 2005; Goldenberg, Iwasiw, & MacMaster, 1997; Laschinger & Tresolini, 1999; Lim, Downie, & Nathan, 2004; Rosen, 2000). Identifying which aspect of nursing education (pre- and post-registration) influence self-efficacy may assist nursing faculty, and nurse educators and administrators, to support NGNs to make a more seamless and less stressful transition to RN.

The transition from student nurse to NGN has been extensively studied. The stress associated with the transition is exacerbated by the dichotomy between nursing as a student and real world nursing, navigating as an employee within the institution and its culture, and working with other health care professionals. New graduate nurses need better preparation for their new role. Nurse educators and administrators should not assume that a standard method of transitioning nursing students to the role of NGNs is effective. Therefore, the sources of knowledge which best facilitate the transition of NGNs and increase their self-efficacy, should be further explored.

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Part Two

Nurses constitute the largest portion of health care service providers; however, there is a global nursing shortage. Although the working population is estimated to increase by 45% in the next 25 years, the percentage of people aged 65 and older will increase by 88% (World Health Organization [WHO], 1998). People are living longer, though not necessarily healthier lives. This imbalance of seniors, and youth and working citizens, could place further strain on health care systems globally. As countries attempt to sustain a system to meet the health demands of growing populations, many are also struggling to find nurses to deliver the care that is needed.

In Canada alone, there is a dire shortage of nurses. Loss of nurses within the Canadian health care system is expected, due to emigration, natural attrition (i.e., retirement or death), or a change in profession (Canadian Institute for Health Information [CIHI], 2005). Further, the average age of Canadian nurses is increasing (CIHI, 2006), which means that newer, younger people are not entering the nursing profession in numbers sufficient to balance the aging nursing workforce. Soon, there will be a large efflux of registered nurses (RNs) from the profession due to retirement, and this will likely exceed the number of new graduate nurses (NGNs) entering the profession.

While there has been a decline in the number of NGNs entering the profession (College of Nurses of Ontario, 2005), it is particularly alarming that a relatively large percentage of NGNs leave the profession due to stress because of their inability to deal with the realities of becoming a RN, and working within an overburdened health care system (Beecroft, Kunzman, & Krozek, 2001; Duchscher & Cowin, 2004; Sochalski,

2002). The Canadian health care system must address the difficult task of both recruiting younger people into the nursing profession, and retaining them after they become RNs.

Nurse educators are responsible for ensuring that NGNs are adequately prepared to work effectively; yet, aspects of nursing programs that contribute strongly to this goal have not been systematically specified. The purpose of this study, therefore, was to identify aspects of educational programs that can prepare NGNs to transition into their new role as RNs. Specifically, this study examined the relationships between each of four educational factors (health science courses in undergraduate education; clinical experience in undergraduate education; orientation/training provided by the employing hospital; preceptorship after graduation) and NGNs' self-efficacy (confidence) for professional competencies. NGNs were identified as nurses who graduated within the last 12 months.

Theory of Self-Efficacy

Researchers within the fields of clinical health sciences and psychology have utilized Bandura's theory of self-efficacy to measure an individual's perception of his or her ability to make complex decisions (Bandura & Wood, 1989); perform nursing tasks in a clinical setting (Clark, Owen, & Tholcken, 2004; Ford-Gilboe, Laschinger, Laforet-Fliesser, Ward-Griffin, & Foran, 1997); improve rehabilitation (Gage & Polatajko, 1994; Gortner & Jenkins, 1990), and transition successfully from school to work (Pinquart, Juang, & Silbereisen, 2003). The core tenet of self-efficacy theory is that a person's behaviours and ability to execute a given task are dependent on the individual's perception of his or her abilities (Maddux, 1995). Schunk (1996) has shown that students, who lack general knowledge, skills, or ability, will not succeed in becoming more

competent in specified performances. However, when such knowledge exists, students can extend their knowledge to more abstract situations (Bandura, 1979), and will work harder to overcome challenges they encounter (Schunk).

Perceived self-efficacy has a great influence on one's ability to perform successfully (Bandura, 1986). This perception is affected by four sources of information: previous performance, vicarious experiences, verbal persuasion, and emotional arousal (Maddux & Stanley, 1986). *Previous performance* is the success or failure in accomplishing the task that affects expectations for future successful performance. Thus, the perception of one's ability to accomplish a task will change over time as new information and experience is acquired (Gist & Mitchell, 1992). *Vicarious experiences* are accessed when an individual visually observes a modelled action (Schunk, 1986). Attribute similarity, perceived competence, number of models, strategies modelled, information on task demands, and outcomes of models' actions are aspects of various experiences which influence self-efficacy. How a source is perceived affects how strongly *verbal persuasion* influences self-efficacy (Maddux, 1995). Expertness, trustworthiness, and attractiveness of the source, are a few factors that determine the way in which the source is perceived (Maddux & Stanley, 1986). *Emotional arousal* influences self-efficacy when people associate their ability to perform a given task based on the emotions or physiological state they relate to that task. Thus, when people associate a negative emotional or physiological state with poor behavioural performance, self-efficacy will be negatively affected (Maddux & Stanley, 1986).

Literature Review

Nursing Students' Self-efficacy

Nursing students' self-efficacy has been widely examined (Babenko-Mould, Andrusyszyn, & Goldenberg, 2004; Clark et al., 2004; Ford-Gilboe et al., 1997; Goldenberg, Andrusyszyn, & Iwasiw, 2005; Goldenberg, Iwasiw, & MacMaster, 1997; Laschinger & Tresolini, 1999; Lim, Downie, & Nathan, 2004; Rosen, 2000). Researchers have evaluated the effectiveness of various methods of knowledge acquisition, and the impact on students' self-efficacy for specific performances, such as health teaching and nursing care to a specific client population (Clark, et al.; Ford-Gilboe, et al.; Goldenberg, Andrusyszyn, et al.; Laschinger & Tresolini; Lim, et al.; Rosen).

In a longitudinal study of self-efficacy for health teaching during a clinical practicum, students rated role playing as having the least effect on self-efficacy (Ford-Gilboe et al., 1997). In contrast, Goldenberg et al. (2005) reported that role playing significantly increased self-efficacy scores of 22 third-year baccalaureate nursing students who completed a self-efficacy questionnaire before and after role playing was used to practice health teaching in classroom simulations (Goldenberg et al.).

Acquisition of knowledge from the classroom, application of knowledge in the clinical setting, and observation of other role models, are encouraged throughout undergraduate nursing education. It is these previous performances and vicarious experiences that influence students' perceived self-efficacy to perform nursing skills (Babenko-Mould et al., 2004; Ford-Gilboe et al., 1997; Laschinger & Tresolini, 1999; Lim et al., 2004; Rosen, 2000). These findings support the theory that previous performance and vicarious experience are the two sources which greatly influence

perceived self-efficacy for an intended behaviour (Bandura & Woods, 1989; Maddux & Stanley, 1986).

New Graduates as Novice and Advanced Beginners

Once nursing students graduate and become RNs, role expectations are altered, and NGNs assume greater responsibilities. NGNs entering a clinical setting are novices, because they may have little or no experience with the environment in which they are expected to perform (Benner, 2001). As such, their actions are directed by objective explanations not bound by context. Objective explanations and rules govern the way novice nurses work, limiting their ability to decipher which tasks are most pertinent to perform in a real situation (Benner; O'Neill, Dluhy, & Chin, 2005). NGNs can also be considered advanced beginners because of their previous, though limited, clinical experience (Benner); they have the ability to recognize aspects of a situation, but still require help from more experienced RNs with prioritization, and ensuring patient needs are met (Benner).

New Graduate Nurse Experiences

Dichotomy. Several studies have examined the experience of NGNs as they transition to the role of professional nurse (Casey et al., 2004; Delaney, 2003; Duchscher, 2001; Gerrish, 2000; Godinez et al., 1999; Oermann & Garvin, 2002; Roberts et al., 2004; Thomka, 2001; Waite, 2004). One of the common themes identified by new graduates as contributing to their stressful experiences is the dichotomy between nursing in the context of undergraduate nursing education, and in the context of novice nurse or advanced beginner (Delaney; Duchscher; Gerrish; Godinez et al.; Kyrkjebø & Hage, 2005).

Systems issues. Newly registered nurses also identified systems issues they had not noticed as student nurses, as another source of stress. Shortages of nurses placed an unexpected burden on NGNs; they were expected to assume responsibilities for which they felt unprepared (Oermann & Garvin, 2002). Working within the health care organization, and with other health care professionals was another source of stress cited by NGNs (Casey, et al., 2004; Delaney, 2003; Duchscher, 2001; Ebright, Urden, Patterson, & Chalko, 2004; Gerrish, 2000; Godinez, et al., 1999). Role stress has been linked to role overload (Chang & Hancock, 2003) and job satisfaction (Chang & Hancock; Delaney, 2003; Gerrish, 2000).

Lack of preparation. NGNs expressed frustration with the lack of clinical preparation they felt they received in their undergraduate education, particularly when managing a full patient load (Delaney, 2003; Duchscher, 2001; Gerrish, 2000). They also reported dissatisfaction with the educational preparation they received in their biological science courses as students (Gerrish). This difference in emphasis when nursing in the role of a student, and nursing in the role of a new graduate professional nurse, also contributed to the stress experienced after graduation (Casey et al., 2004; Chang & Hancock, 2003; Delaney; Duchscher; Gerrish; Oermann & Garvin, 2002).

Preceptorship. Nurse researchers have presented conflicting views on the effectiveness of preceptorship during the transition of NGNs. While nursing in the real world contributed to stress experienced by NGNs, preceptorship has been identified in some studies as helping (Oermann & Garvin, 2002; Waite, 2004), and sometimes hindering (Casey et al., 2004) the transition. NGNs also expressed frustration with the absence of a formal preceptorship experience (Duchscher, 2001). However, the influence

of preceptors on NGNs depended on preceptors' level of experience and consistency (Delaney, 2003). Inconsistency hindered NGNs from becoming more proficient with their skills (Casey et al.). Further, feedback from preceptors affected NGNs. They felt frustrated when they received negative feedback, and a lack of empathy and support from preceptors (Casey et al.).

The stress NGNs experience once they become RNs is unquestionable. High levels of stress have been linked to role overload and low job satisfaction (Chang & Hancock, 2003; Delaney, 2003; Gerrish, 2000). However, with the impending nursing shortage, NGNs are considered the solution to the problem. Therefore, nurse educators and administrators must consider ways to recruit and retain them.

Educational Factors

Review of studies examining NGNs' experiences has raised concern regarding the adequacy of preparation to assume the role of professional nurse. Preparation begins in their undergraduate education; as nursing students progress through their clinical practicum, experiences should prepare them for their role as professional nurse, yet many researchers cite the dichotomy new graduates feel between nursing school and the 'real world' (Delaney, 2003; Duchscher, 2001; Gerrish, 2000; Godinez et al., 1999; Waite, 2004). Four educational factors that may influence the transition from student nurse to NGN are biological sciences, clinical practicum, orientation/training, and preceptorship as a RN.

Biological science courses. Within undergraduate baccalaureate nursing education, biological science courses consist of anatomy and physiology, microbiology, pathophysiology, and pharmacology. Early in a nursing student's academic career, these

subjects may be taught without a clinical context. Studies of undergraduate nursing students have found that although emphasis was placed on their health science courses, students had little confidence in their ability to utilize scientific theoretical knowledge during their clinical practicum (Clancy, McVicar, & Bird, 2000; Friedel & Treagust, 2005; Jordan, Davies, & Green, 1999). Trnobranski (1993) believes that in order for nurses to deliver safe, high-quality patient care, nurses should be comfortable using knowledge they gain from these science courses.

Although RNs believe knowledge of the biological sciences is important when providing patient care, the perceived lack of preparation they received during their education has lead to decreased confidence in their ability to incorporate it into their care. Nurse educators' self-efficacy ($M = 3.70$) in the biological sciences was slightly higher than that of their nursing students ($M = 3.47$), however the difference in their mean scores was not statistically significant ($p = 0.085$) (Friedel & Treagust, 2005). If the perceived self-efficacy and confidence of nurse educators to integrate scientific knowledge into practice is not effectually higher than the students they are teaching, it is difficult to expect students to have been assisted to confidently incorporate it into their nursing care.

Similarly, experienced RNs lacked confidence in their ability to incorporate knowledge of biological science into nursing care (Clancy et al., 2000; Friedel & Treagust, 2005; King, 2004). When confidence and knowledge are weak, ability to perform also diminishes (Bandura, 1986; Schunk, 1996). NGNs rely on the experience (vicarious experience) and knowledge of seasoned nurses (Benner, 2001) by observing more experienced nurses in action. Although the ability of NGNs to incorporate knowledge of biological science into nursing care has not been studied, extant studies

suggest that RNs are having difficulty applying scientific knowledge into practice, and that nurse educators and RNs are having difficulty teaching nursing students to do the same.

Clinical practicum. Previous performance is cited as having the most influence on perceived self-efficacy (Maddux & Stanley, 1986). Novice nurses gain experience with nursing skills through clinical placements during their undergraduate education. Clinical practicum has been empirically shown to prepare nursing students for their role as a RN (Babenko-Mould et al., 2004). However, nursing as a student is different than as a professional nurse (Delaney, 2003; Duchscher, 2001; Godinez et al., 1999). While clinical practicum has been found to be an ideal place for students to bridge theory and practice (Corlett, Palfreyman, Staines, & Marr, 2003; Papp, Markkanen, & Bonsdorff, 2002), as well as to increase perceived self-efficacy (Ford-Gilboe et al., 1997; Laschinger & Tresolini, 1999; Rosen, 2000), Tiwari et al. (2005) found clinical practicum to be limiting. The task of performing assessments was so strongly emphasized in this study, students became focused on rote memorization, rendering clinical practicum less effective when compared to a study which focused on providing a supportive CP learning environment which also complemented in-class nursing theory (Papp et al.).

Theoretically, experience gained through clinical practicum is ideal for increasing self-efficacy, because of the opportunity students have to practice the skills they learn, as well as incorporate theoretical knowledge they gain in class. However, when performance during the clinical experience is limited to specific tasks, students are prevented from exploring other learning opportunities. Limiting learning opportunities may have a negative effect on self-efficacy (Gist & Mitchell, 1992). As a result of the

limited clinical experience of NGNs, their actions are guided by rules provided by seasoned nurses; these rules and limited knowledge subsequently restrict NGNs' ability to problem-solve when complications arise (Bandura, 1979; Benner, 2001).

Orientation/Training. Saks (1995) studied newly hired entry-level accountants (*n* = 154) from ten firms, and linked training (training was not operationalized, and could not be distinguished between orientation to the organization, and working closely with current employees) to post-training self-efficacy. Early training was positively correlated to post-training self-efficacy, which was also found to be positively correlated to ability to cope, job satisfaction, and commitment. The amount of training was positively related to the helpfulness of the training, job satisfaction, commitment to the organization and profession, ability to cope, and job performance (Saks, 1996).

In contrast, the amount of training was negatively related to intention to quit the organization and the profession. Saks (1996) stressed that it is not enough for organizations to simply make training available, but that the newly hired entry-level employees must feel the training is helpful. Length of training was found to be particularly helpful for the transition of NGNs (Thomka, 2001), and was positively correlated to nurses' beliefs in their ability to perform, and their perceived self-efficacy (Bartlett, 2001).

Preceptorship. While 'training' was never formally operationalized, preceptorship in nursing could be considered a form of training. Preceptorship is defined as the supportive teaching-learning relationship between a competent, experienced RN, and a newly qualified nurse (Kaviani & Stillwell, 2000). Researchers examining the transition from student nurse to NGN concluded that preceptorship would assist with socialization

into the role of professional nurse (Duchscher, 2001; Oermann & Garvin, 2002). Although preceptorship was identified as a strategy to improve transition, few studies evaluated its effectiveness (Almada, Carafoli, Flattery, French, & McNamara, 2004; Goldenberg et al., 1997; Hardyman & Hickey, 2001; Kaviani & Stillwell; Smith & Chalker, 2005).

Two studies were conducted to evaluate the effectiveness of preceptorship on the clinical performance of NGNs, however little inferential data analysis was offered, limiting the generalizability of these studies (Hardyman & Hickey, 2001; Smith & Chalker, 2005). In one study, presence or absence of a preceptorship made little difference in perception of NGN transition (Smith and Chalker). However, NGNs in another study felt receiving constructive feedback from preceptors regarding their clinical skills was most important, followed by learning new clinical skills from their preceptors (Hardyman & Hickey).

In a study to examine the effectiveness of preceptorship on self-efficacy, Goldenberg et al. (1997) found that preceptorship significantly increased perceived self-efficacy of senior baccalaureate nursing students. It was suggested that preceptorship provided nursing students with exposure to the four sources of information that influence self-efficacy.

Many studies have even concluded that preceptorship is the answer to decreasing the stress and anxiety these NGNs feel (Oermann & Garvin, 2002; Waite, 2004). However, stronger studies are required to evaluate how effective preceptorship is for the transition of NGNs. Additionally, the effectiveness of other forms of training or orientation to the organization should also be considered to evaluate the generalizability

and applicability of studies on training, self-efficacy, and organizational commitment (Saks, 1995; 1996).

Summary

Use of Bandura's theory of self-efficacy has been helpful in many areas of health and human resources. Benner's model of the five stages of nursing, presents an interesting medium to analyze nursing students' transition to NGNs. It is suggested that the four educational factors discussed influence the sources that mediate self-efficacy. Biological science courses provide nursing students with knowledge, which partially influences their performance. This knowledge should be applied during clinical practicum, and integrated into practice as a professional nurse. Clinical practicum offers students the opportunity to incorporate knowledge with their nursing skills. Academic self-efficacy belief has been linked to successful transition from school to work, and an increase in job satisfaction (Pinquart et al., 2002). Self-efficacy of nursing students is affected by their previous performances, as well as vicarious experiences and verbal persuasion from peers and experienced nursing staff. Orientation and preceptorship should help NGNs incorporate knowledge, skills, and ability, into their practice, thereby influencing self-efficacy through previous performance, vicarious experience, and verbal persuasion.

Exploring which of these four educational factors (biological science, clinical practicum, orientation, and preceptorship) has the most influence on NGNs' self-efficacy for clinical performance, will assist nurse educators and administrators in determining how best to ease the transition. Each of the educational factors, appears to determine how or when NGNs access sources of information which influence self-efficacy. Further,

review of the literature suggests that NGNs access different sources of self-efficacy, depending on where they are in their early nursing career, and what their past experiences have been.

Bandura's theory of self-efficacy has been utilized in several studies exploring behavioural change and task performance. Education of undergraduate nursing students has also used the theory of self-efficacy extensively. However, few studies have examined NGNs' perceived self-efficacy for any specified behaviour or task. Researchers have investigated the experiences of NGNs as they assume the role of professional nurses. Findings reveal that NGNs feel unprepared for their new role. However, there have been no studies to date to explore what aspects of education influence NGNs' ability to transition to the role of RN. This study was designed to address this gap in the literature.

Research Hypothesis, Research Questions, and Definitions

Research Hypothesis

One hypothesis was posited: post-registration preceptorship most positively influences the self-efficacy of new graduate nurses for professional competencies when compared to biological science courses, clinical practicum, and organizational training and orientation.

Research Questions

The research questions were:

1. What is the relationship between respondent characteristics and self-efficacy scores for professional competencies?

2. Is there a statistically significant difference in self-efficacy scores of new graduate nurses with a preceptorship compared to new graduate nurses without a preceptorship?

Definitions

In this study, a *preceptor* is defined as an experienced RN who teaches and supervises NGNs within a formal relationship (Billay & Yonge, 2004). *Preceptorship* is defined as a relationship between an experienced RN and a newly qualified nurse for the purposes of teaching and learning (College of Nurses of Ontario [CNO], 2005; Kaviani & Stillwell, 2000).

Method

Design and Sample

A cross-sectional, non-experimental survey design was used. A cohort of NGNs across Ontario was contacted to complete surveys. A list of eligible participants was obtained from the provincial nursing regulatory body in Ontario. When renewing their nursing licence, these participants had given consent to be contacted for research purposes. The inclusion criteria for this study were RNs who: graduated from a Canadian generic BScN/BN program in the previous 12 months, and were employed full- or part-time by a hospital in their first job as a registered nurse. From the 339 potential participants, 166 (49%) questionnaires were returned, and 152 (45%) were useable questionnaires.

Instrument

A researcher-designed, structured, self-report questionnaire was developed, using a 6-point Likert scale. The questionnaire, *New Graduate Nurses' Self-Efficacy for*

Professional Competencies Questionnaire (SEPC-NGN) (see Appendix A), has two parts. The first section contained five self-efficacy subscales – one for confidence with professional competencies (PC subscale), and one for each educational factor (biological science courses subscale [BSC]; clinical practicum subscale [CP]; organizational training and orientation subscale [OTO], and post-registration preceptorship subscale [PRP]). Participants were asked to assess their confidence to perform the professional competencies and then to rate how confident they felt each educational factor assisted them to perform the specified competencies. The competencies (items) in this tool were designed to focus on the challenging issues NGNs experienced during their transition identified in existing studies. Items were scored on a 6-point Likert scale, with '0' indicating that the item was *not applicable*, '1' indicating that the respondent was *not at all confident* in performing the skill, and '5' indicating that the respondent was *very confident*. There were 20 items in each of the five subscales, for a total of 100 items in the questionnaire. The second section asked for demographic data such as age, length of employment, employment status, and type of unit. Additionally, participants were asked to indicate whether or not they had a preceptor, as defined for the purposes of the study.

Content validity was checked by four doctorally prepared nurse academics familiar with the theory of self-efficacy, and five graduate students in nursing. The questionnaire was evaluated for content validity, clarity of the directions for completion of the questionnaire, clarity of the questions, comprehensibility of the directions and questions for the questionnaire, ease of response, and the time it took to complete the questionnaire.

Exploratory factor analysis was performed on the twenty items of the professional competency subscale of the SEPC-NGN, using the 152 responses obtained by the NGNs. Factors with eigenvalues greater than 1.0 were extracted, and rotated using the varimax method. Three components were obtained from the twenty items of the subscale. *Prevention of health problems, provision of care specific to individual client needs*, and *recognition of scope of practice* were the three factors derived from the twenty items through exploratory factor analysis. Cronbach's alpha for each subscale were: PC subscale = .92; BSC subscale = .95; CP subscale = .96; OTO subscale = .97; PRP subscale = .97. In this study, the PC subscale was used to assess NGNs' overall confidence with their clinical performance as a RN.

Data Collection and Analysis

Ethical approval was obtained from the researcher's university (see Appendix B); 339 potential participants were mailed a letter of information (see Appendix C), an alphanumeric coded questionnaire, and a researcher-addressed, stamped envelope. The Total Design Method (Dillman, 1978) was used to maximize participant response, and a follow-up letter (see Appendix D) was sent to non-respondents two weeks later. A second follow-up letter (see Appendix E), alphanumeric coded questionnaire, and researcher-addressed, stamped envelope were sent to non-respondents four weeks after the initial mailing. Return of completed questionnaires constituted consent.

Statistical Package for the Social Sciences (SPSS) was used to analyze the data. Descriptive analysis of demographic data was used to assess trends in participant characteristics. Stepwise regression analysis was performed to test the hypothesis. To answer the research questions, Pearson product-moment correlation, stepwise regression

analysis, and *t*-tests for independent means were performed. An alpha level of .05 was used for all statistical tests.

Results

Sample Description

Most participants were female (94%, $n = 141$), with a mean age of 25.9 years ($SD = 5.09$). Participants had been employed for an average of 36 weeks ($SD = 8.4$) at the time of data collection. Approximately two-thirds were employed full time (65%, n = 99), and 83% indicated that their employment status was their choice. Participants who indicated part-time status worked an average of 35.7 hours per week (range: 12 to 84 hours per week), which was similar to full-time hours. Participants were also asked to indicate the type of unit on which they worked. Unit types were grouped into four areas: Medical (Medical [$n = 33$], Cardiology [$n = 8$], Oncology [$n = 10$]); Surgical ($n = 47$); Acute/Critical Care (Critical/Intensive Care [$n = 16$], Emergency [$n = 7$]); Maternal-Child (Paediatrics [$n = 6$], Labour and Delivery/Post-partum [$n = 15$]), and Mental Health ($n = 4$).

Test of Hypothesis

The means, standard deviations, and correlations for the subscales of the SEPC-NGN are displayed in Table 1. The hypothesis was first tested by performing a correlational analysis. Pearson's product-moment correlation was conducted to first determine that PRP ($r = .57$; $p < .01$), followed by CP ($r = .51$; $p < .01$), most positively influenced PC (NGNs' self-efficacy for professional competencies). Although all of the educational factors had statistically significant positive correlations, PRP and CP were the two factors with a moderate correlation (> .50).

Table 1

Means (*SD*) and Correlation of Professional Competency to Educational Factors

Subscales	Mean† (*SD*)	Correlation to Professional Competency
Professional Competency (PC)	3.65 (0.47)	1.00
Biological Science Courses (BSC)	3.01 (0.67)	.480**
Clinical Practicum (CP)	3.56 (0.74)	.512**
Organizational Training/Orientation (OTO)	3.32 (0.90)	.347**
Post-Registration Preceptorship (PRP)	3.87 (0.71)	.566**

† range: 1 = not at all confident, 5 = very confident

* $p < .01$, two-tailed

Once a correlation between the educational factors and self-efficacy was confirmed, stepwise regression analysis was performed to test the hypothesis that post-registration preceptorship (PRP) most positively influences NGNs' self-efficacy for professional competencies. The educational factors were entered into SPSS in the order in which they would be encountered as nursing students, then as NGNs: BSC, CP, OTO, and PRP. Based on the output obtained through stepwise regression analysis in SPSS, BSC explained a small amount of variance ($R^2_{change} = .03$), however it was significant [$F(1, 135) = 7.23, p < .05$]. CP was the second most influential educational factor to influence the PC subscale. The increase in explained variance ($R^2_{change} = .12$) provided by the addition of CP to the regression was significant [$F(1, 136) = 27.13, p < .05$]. OTO was not significant in the regression analysis. Finally, PRP had the most influence on

NGNs' self-efficacy, as reflected by the most change in variance (30.9%) in the PC subscale ($R = .56$, $F(1, 137) = 61.36$, $p < .05$). The hypothesis was supported. PRP, CP, and BSC influenced NGNs' self-efficacy,

Research Questions

What is the relationship between respondent characteristics and self-efficacy scores? Mean scores for the PC subscale were correlated with age and the number of weeks employed in the job. A weak but statistically significant correlation was found between mean PC scores and the number of weeks employed in the job ($r = .19$, $p < .05$); however, age was not related to PC scores. Other respondent characteristics which were examined, such as clinical practicum experience, employment status, and gender, can be found in Table 2. Although approximately 56% of participants indicated that they had previous experience on their unit through their clinical practicum, there was no significant difference in mean PC scores between respondents who had previous CP experience on the units where they were employed ($M = 3.67$, $SD = .47$), and those who did not ($M = 3.62$, $SD = .47$), ($t = .57$, $p > .05$). Also, those employed full-time generally rated themselves significantly higher ($M = 3.72$, $SD = .44$) in the general self-efficacy subscale (professional competency [PC]) than those who were employed part-time ($M = 3.5$, $SD = .49$), ($t = 2.81$, $p < .05$).

The influence of gender on PC scores was also analyzed. Although there was an obvious imbalance between male (6%) and female participants (94%), t-test for independent scores were performed. Male participants had a statistically significant higher mean score in the PC subscale ($M = 3.85$, $SD = .27$) than female participants ($M = 3.63$, $SD = .48$), ($t = -2.17$, $p = .05$). The age of participants did not influence PC scores.

Table 2

Comparison of Respondent Characteristics and Mean Self-Efficacy Scores

	Clinical Practicum Experience		Employment Status		Gender	
	On unit	Not on unit	Full-time	Part-time	Male	Female
n	88	64	99	53	9	143
M	3.67	3.62	3.72	3.5	3.85	3.63
SD	.47	.47	.44	.49	.27	.48
p	>.05		<.05		.05	

Differences in PC subscale scores were examined according to where participants were employed. While there were no statistically significant differences in the means according to unit, it is interesting to note that those employed in acute/critical care areas had the highest mean scores in 3 of 5 subscales (PCmean = 3.80; OTOmean = 3.50; PRPmean = 3.99). On average, NGNs working in acute/critical care had a lengthier preceptorship (M = 7.29 weeks) than NGNs working in other units (M = 4.96 weeks), (t = 1.63, $p > .05$).

Is there a statistically significant difference in self-efficacy scores of new graduate nurses with a preceptorship compared to new graduate nurses without a preceptorship? The influence of presence or absence of PRP on mean PC scores was further explored to examine the impact of PRP on self-efficacy for professional competencies. The majority of participants had at least one preceptor (n = 138). Those who had PRP reported slightly lower PC scores (M = 3.64, SD = .47) than those who did not have a preceptor (M = 3.72, SD = .44), (t = -.71, $p > .05$). The number of preceptors also did not appear to have a large influence on mean PC scores; those who had one

consistent preceptor had slightly higher scores ($M = 3.68$, $SD = .46$) than those who had four or more preceptors ($M = 3.59$, $SD = .60$). Length of preceptorship was also examined to determine its influence on NGNs' confidence. Participants who were preceptored for 1-4 weeks had significantly lower scores ($M = 3.57$, $SD = .47$) than those who were preceptored for more than 4 weeks ($M = 3.75$, $SD = .45$), ($t = -2.19$, $p < .05$).

Discussion

The results from this study add to the body of knowledge regarding self-efficacy and its role in nursing education. These findings appear to be consistent with Bandura's theory that perceived self-efficacy will affect one's ability to perform successfully (Bandura, 1986). Previous performance and vicarious experience, two sources which have been shown to greatly influence self-efficacy (Maddux & Stanley, 1986; Schunk, 1996), are deeply entrenched in PRP and CP. While all four educational factors had a significant and positive correlation to NGNs' self-efficacy, these two factors which enabled practice and performance, had the highest correlation. The variance explained by the addition of OTO was not significant in the regression analysis, but was significant in the correlation. Preceptorship for NGNs during the transition has been qualitatively studied; however its impact appeared to vary, based on the characteristics of the preceptorship experience (Duchscher, 2001; Oermann & Garvin, 2002). The characteristics of PRP were not specifically examined in this study, but the influence of PRP on NGNs' confidence does contribute to the body of literature regarding its importance during the transition to RN.

Although the results indicated that PRP most positively influences NGN self-efficacy, there were no significant differences between those who had a preceptor, and

those who did not. This was similar to the findings of a study by Smith and Chalker (2005). The effectiveness of PRP as perceived by each participant was not measured, and this information could have helped to explain the lack of difference in mean PC scores between those with preceptors and those without. However, upon further investigation into the characteristics of PRP, PC mean scores were significantly influenced when the duration of preceptorship extended beyond 4 weeks. Although training and preceptorship were defined as two separate concepts in this study, length of training has been associated with improved transitional experiences for NGNs (Thomka, 2001), and their perceived self-efficacy and ability to perform (Bartlett, 2001).

Other characteristics of PRP that have been briefly examined in qualitative studies involving nursing students are the consistency of preceptors, and quality of verbal persuasion (Casey et al., 2004; Delaney, 2003; Duchscher, 2001; Oermann & Garvin, 2002; Waite, 2004). Verbal persuasion within the preceptorship experience, quality, and effectiveness of the PRP as perceived by the NGNs were not measured in this study; however, NGNs who had one consistent preceptor did report higher mean PC scores than those who had more than one preceptor. Lack of consistency in preceptors has been shown to encumber the process of acquiring necessary skills (Delaney, 2003). Results of this study cannot support Delaney's conclusion; however, qualities of a preceptorship should be further investigated to understand what aspects of this relationship contributes to positive outcomes.

Clinical practicum was the second educational factor to influence NGN self-efficacy. It allows students to practice their skills and incorporate their knowledge in a safe environment; however, it has also been recognized that "real-life" nursing is

different (Kramer, 1974). Researchers studying the effectiveness of CP on nursing students' self-efficacy (Ford-Gilboe et al., 1997; Laschinger & Tresolini, 1999; Rosen, 2000) have concluded that it is beneficial for increasing confidence. As such, increase in confidence levels with previously performed nursing skills should therefore benefit NGNs. However, although CP was one of the factors to influence self-efficacy, there was no difference in PC mean scores for those with and without previous CP experience on the unit where they were employed.

Nursing skills are important to acquire and develop during undergraduate education. In a qualitative study of 70 third-year baccalaureate nursing students, participants recognized that a broad range of nursing skills were important for future employment (Hartigan-Rogers, Cobbett, Amirault, & Muise-Davis, 2007). Nursing students placed high importance on acquiring all skills related to nursing, such as psychomotor, cognitive, and affective skills, from their CP. Thus, CP can assist nursing students to acquire general nursing tasks and skills, but perhaps fails to prepare students to understand the role nurses actually play in a clinical setting. In this study, there was no difference between those who had CP experience on the unit where they were employed and those who did not, i.e., the CP location did not influence their overall confidence, suggesting that other aspects of the CP experience are more important in influencing confidence that the actual location of the CP.

The role expectations of nurses in an acute or critical care setting are arguably different than the expectations of nurses employed in a less intense environment. Further, the employment of NGNs in acute or critical care settings has traditionally been viewed as taboo. Due to the looming nursing shortage, more hospitals are considering NGNs as

an employment source to fill the job vacancies in these areas (Kleinpell, 2000). The intense and dynamic environments of departments such as the emergency room or intensive care unit require quick decision making and critical thinking. In the United States, NGNs in critical care are trained for an average of 11.4 weeks, whereas those with critical care experience were trained for an average of 6.4 weeks (Kirchhoff & Dahl, 2006). This is a significant difference, when compared to the length of training and orientation ranging from 2 to 8 weeks provided to NGNs starting on the wards (Almada et al., 2004; Butler & Hardin-Pierce, 2005; Ellerton & Gregor, 2003; Godinez et al., 1999; Thomka, 2001). The critical care and emergency room NGNs in this study also reported longer preceptorship than those employed on the ward. Perhaps the slight increase in self-efficacy scores in all subscales for NGNs employed in acute or critical care settings, though not statistically significant, could be attributed to the length of preceptorship or orientation and the educational preparation provided to these new nurses from the organization and preceptor.

Demographic information for the cohort of NGNs in Ontario for the year 2006 were not available from the CNO. However, the participants in this study are representative when compared to the cohort of new general class members for 2005 (CNO, 2006). Recently, diploma nursing programs were no longer available; all schools of nursing in Ontario were delivering baccalaureate nursing programs. As such, it is important to note that the results of this study are representative of NGNs who have graduated with a baccalaureate degree in nursing.

The percentage of NGNs with full-time employment was unavailable for NGNs from 2005. In this study, 65% were employed full-time, and 35% were employed part-

time. Of those who were employed part-time, 57% reported that their employment status was their choice, suggesting that not all NGNs necessarily seek full-time employment.

Overall confidence levels of NGNs who were employed full-time were higher than those who were employed part-time. The difference between full-time and part-time employment for NGNs must be further explored to identify why this discrepancy in confidence levels exist, especially when the NGNs employed part-time reported working similar hours to NGNs employed full-time. Although this study did not directly measure this difference, this divergence could be attributed to the consistency of time spent in the clinical setting, particularly in the first 3 months of employment which has been identified as the most important time during NGNs transition. The length of time employed on the unit was also considered. A small but positive correlation between the number of weeks employed on the unit and PC scores can be expected because over time NGNs are likely to gain greater confidence. The perception of their ability to accomplish a task will change over time, as new information and experience are acquired (Gist & Mitchell, 1992). These results provide support to the notion that NGNs who are employed part-time require greater support for a longer period of time because they spend less time in the clinical setting than those who are employed full-time.

The items in the SEPC-NGN were created by merging themes, which NGNs identified as areas in nursing practice with which they struggled. Further, the CNO is moving away from task-based competencies; the items in the SEPC-NGN were adapted to reflect these changes. Results of the exploratory factor analysis of the SEPC-NGN captured aspects of nursing practice, and the role and function of nurses within the health

care system. These professional competencies (items) are important to the development of NGNs as they transition to registered nurse.

In summary, PRP positively influenced NGNs' self-efficacy when the preceptorship was consistent, and lasted longer than 4 weeks. CP influenced NGNs' self-efficacy; however, there was no difference between participants who had previous CP experience on the unit where they were employed and those who did not have this experience. This implies that the location of their CP was not important in enhancing confidence in NGNs. Further, NGNs employed full-time had greater confidence than those who are employed part-time. The basic qualities of PRP and CP support the notion that previous performance and vicarious experience greatly influence self-efficacy (Bandura, 1986; Maddux & Stanley, 1986). Additionally, the characteristics such as length and consistency of PRP, and quality and experiences during CP as perceived by NGNs, influence the effectiveness of these two educational factors on NGNs' ability to successfully transition into the role of a RN. It is Bandura's (1979) belief that if one is provided with the necessary knowledge, this knowledge can be accessed in more complex situations. CP can prepare nursing students with certain nursing skills, and PRP further extends this existing knowledge so that NGNs can operate as a RN in the context of the real world.

Limitations

The results of this study must be interpreted cautiously because the SEPC-NGN was newly developed for this study; it was not pilot-tested on NGNs prior to its use in this study, and the items in the questionnaire were derived from studies focusing on NGN transition and CNO's entry to practice competencies (CNO, 2004). Further psychometric

testing the SEPC-NGN could result in refinement of the tool. The self-report, retrospective design, and length of the questionnaire also created some limitations. The Likert-scale could have encouraged central tendency, because a rating of '3 – somewhat confident' offered participants a chance to remain undecided about their level of confidence. The length and repetition of the questionnaire may have also contributed to the possibility that participants tired of answering the questionnaire carefully, and began to circle random answers.

The design of this study was aimed at obtaining a representative sample of NGNs across the province of Ontario. Based on the demographics, this might have been achieved. However, information about unit and hospital characteristics in which participants were employed, was not obtained. Resources differ, based on whether the hospital employing NGNs is a large, urban academic teaching hospital, or a rural community hospital. Measuring this difference would have added to this study.

Implications

These findings support the idea that student CP and PRP should be carefully planned to support a successful transition for NGNs. Specifically, nurse educators should ensure that CP provides nursing students with opportunities not only to observe nurses interact with various members of the health care team, patients, and their family members, but to practice psychomotor, cognitive, and affective skills that are routinely exercised by RNs (Hartigan-Rogers, 2007). The CP environment should be a positive one, where students feel safe and supported by their clinical instructors, and staff RNs on the units. This enables nursing students to access the two major sources which influence self-efficacy: previous performance and vicarious experience. Although verbal persuasion and

emotional arousal are less influential on self-efficacy, all four sources impact self-efficacy and should therefore be accessed whenever possible to optimize confidence levels.

Both nurse educators and nurse administrators need to recognize the value of PRP on NGN transition. Preceptorship has long been recognized as a beneficial aspect of undergraduate nursing education. However, it has not been studied closely for its benefits during the transition to RN. Post-registration preceptorship has been implemented for the vast majority of NGNs in Ontario, however a consistent and formalized approach to implementing it does not exist.

This study has shown that the length of PRP varies, and inconsistent preceptors affect NGN confidence with their role as a RN. It is imperative for nurse educators and administrators to recognize the benefits of a lengthier preceptorship and one consistent preceptor for NGNs. PRP programs should be designed to assist preceptors to recognize the needs of NGNs during their transition, particularly during the first few months of employment as a newly graduated RN. This program should be tailored to meet the role expectations of RNs within specific units, but should recognize the basic needs of NGNs transitioning into the role of RN. The financial costs of a PRP program should be supported and encouraged by nurse administrators to ensure its success. Nurse researchers should investigate qualities of PRP which successfully assist NGNs when they transition to the role of RN.

The employment of NGNs in acute or critical care units such as emergency or critical care are becoming more common, as the shortage of nurses place increasing pressures on hospitals to fill nursing vacancies. This study has shown that NGNs

employed in these settings can have high levels of self-efficacy when appropriate measures are in place to support their transition. Perhaps the most important intervention for nurse educators and administrators to consider, when assisting NGNs' transition into working in an acute or critical care setting, are the consistency and length PRP.

Conclusion

The results of this study is consistent with Bandura's theory of self-efficacy for NGNs as they transition to the role of RNs. Three of the four major educational factors within undergraduate nursing education and after graduation positively affect NGNs' confidence for their professional competencies. However, PRP and CP are the two most influential factors, suggesting that enriched programs for both factors could boost confidence levels, decrease anxiety and stress, and in congruence with Bandura's theory, might improve the retention rate of NGNs. This study was limited to measuring whether or not PRP and CP influenced confidence levels of NGNs. Further studies examining how and why these factors influence confidence levels are warranted.

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Part Three

Discussion

Bandura's theory of self-efficacy was used to explore the influence of four educational factors (biological science courses, clinical practicum, organizational training/orientation, and post-registration preceptorship) on new graduate nurses' (NGNs) self-efficacy. The proposed hypothesis that post-registration preceptorship (PRP) most positively influences NGNs' self-efficacy for their professional competencies was supported in this study. This was reflected in higher mean scores in the PRP subscale of the questionnaire, *New Graduate Nurse Self-Efficacy for Professional Competencies*. Results from further analysis of the characteristics of PRP are supportive of a lengthier preceptorship program with a consistent, experienced nurse who is able to provide a positive preceptorship experience, as perceived by the NGN. Clinical practicum (CP) was the second most influential educational factor to positively influence NGN self-efficacy. The characteristics of PRP and CP enable nursing students and NGNs to access the two most influential sources of self-efficacy: previous performance and vicarious experience (Maddux & Stanley, 1986; Schunk, 1996).

Preceptorship for NGNs has been identified by some researchers as a strategy to assist the transition to registered nurse (RN) (Casey, Fink, Krugman, & Propst, 2004; Delaney, 2003; Duchscher, 2001; Goldenberg, Iwasiw, & MacMaster, 1997; Oermann & Garvin, 2002; Waite, 2004). Other researchers have explored preceptorship directly (Billay & Yonge, 2004), and its impact on NGN transition to RN (Almada, Carafoli, Flattery, French, & McNamara, 2004; Hardyman & Hickey, 2001; Kaviani & Stillwell,

2000; Smith & Chalker, 2005). This study is the first to identify some characteristics of preceptorship which influence the confidence of NGNs as they transition to RNs.

Specifically, length of preceptorship, and consistency of the preceptors appeared to have a positive influence of NGNs' perception of their ability to accomplish nursing competencies. The NGNs in this study who were employed in acute or critical care areas received longer periods of preceptorship than those who were employed on other units. The self-efficacy scores of NGNs in acute or critical care areas were higher than the scores of NGNs employed in other areas. Thomka (2001) linked the length of training to improved transitional experiences for NGNs. Length of training was also shown to improve self-efficacy, and therefore ability to perform (Bartlett, 2001). In this study, NGNs with one consistent preceptor reported higher levels of self-efficacy than those with multiple preceptors. Although this was not a statistically significant finding, it is similar to the results of a qualitative study: inconsistency of preceptors hindered NGNs from acquiring the necessary skills of a RN (Delaney, 2003). Further research into specific qualities of preceptorship which assist or impede successful NGN transition to RN is warranted.

Clinical practicum, the second educational factor to influence NGN self-efficacy, has been shown to improve nursing students' self-efficacy (Ford-Gilboe, Laschinger, Laforet-Fliesser, Ward-Griffin, & Foran, 1997; Laschinger & Tresolini, 1999; Rosen, 2000). The ability of NGNs to utilize knowledge gained from CP as they transition to RN has not been studied, although several researchers have reported the dichotomy between nursing as a student, and nursing in the 'real world' (Delaney, 2003; Duchscher, 2001; Gerrish, 2000; Godinez, Schweiger, Gruver, & Ryan, 1999; Kramer, 1974; Kyrkjebø &

Hage, 2005). Clinical practicum offers nursing students the opportunity to practice certain nursing skills in a clinical setting; according to Bandura's theory, previous performance can be accessed as a source to influence their self-efficacy as a NGN. Participants in this study who had previous CP experience on the unit where they were employed did not differ in confidence levels from those who did not have CP experience where they were employed. This finding implies that the location of the CP is not an important factor in enhancing confidence in NGNs. Identifying the factors related to the CP experience that promote confidence in NGNs requires further research.

There was a positive correlation, albeit small, between the number of weeks employed on the unit, and participants' self-efficacy scores. From this finding, it seems that understanding the role and function of RNs can become easier over time, as new information and experience are acquired, as postulated by Gist & Mitchell (1992). Further, NGNs employed full-time had higher overall confidence levels than NGNs who were employed part-time, indicating that perhaps NGNs who are employed part-time will require longer periods of support because they spend less time in the clinical setting.

Implications

Based on the results of this study, the literature, and Bandura's theory, there are several implications for nurse educators, administrators, and researchers (see Figure 1). Nurse educators in an academic setting should encourage nursing students to utilize their CP experiences as an opportunity to examine the 'real life' nursing issues. The emphasis on acquiring psychomotor, cognitive, and affective skills are important during CP and should not be negated nor overlooked; however, the importance of bridging the gap between nursing as a student and nursing as a RN is also essential in facilitating the

transition to RN. This bridging might be facilitated by creating a CP program which enables students to acquire the necessary skills of a RN, as well as explore the pertinent

Post-registration Preceptorship

- Create a formalized preceptorship program at least four weeks in length for full-time new graduate nurses, and of greater length for part-time new graduate nurses;
- Train preceptors to ensure a positive experience for the new graduate nurse, which includes:
  - Principles of adult education;
  - Skills on delivering constructive feedback;
  - Knowledge regarding the educational needs of new graduate nurses (should include elements of nurses' roles) ;
- Assign one consistent preceptor to each new graduate nurse

Clinical Practicum (CP)

- Broaden focus to RN role, not limited only to tasks or skills
- Utilize CP experiences to simultaneously examine nursing issues
- Integrate trends and issues related to the nursing profession through CP

Researchers

- Explore the characteristics of PRP that facilitate the transition from new graduate nurse to registered nurse
- Explore how CP can be improved so that the dichotomy between nursing as a student and nursing as a real nurse does not exist, or is minimized

Figure 1. Implications for nurse educators, administrators, and researchers.

issues faced by nurses in the clinical setting.

Nurse educators and administrators in a hospital setting should consider a formal preceptorship program. Preceptors should be well trained to meet the needs of NGNs employed in any setting. To ensure a positive experience for NGNs, one consistent preceptor should be assigned, and that preceptor should be skilled in delivering constructive feedback. Feedback that is considered negative by NGNs has been shown to negatively impact the transition to RN (Casey et al., 2004). Further, since a PRP lasting greater than 4 weeks has been shown to make a significant difference in the confidence levels of NGNs in this study, PRP should be provided for a period of at least 4 weeks.

This study contributes to the nursing literature exploring the transition of NGN to RN. It raises questions regarding specific characteristics of PRP which help NGNs transition to RNs. More research should be conducted to explore what these characteristics are, which ones help and why, and which characteristics do not help. Nurse researchers and academic nurse educators should collaborate to explore how CP can be improved so that the dichotomy between nursing as a student and nursing in the 'real world' is minimized.

Conclusion

The turnover of NGNs has not been well documented in Canada, but in the United States, the reality is that 35% to 61% of NGNs leave their job, or the profession within four years of graduating (Sochalski, 2002). This is an unacceptable reality, and interventions to prevent a worsening nursing shortage should be planned. Although specific educational factors are in place to prepare NGNs for the reality of 'real world' nursing, several researchers have concluded that this is not enough. The dichotomy

between nursing as a student and nursing in the 'real world' has been concluded in several extant studies, yet there have been little documented interventions aimed at addressing this gap. This study is the first of its kind to evaluate the self-efficacy of NGNs during the transitional period to RN, and the first to evaluate specific educational factors and their impact on the transition. Further studies are warranted to address the questions stemming from the conclusions of this research, so that the problem of attrition of NGNs can be resolved.

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Appendix A

New Graduate Nurses' Self-Efficacy for Professional Competencies Questionnaire

New Graduate Nurses' Self-Efficacy for Professional Competencies Questionnaire

New Graduate Nurses' Self-Efficacy for Professional Competencies Questionnaire

Part I: Self-Efficacy

This part of the questionnaire asks you to rate your confidence in your ability to perform specified tasks. If you have not had experience with a particular competency, please circle '0', which indicates that the competency is 'Not Applicable' to you. Circling '1' will indicate that you are 'Not At All Confident' performing the competency, and circling '5' will indicate that you are 'Very Confident' performing the competency.

All five sections in this questionnaire contain twenty competencies (items). These twenty items are repeated for each section.

> *Section 1: Professional competency* – this portion of the questionnaire asks you to rate your overall confidence with the items in the questionnaire.

The following sections will ask you to rate how confident you feel each educational factor assisted you to perform the nursing competencies.

> *Section 2: Biological science courses* – these are courses you took in your undergraduate nursing school, such as anatomy, physiology, pharmacology, and microbiology;
>
> *Section 3: Clinical practicum* – these are the clinical experiences you have had in your undergraduate nursing school, with the supervision of a clinical instructor, tutor, or a staff registered nurse;
>
> *Section 4: Training and/or Orientation* – refers to an official training and/or orientation program provided to help you work in the hospital or on your unit. This may have been provided through a hospital-wide program and/or a clinical educator;
>
> *Section 5: Post-registration preceptorship* – this is defined as the supportive teaching-learning relationship between a competent, experienced RN, and a newly qualified nurse (Kaviani & Stillwell, 2000)
>
> > If you did not receive training/orientation, or preceptorship from your employer as defined above, please leave this section blank and proceed to part II (demographics) of this questionnaire.

PROFESSIONAL COMPETENCIES

Please indicate how confident you feel performing the following competencies by circling the appropriate number.

How confident are you that you can:	Not applicable	Not at all confident	Not very confident	Somewhat confident	Confident	Very confident
1) Collaborate with other health care practitioners regarding the care of your client(s)	0	1	2	3	4	5
2) Perform a thorough physical assessment of clients according to their individual needs	0	1	2	3	4	5
3) Perform a thorough holistic assessment of clients according to their individual needs	0	1	2	3	4	5
4) Integrate knowledge of pathophysiological concepts into the care of clients	0	1	2	3	4	5
5) Integrate knowledge of health promotion concepts into the care of clients	0	1	2	3	4	5
6) Provide individualized care to clients based on their: a) physical needs	0	1	2	3	4	5
b) psychosocial needs	0	1	2	3	4	5
c) cultural needs	0	1	2	3	4	5
7) Follow an established plan of care	0	1	2	3	4	5
8) Deviate from an established plan of care to meet the needs of the client	0	1	2	3	4	5
9) Anticipate potential client problems	0	1	2	3	4	5
10) Communicate these potential client problems to appropriate members of the health care team	0	1	2	3	4	5
11) Identify actual client problems as they arise	0	1	2	3	4	5
12) Communicate these actual client problems to appropriate members of the health care team	0	1	2	3	4	5
13) Intervene to prevent further health complications	0	1	2	3	4	5
14) Evaluate the effectiveness of your nursing interventions	0	1	2	3	4	5
15) Manage multiple nursing interventions simultaneously	0	1	2	3	4	5
16) Initiate changes in client care in the event of an acute change in status	0	1	2	3	4	5
17) Recognize limitations of own competence	0	1	2	3	4	5
18) Professionally challenge questionable orders made by other members of the health care team using sound rationale	0	1	2	3	4	5

BIOLOGICAL SCIENCE COURSES

Biological science courses are considered to be courses you took in your undergraduate nursing school, such as anatomy, physiology, pharmacology, and microbiology. Please indicate how confident you feel the **biological science courses** assisted you to perform the following competencies by circling the appropriate number.

How confident are you that your **biological science courses** assisted you to:	Not applicable	Not at all confident	Not very confident	Somewhat confident	Confident	Very confident
1) Collaborate with other health care practitioners regarding the care of your client(s)	0	1	2	3	4	5
2) Perform a thorough physical assessment of clients according to their individual needs	0	1	2	3	4	5
3) Perform a thorough holistic assessment of clients according to their individual needs	0	1	2	3	4	5
4) Integrate knowledge of pathophysiological concepts into the care of clients	0	1	2	3	4	5
5) Integrate knowledge of health promotion concepts into the care of clients	0	1	2	3	4	5
6) Provide individualized care to clients based on their: a) physical needs	0	1	2	3	4	5
b) psychosocial needs	0	1	2	3	4	5
c) cultural needs	0	1	2	3	4	5
7) Follow an established plan of care	0	1	2	3	4	5
8) Deviate from an established plan of care to meet the needs of the client	0	1	2	3	4	5
9) Anticipate potential client problems	0	1	2	3	4	5
10) Communicate these potential client problems to appropriate members of the health care team	0	1	2	3	4	5
11) Identify actual client problems as they arise	0	1	2	3	4	5
12) Communicate these actual client problems to appropriate members of the health care team	0	1	2	3	4	5
13) Intervene to prevent further health complications	0	1	2	3	4	5
14) Evaluate the effectiveness of your nursing interventions	0	1	2	3	4	5
15) Manage multiple nursing interventions simultaneously	0	1	2	3	4	5
16) Initiate changes in client care in the event of an acute change in status	0	1	2	3	4	5
17) Recognize limitations of own competence	0	1	2	3	4	5
18) Professionally challenge questionable orders made by other members of the health care team using sound rationale	0	1	2	3	4	5

CLINICAL PRACTICUM

Clinical practicum is considered to be the clinical experiences you have had in your undergraduate nursing school, with the supervision of a clinical instructor, tutor, or a staff registered nurse. Please indicate how confident you feel **clinical practicum** assisted you to perform the following competencies by circling the appropriate number.

How confident are you that your **clinical practicum** assisted you to:	Not applicable	Not at all confident	Not very confident	Somewhat confident	Confident	Very confident
1) Collaborate with other health care practitioners regarding the care of your client(s)	0	1	2	3	4	5
2) Perform a thorough physical assessment of clients according to their individual needs	0	1	2	3	4	5
3) Perform a thorough holistic assessment of clients according to their individual needs	0	1	2	3	4	5
4) Integrate knowledge of pathophysiological concepts into the care of clients	0	1	2	3	4	5
5) Integrate knowledge of health promotion concepts into the care of clients	0	1	2	3	4	5
6) Provide individualized care to clients based on their: a) physical needs	0	1	2	3	4	5
b) psychosocial needs	0	1	2	3	4	5
c) cultural needs	0	1	2	3	4	5
7) Follow an established plan of care	0	1	2	3	4	5
8) Deviate from an established plan of care to meet the needs of the client	0	1	2	3	4	5
9) Anticipate potential client problems	0	1	2	3	4	5
10) Communicate these potential client problems to appropriate members of the health care team	0	1	2	3	4	5
11) Identify actual client problems as they arise	0	1	2	3	4	5
12) Communicate these actual client problems to appropriate members of the health care team	0	1	2	3	4	5
13) Intervene to prevent further health complications	0	1	2	3	4	5
14) Evaluate the effectiveness of your nursing interventions	0	1	2	3	4	5
15) Manage multiple nursing interventions simultaneously	0	1	2	3	4	5
16) Initiate changes in client care in the event of an acute change in status	0	1	2	3	4	5
17) Recognize limitations of own competence	0	1	2	3	4	5
18) Professionally challenge questionable orders made by other members of the health care team using sound rationale	0	1	2	3	4	5

ORGANIZATIONAL TRAINING and/or ORIENTATION

Organizational training and/or orientation refers to an official training and/or orientation program provided to help you work in the hospital or on your unit. This may have been provided through a hospital-wide program and/or a clinical educator. Please indicate how confident you feel **organizational training and/or orientation** assisted you to perform the following competencies by circling the appropriate number.

How confident are you that your **organizational training/orientation** assisted you to:	Not applicable	Not at all confident	Not very confident	Somewhat confident	Confident	Very confident
1) Collaborate with other health care practitioners regarding the care of your client(s)	0	1	2	3	4	5
2) Perform a thorough physical assessment of clients according to their individual needs	0	1	2	3	4	5
3) Perform a thorough holistic assessment of clients according to their individual needs	0	1	2	3	4	5
4) Integrate knowledge of pathophysiological concepts into the care of clients	0	1	2	3	4	5
5) Integrate knowledge of health promotion concepts into the care of clients	0	1	2	3	4	5
6) Provide individualized care to clients based on their: a) physical needs	0	1	2	3	4	5
b) psychosocial needs	0	1	2	3	4	5
c) cultural needs	0	1	2	3	4	5
7) Follow an established plan of care	0	1	2	3	4	5
8) Deviate from an established plan of care to meet the needs of the client	0	1	2	3	4	5
9) Anticipate potential client problems	0	1	2	3	4	5
10) Communicate these potential client problems to appropriate members of the health care team	0	1	2	3	4	5
11) Identify actual client problems as they arise	0	1	2	3	4	5
12) Communicate these actual client problems to appropriate members of the health care team	0	1	2	3	4	5
13) Intervene to prevent further health complications	0	1	2	3	4	5
14) Evaluate the effectiveness of your nursing interventions	0	1	2	3	4	5
15) Manage multiple nursing interventions simultaneously	0	1	2	3	4	5
16) Initiate changes in client care in the event of an acute change in status	0	1	2	3	4	5
17) Recognize limitations of own competence	0	1	2	3	4	5
18) Professionally challenge questionable orders made by other members of the health care team using sound rationale	0	1	2	3	4	5

POST-REGISTRATION PRECEPTORSHIP

Post-registration preceptorship is defined as a one-to-one relationship with "a proficient or expert practitioner ... for a set period of time [for the purposes of] onsite supervision with clinical teaching and instruction" (College of Nurses of Ontario, 2005, p. 4). This preceptorship occurs after you have been hired by the hospital as a registered nurse. Please indicate how confident you feel **post-registration preceptorship** assisted you to perform the following competencies by circling the appropriate number.

If you did not receive training/orientation or preceptorship from your employer as defined above, please leave the questions pertaining to this section blank and proceed to the next part of the questionnaire.

How confident are you that your **post-registration preceptorship** assisted you to:	Not applicable	Not at all confident	Not very confident	Somewhat confident	Confident	Very confident
1) Collaborate with other health care practitioners regarding the care of your client(s)	0	1	2	3	4	5
2) Perform a thorough physical assessment of clients according to their individual needs	0	1	2	3	4	5
3) Perform a thorough holistic assessment of clients according to their individual needs	0	1	2	3	4	5
4) Integrate knowledge of pathophysiological concepts into the care of clients	0	1	2	3	4	5
5) Integrate knowledge of health promotion concepts into the care of clients	0	1	2	3	4	5
6) Provide individualized care to clients based on their: a) physical needs	0	1	2	3	4	5
b) psychosocial needs	0	1	2	3	4	5
c) cultural needs	0	1	2	3	4	5
7) Follow an established plan of care	0	1	2	3	4	5
8) Deviate from an established plan of care to meet the needs of the client	0	1	2	3	4	5
9) Anticipate potential client problems	0	1	2	3	4	5
10) Communicate these potential client problems to appropriate members of the health care team	0	1	2	3	4	5
11) Identify actual client problems as they arise	0	1	2	3	4	5
12) Communicate these actual client problems to appropriate members of the health care team	0	1	2	3	4	5
13) Intervene to prevent further health complications	0	1	2	3	4	5
14) Evaluate the effectiveness of your nursing interventions	0	1	2	3	4	5
15) Manage multiple nursing interventions simultaneously	0	1	2	3	4	5

How confident are you that your **post-registration preceptorship** assisted you to:	Not applicable	Not at all confident	Not very confident	Somewhat confident	Confident	Very confident
16) Initiate changes in client care in the event of an acute change in status	0	1	2	3	4	5
17) Recognize limitations of own competence	0	1	2	3	4	5
18) Professionally challenge questionable orders made by other members of the health care team using sound rationale	0	1	2	3	4	5

Part II: Demographics

Please check (☑) the box that most accurately describes you, and fill in the appropriate blanks for the items below.

1) What is your gender?
☐ Male ☐ Female

2) Please indicate your age: _____

3) When did you graduate from your nursing program?
Month _____ Year _____
   a. Please indicate what type of degree you earned:
   ☐ BScN ☐ BN

4) Do you have another post-secondary degree or diploma?
☐ Yes
☐ No
   a. If Yes, please specify what other degree(s) or diploma(s) you possess:
   _____

5) What type of unit do you *primarily* work in?

☐ Medical	☐ Cardiology	☐ L&D/Post-partum
☐ Surgical	☐ Oncology	☐ Emergency
☐ Critical/Intensive Care	☐ Pediatrics	☐ Mental Health
☐ Other _____		

   a. Is this your first job as a registered nurse since you graduated from your nursing program?
   ☐ Yes ☐ No

   b. Please indicate how many weeks you have been employed as a registered nurse on this unit. _____

   c. What is your employment status on this unit?
   ☐ Full time
   ☐ Part time Average number of hours per week _____
   ☐ Casual Average number of hours per week _____

   d. Is this employment status by choice?
   ☐ Yes
   ☐ No

   e. Did you have prior experience on this unit through your nursing program?
   ☐ No
   ☐ Yes

If yes, please specify which year(s) in your undergraduate education:
☐ Year 1 ☐ Year 2
☐ Year 3 ☐ Year 4

f. In a typical shift, how many patients are you responsible for? _____

6) Do you have a second job as a registered nurse?
☐ No If no, please go directly to question 6
☐ Yes If yes, please respond to questions 5 a-g.

a. If yes, please indicate which unit:

☐ Medical	☐ Cardiology	☐ L&D/Post-partum
☐ Surgical	☐ Oncology	☐ Emergency
☐ Critical/Intensive Care	☐ Pediatrics	☐ Mental Health
☐ Other _____		

b. Is this your first job as a registered nurse since you graduated from your nursing program?
☐ Yes ☐ No

c. Please indicate how many weeks have you been employed as a registered nurse on this unit. _____

d. What is your employment status on this unit?
☐ Full time
☐ Part time Average number of hours per week _____
☐ Casual Average number of hours per week _____

e. Is this employment status by choice?
☐ Yes
☐ No

f. Did you have prior experience on this unit through your nursing program?
☐ No
☐ Yes
If yes, please specify which year(s) in your undergraduate education:
☐ Year 1 ☐ Year 2
☐ Year 3 ☐ Year 4

g. Is this your first position as a registered nurse?
☐ Yes
☐ No

h. In a typical shift, how many patients are you responsible for? _____

7) Who was involved in introducing and orientating you to the hospital and unit? (Please check all that apply)

☐ Human resources personnel	☐ Clinical educator	☐ Unit manager

☐ Other _____

a. How many days was this orientation period? _____

The College of Nurses of Ontario practice guideline, *Supporting Learners*, defines a preceptor as "a proficient or expert practitioner who enters into a one-on-one relationship with a learner for a set period of time to provide onsite supervision with clinical teaching and instruction" (p. 4).

8) According to this definition, did you, or do you have a preceptor when you started your job as a registered nurse?

☐ No

☐ Yes

a. If yes, how many preceptors did you or do you have?

☐ 1 ☐ 2 ☐ 3 ☐ 4+

b. How long was or is your preceptorship?

☐ Less than 2 weeks

☐ 2 weeks

☐ 3 weeks

☐ 4 weeks

☐ Other _____

If you would like a copy of the results of this study, please check off the appropriate box:

☐ Yes ☐ No

Thank you very much for your contribution to nursing research by choosing to participate in this survey. You will now be entered into a draw for an iPod Shuffle.

Appendix B

University of Western Ontario Ethics Approval