

ORIGINAL RESEARCH

# Effects of peer mentoring on nursing students' perceived stress, sense of belonging, self-efficacy and loneliness

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## ABSTRACT

Mentorship has been around for years and has been explored in nursing education in the clinical settings. Despite evidence that indicates that the academic environment is the most common source of stress, little mentorship implementation and investigation has been done in this environment. The purpose of this research is to describe the effects of a mentorship experience on the level of perceived stress, sense of belonging, self-efficacy, and loneliness by first year baccalaureate nursing students. A quasi-experimental design was conducted. Seventy baccalaureate nursing students in the first year of their program (n = 34 in the experimental group; n = 36 in the control group) enrolled in a single baccalaureate nursing program were recruited. Third year mentors were purposefully selected by nursing professors within the program. The Perceived Stress Scale, the College Self-Efficacy Inventory (CSEI)–Revised, Sense of Belonging–Psychological, Sense of Belonging–Antecedents, and the Revised UCLA Loneliness Scale were used to evaluate the various concepts as these tools were used in previous research with college level students and deemed to be reliable and valid tools for measuring the relevant concepts. The mentorship program was statistically significant in reducing first year nursing students' perceived stress and loneliness. It also appeared to increase their sense of self-efficacy and psychological sense of belonging. The mentorship experience could potentially enhance the student experience as well as aid the academic institution in retention and resource maximization. The focus of this research was on the academic mentoring by peers and is worth further exploration and possible wide-scale integration within nursing education.

**Key Words:** Nursing student, Mentorship, Self-efficacy, Stress, Belonging, Loneliness

## 1. INTRODUCTION

Mentoring has been historically used in business, management, and law however, it is transferrable across many disciplines. Mentoring has been inconsistently defined within the literature nevertheless it is generally in a relationship where a mentor (typically more experienced) provides support to the mentee (typically less experienced) with the intention of supporting positive personal development.<sup>[1,2]</sup> Mentorship programs can be in many forms and are prescribed based

on the situation and needs of the proposed mentees. For the purpose of this study, mentorship involved mentors assisting with orientation by familiarizing students/mentees with key institutional processes and personnel by transferring their own experience and lessons learned regarding the institution. Mentors challenged the mentees to think in more expansive ways as students new to nursing programs often need to be helped to see beyond their own context and to look at the bigger picture in order to move past narrow thinking. Men-

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tors helped mentees to understand the broader aims of higher education.<sup>[3]</sup> Mentors provided support and encouragement by sharing academic resources and organizational tips. There was no tutoring done by the mentors.

Peer mentoring is a readily available resource that is often left untapped within nursing education despite its success in other academic disciplines.<sup>[4]</sup> It is a strategy that can benefit the mentor, mentee, and educational program.<sup>[4-9]</sup> The Canadian Nurses Association (CNA) embraces the concept of mentorship and describes it as a reciprocally beneficial relationship (2004).<sup>[6]</sup> The CNA further states that it is a professional expectation that nurses act as mentors (2008).<sup>[10]</sup> Being a mentor facilitates personal growth and enhances leadership skills.<sup>[6]</sup> Mentees are said to have increased confidence and satisfaction in their environment.<sup>[6]</sup>

Lastly, effective mentorship programs are said to improve retention and commitment to the institution and to the profession.<sup>[6,11]</sup> Nursing schools are challenged to meet the diverse learning needs of nursing students.<sup>[12]</sup> Globally, it is important that nursing schools put conscious effort into ensuring they are graduating a sufficient number of new graduates to meet the needs of the aging population and therefore improving student retention rates is a necessity for the greater population as a whole.<sup>[13]</sup> Tourigny and Pulich reported that mentoring facilitates development of tacit knowledge which includes innovative and creative thinking, intuitive knowing, and personal growth all of which are positive attributes for nurses and nursing students to develop (2005).<sup>[14]</sup>

### 1.1 Current body of knowledge – peer mentorship programs

Previous studies are dated and explored peer mentorship programs within nursing education with the focus on the clinical setting and more precisely within medical/surgical units tied to single nursing courses.<sup>[15]</sup> The nursing education experience of nursing students is significantly different than that of students in non health academic programs. It is important then, to explore the academic experience of this population of students. No research on mentorship programs within Canadian institutions and more specifically in the academic experience/environment of nursing students was found in the literature. Taiwanese researchers explored mentorship and nursing students' stress in the clinical setting and found that mentorship made no difference in stress scores.<sup>[16]</sup> On the other hand, researchers in two American based studies, explored the use of mentors with nursing students' in the clinical setting and found that students expressed decreased anxiety and stress and higher levels of student collegiality and learning opportunities.<sup>[15]</sup>

Nurse educators have a responsibility to enhance the academic environment to ensure it is providing students with the best possible experience. Since the current body of knowledge on mentoring experiences within nursing education is limited to clinical settings and single courses, further research exploring mentorship initiatives within the entire nursing program were needed so that future academic environments can be created to enhance student experiences and improve the sustainability and success of nursing programs.

### 1.2 Concepts

A number of concepts were explored in this study including: stress, sense of belonging, loneliness, and self-efficacy.

#### Stress

There are many factors, intrapersonal, interpersonal and institutional that can affect the health and well-being of post-secondary students.<sup>[17]</sup> Stress is defined as “a relationship with the environment that the person appraises as significant for his or her well-being, in which the demands tax or exceed available coping resources” (p. 63).<sup>[18]</sup> Analysis of data from the 2013 National College Health assessment suggest that 57.6% of Canadian post-secondary students experienced higher than average levels of stress and that stress is the most common “impediment to academic performance” (p.ii).<sup>[19]</sup> Nursing students have been identified as a group at higher risk for experiencing stress than students from other programs as nursing education is known to be highly competitive and stressful due to the complexities and challenges that accompany the profession both practically and theoretically.<sup>[17,19-21]</sup> Student stress in nursing and other postsecondary programs has been linked to poor motivation, and lack of persistence resulting in academic failure and in many cases the withdrawal of the student from their program of study.<sup>[11]</sup> Attrition rates for nursing students in Canadian baccalaureate programs are between 10%–18%.<sup>[22]</sup> While students leave their programs for various reasons such as being academically unprepared, family responsibilities, financial issues and others; stress has been associated with poor academic performance and it has been suggested that stress is the “foremost impediment to academic performance” (p. 9).<sup>[17]</sup>

Pulido-Martos and colleagues (2011) conducted a systematic review of the quantitative literature to reveal sources of nursing student stress.<sup>[23]</sup> They found that “the most common source[s] of stress relate to academics (reviews, workload and problems associated with studying)” (p. 15). Researchers who explored first year nursing students' sources of stress reported the following categories: “intrapersonal”, “interpersonal”, “academic”, and “environmental” with the most frequently reported being “academic” stress.<sup>[24-26]</sup> The

“academic” stress category includes school related tasks and issues such as workload.

### 1.3 Sense of belonging

Choenarom and colleagues (2005) reported that there is a link between perceived stress and the concept of “belonging”.<sup>[27]</sup> Grobecker stated that a sense of belonging is essential for nursing students as they embark on their role to become professional nurses (2016).<sup>[28]</sup> Hagerty and Patusky (1995) define sense of belonging “as the experience of personal involvement in a system or environment so that persons feel themselves to be an integral part of that system or environment” (p. 172).<sup>[29]</sup> A number of researchers have reported that first year students are particularly vulnerable to feelings of isolation and withdrawal as they are often away from home, in unfamiliar environments, and even unaware of what their chosen program and future profession is all about which negatively influences their learning experience and possibly even their success and retention in their program.<sup>[30–33]</sup> Creating a caring supportive environment has been reported to facilitate a sense of belonging in students and previous research has focused on student-faculty pairing and not peer-peer pairing.<sup>[34,35]</sup>

### 1.4 Loneliness

The concepts of loneliness and social isolation have been linked throughout the literature. Loneliness is often defined as a social deficiency. The working definition within this research is as follows: “loneliness exists to the extent that a person’s network of social relationships is smaller or less satisfying than the person desires” (p. 101).<sup>[36]</sup> Loneliness is not prejudiced and affects everyone at some point in their lives.<sup>[36,37]</sup> Loneliness can take over one’s life and leave one trapped in a continuous pattern of negativity which ultimately may affect one’s physical and psychological well-being, affects one physically and psychologically. In keeping with the spirit of this study, loneliness is a related concept which is explored.

### 1.5 Self-efficacy

Self-efficacy is a multi-dimensional construct that measures one’s confidence to perform their academic requirements in a meaningful way.<sup>[38]</sup> This concept should be evaluated relative to context and therefore academic self-efficacy is measured in this research.<sup>[38]</sup> Self-efficacy can be useful in predicting academic outcomes.

## 2. METHOD

The aim of this research is to describe the effects of a mentorship experience on first year baccalaureate nursing students’ perceived stress, sense of belonging, self-efficacy, and loneli-

ness in an experimental versus control group. The research questions that guided this research were:

- (1) What are the first year baccalaureate nursing students’ perceived stress and self-efficacy levels, sense of belonging, and loneliness prior to and following involvement in the mentoring program?
- (2) What is the effect of the mentoring program on stress levels and self-efficacy, sense of belonging, and loneliness of first year baccalaureate nursing students following the mentorship program?

The researchers hypothesized that there would be a difference in the pre and post measures for the experimental group and more specifically, that there would be decreased stress and loneliness rates and increased rates of self-efficacy and sense of belonging.

Two groups, in a before and after quasi-experimental design, were used to analyze the research questions. The questionnaires were administered to both groups during a common psychology class. Students were introduced to the peer mentors and the peer mentoring program. The peer mentoring program was implemented over the course of 6 weeks. Details of the program are included below. The post-test questionnaires were again completed for both groups following the mentorship program.

### 2.1 Participants

First year students in the baccalaureate nursing program at a single community college in Ontario who were 18 years of age or older were recruited as mentees in this study. Participant recruitment did occur via direct solicitation in an undergraduate first year nursing class as predetermined by the researchers.

### 2.2 Mentors

The six mentors were purposefully selected by experienced faculty who were familiar with the cohort of third year students for the 2016/17 academic year. The mentors were selected based on a number of factors including academic performance and interpersonal skills. The mentors’ responsibilities within the program incorporated into a third year nursing practice course, which included a 72 hour community health placement. It is important to note that the outcome of both the mentorship experience or this study did not influence the student’s placement.

The mentors were assigned between 5-7 first year nursing students also referred to as the mentees. Where possible, the researchers purposefully assigned each mentor with students who had similar demographic characteristics or identified needs such as being a mature student, a parent, and so on.

### 2.3 Mentoring experience

The role of the mentor was to develop an ongoing relationship with each mentee in their assigned group. They organized communication mechanisms using Facebook, email, text messaging, and so on. They encouraged the development of study groups.

The mentors had a supervisor who ran a brief session with the mentors prior to the commencement of the mentorship experience. Within this session, mentors were made aware of the necessity to maintain boundaries with the mentees. They were made aware that the relationship was a formal one that would need to be ended after the mentorship experience and that part of their role was to share as many resources and strategies as possible with the mentees thereby empowering and building their capacity. The supervisor supported the mentors by meeting once a week with them as a group to debrief and share their questions/concerns. The supervisor was essentially an informal mentor for the mentors and served as a sounding board, safety net, and guiding support.

The structure of the mentorship experience required that mentors meet with their group twice face to face in the first six weeks of the program to establish study groups and at least once (formally) with each mentee over the course of the first six weeks of the program to determine individual needs, concerns and strengths. The number of contacts ranged from four times per week up to 15 times per week depending on the mentees expressed needs. The majority of the contacts were via text messages. Mentors shared their experiences of course expectations and assisted mentees to develop study skills, organizational skills and professional boundaries. They also helped mentees to develop time management skills. The mentorship experience was responsive to the mentees needs and was dynamic from week to week. The mentees actually directed the discussions so that it was meaningful to them. The one main restriction was that mentors were not to provide any form of academic tutoring as this was a service offered by the academic institution through a dedicated learning centre.

### 2.4 Instruments

A number of data collection tools were used including a brief demographic questionnaire which collected details including age, gender, and current living situation. The 10-item Perceived Stress Scale (PSS) was used to assess students' perception of stress.<sup>[38]</sup> It has been used in a variety of studies that explore student stress and has good psychometric properties for factorial validity and internal consistency (Cronbach alpha coefficient of 0.85).<sup>[39]</sup> It is easy to understand and asks general questions about feelings over the past month and is easily transferrable to any sub-population such as nursing

students and as such was an ideal tool for measuring stress in this study. This tool uses a five point Likert scale with 0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, and 4 = very often. A few of the items require reverse responses and then all of the items are summed. A score between 0 and 13 would indicate a low stress level, between 14 and 26 would signify a moderate stress level, and lastly a stress level between 27 and 40 equates to a high level of perceived stress.

The 26 item College Self-Efficacy Inventory (CSEI) – Revised was selected to explore student self-efficacy as it has been used to assess students' self-efficacy or confidence related to various college aspects in other research studies.<sup>[38]</sup> Structural Equation Modelling on this tool revealed a good model fit, an incremental fit index > 0.95 and an RMSEA of < 0.05. This tool uses a 10 point Likert scale with 0 = not at all confident to 10 = extremely confident. The score is summed and the higher the number the greater the expressed level of self-efficacy is with the highest possible score being 260.

The Sense of Belonging Instrument (SOBI) is a 27 item tool that is broken down into two sections: psychological sense of belonging (SOBI-P), and antecedents to sense of belonging (SOBI-A) which includes topics that affect one's motivation to attain a sense to belonging.<sup>[38]</sup> Both sections of the test utilize a four point Likert-style scoring system ranging from 1 (Strongly Disagree) to 4 (Strongly Agree). It is important to note that the questions included in SOPI-P are written in a negative tense, thus a score of 4 would indicate a low sense of belonging, whereas the questions in the SOPI-A are affirmatively written and therefore a score of 4 would indicate a high score in the antecedent area. The tool was found to have internal consistency for both SOBI-P and SOBI-A with alpha Cronbach's of 0.93 and 0.72 respectively and has been tested with college level students.<sup>[40]</sup> The researchers also reported test-retest reliability of 0.84. After summing the scores, the score on the SOBI-P ranges from 21 to 72. The higher the number the lower expressed sense of belonging. After summing the scores on the SOBI-A, which ranges from 19 to 36, a higher score would indicate that there is a greater degree of antecedents for a sense of belonging.

The Revised UCLA Loneliness Scale is a simple 20-item scale designed to measure one's perceived feelings of loneliness using a four point Likert type scale from 1 (Never) to 4 (Often) was used to collect data related to this concept.<sup>[41,42]</sup> The psychometric properties of the UCLA Loneliness Scale (Version 3) were assessed "using data from prior studies of college students: nurses, teachers, and the elderly, analyses of the reliability, validity, and factor structure of this new version of the UCLA Loneliness Scale were conducted. Re-

sults indicated that the measure was highly reliable, both in terms of internal consistency (coefficient a ranging from 0.89 to 0.94) and test-retest reliability over a 1-year period ( $r = .73$ ). Convergent validity for the scale was indicated by significant correlations with other measures of loneliness. Construct validity was supported by significant relations with measures of the adequacy of the individual’s interpersonal relationships, and by correlations between loneliness and measures of health and well-being. Confirmatory factor analyses indicated that a model incorporating a global bipolar loneliness factor along with two method factors reflecting direction of item wording provided a very good fit to the data across samples” (p. 20).<sup>[41,42]</sup> A score of between 0 and 60 is summed from this tool the higher number equating to higher degrees of loneliness.

**2.5 Ethical considerations**

The college’s Research Ethics Board reviewed this study for ethical compliance. Following approval, participant recruitment occurred via direct solicitation in an undergraduate first year nursing class as predetermined by the researchers. The class chosen was a psychology elective as all students were available in one session as this class was not split into sections. This provided ease of access to the students and was taught by a professor who was not one of the core nursing faculty members. Details of the study were presented and participants were explicitly made aware that their success in the nursing course would in no way be affected by their

participation or lack of participation in this research study. Participants were advised that participation was completely voluntary and that they have the right to decline participation or can withdraw at any time during the study, as well as other rights as per the Tri-Council Policy Statement.

**2.6 Statistical analysis**

Data was analyzed using IBM SPSS Statistics for Macintosh, Version 22.0. Appropriate descriptive statistics were computed based on each level of measurement. A graphical interpretation revealed that the data was of non-normal distribution. Chi square test was used to determine if there were differences between the experimental and control group prior to the intervention. Wilcoxon matched paired signed ranks test were used to compare pre/post test score changes following the peer mentoring strategy.

**3. RESULTS**

**Characteristics of the sample**

Seventy year one nursing students were recruited in the student, with 34 participant mentees in the experimental group and 36 participants in the control group. The majority of the participants were female Caucasian between the ages of 18 and 21 living with their parents (see Table 1). Chi square results showed that in most of the variables there were no significant demographic differences between the experiment and control group.

**Table 1.** Demographic details

Variables	Experimental (n = 34)		Control (n = 36)		p value
	n	%	n	%	
<b>Gender</b>					
Male	3	9	2	6	.030
Female	31	91	34	94	
<b>Age (years)</b>					
18-21	25	73	24	67	.333
22-24	4	12	8	22	
25-27	4	12	3	8	
> 28	1	3	1	3	
<b>Race/Ethnicity</b>					
African-American	3	9	2	6	.226
Asian-American	2	5	1	3	
Caucasian	25	74	25	69	
Hispanic	1	3	2	6	
Multiracial	2	6	1	3	
Native American	1	3	5	14	
<b>Living Arrangements</b>					
Off-Campus	8	24	5	14	.540
On-Campus	8	24	10	28	
With Parents/Family	18	53	21	58	

\*p value represents the significant difference value. A p value of < .05 means there is a significant difference.

Table 2 provides the first year baccalaureate nursing students perceived stress levels, self-efficacy, sense of belonging, and loneliness prior to and following the mentorship experience. Wilcoxon matched paired signed ranks test was used to reveal significant differences in score between the pre and post scores for each group. A level (*p*-value) less than .05 is con-

sidered statistically significant. As included in Table 2, there are statistically significant differences for the experimental group on all of the scales. In the control group, there were statistically significant differences in the perceived stress and self-efficacy scores.

**Table 2.** Comparison of the pre and post scores for experimental and control groups (n = 70)

Scales	Experimental Group (n = 34)			Control Group (n = 36)		
	Pre	Post	<i>p</i> -value	Pre	Post	<i>p</i> -value
Perceived Stress	19.97 (4.48)	14.26 (2.94)	.000	20.78 (4.67)	25.31 (5.21)	.000
Self-Efficacy	173.28 (29.08)	199.59 (17.23)	.000	181.67 (29.77)	159.47 (39.23)	.001
Sense of Belonging (Psychological)	31.50 (6.77)	38.42 (8.27)	.002	27.14 (7.32)	29.00 (8.72)	.317
Sense of Belonging (Antecedent)	29.68 (2.76)	32.06 (2.45)	.004	28.14 (2.87)	28.81 (1.90)	.290
Loneliness	51.09 (3.33)	46.15 (8.55)	.000	51.83 (4.58)	54.17 (4.29)	.062

\**p* value represents the significance level between pre and post scores. A *p*-value of < .05 is considered statistically significant.

#### 4. DISCUSSIONS

The demographic details suggest that the majority of our participants were entering the program with little life experience with many just graduating from high school. The focus of this paper centers on a number of concepts that are related and intertwined. The findings from this study suggest that the mentorship program delivered by third year students to the first year students seemed to assist with decreasing their perceived stress and loneliness and increasing their sense of belonging, and sense of self-efficacy. These scales are related to student mental health and help to aid in the mental wellness of students.

It has been well documented for years that high levels of stress contribute to both physical and mental health problems. Through the incorporation of peer mentors, students will have a contact person whom they could feel more comfortable approaching when they are reluctant to contact college representatives. First year students are often faced with challenging events and having an additional role model could provide invaluable. Enhanced student collegiality and development of organizational skills that can prove to be valuable lifelong skills.

Self-efficacy and stress are known to predict academic outcomes with self-efficacy said to be the largest single predictor of grade point average (GPA).<sup>[38]</sup> Our findings revealed a statistically significant increase in students' self-efficacy which suggests that these students are likely to have a higher degree of academic success than if they had not participated in this mentorship experience. These improved rates can result in higher levels of satisfaction with their program. Students that are self-efficacious will feel in charge of their life and

experience higher degrees of confidence.

The utilization of peer mentors introduces a number of resources for academic institutions. With financial and resource constraints, having students as mentors is a way to utilize a valuable resource and provide students with another source of support. It is the college's ethical responsibility to support students in a variety of ways. The student mentors could be a first point of contact and a direct referral system to the college resources.

Incorporation of student mentors could help to enhance the culture in a program or environment which fosters student relationships. This could ultimately lead to higher levels of student satisfaction which in turn is favourable for academic institutions. The findings from this study could help to guide the development of program wide mentorship initiatives that could positively impact the novice students post-secondary experience. Student attrition is another issue that has genuine repercussions for the institutions. Sense of belonging is a way to enhance student retention through the creation and fostering of a supportive environment. O'Keefe has gone so far as to state that the educational institution can drive or enable student connectedness.<sup>[32]</sup> We found statistically significant increases in students' sense of belonging which suggests that these students have a stronger sense of connectedness to the institution and program than their peers.

#### Strengths and limitations

From a strengths perspective, this study looked at mentorship from a different lens by focusing on mentorship within nursing education as a whole rather than from a purely clinical outlook. A limitation of this study is that the participants are

from only one nursing program. It is possible that personal characteristics and faith in the mentorship process could have influenced the participant's desire to participate. Mentors were selected by faculty so this could have potential influence on the experience. Another limitation to this study is that the mentorship experience was not specifically prescribed and allowed for flexibility which results in varying degrees of contact between mentors and mentees which could be a confounder to the results. Future research that develops and utilizes a structured mentorship experience that incorporates sessions from other departments such as career services, student services, and counseling services would afford greater opportunity to replicate the study.

## 5. CONCLUSIONS

This study has found that mentorship had positive influence on the mentees by decreasing stress and loneliness, and increasing self-efficacy and sense of belonging. It would also be worth exploring the benefits of a longer mentorship experience to see if further benefits are gained with extended time. This study focused solely on the mentees experience and it would be worth exploring the mentors experience and triangulating the data in some manner to see how they compare so that maximum benefit can be achieved by both parties. Despite this study not exploring the peer mentors experiences, Dennison (2010) stated that peer mentors are intrinsically

rewarded by feeling that they helped others in a challenging program to succeed.<sup>[4]</sup> Furthermore, it would be interesting to study students within other disciplines to see if nursing student peer mentors and mentees experiences and benefits from the mentorship experience differ from other first year students. This is relevant as nursing education is fundamentally different from many other academic programs.

The reality is that in community colleges in Ontario, Canada student retention rates are one metric that is linked to government funding and as such retention rates are important. Strategies to increase student retention are worth exploring on a program and college wide basis. Likewise, student satisfaction is a measurement that is also tied to government funding. It is well known that there is globally shrinking numbers of college age students which further emphasizes the importance of student retention. All of these measures are critical to the ongoing sustainability of educational institutions. Likewise, on a wide scale student retention is vital to meeting the ongoing medical demands of the aging population. In conclusion, this study has advanced the body of knowledge on peer mentorship within nursing education and supports its use throughout the academic environment.

## CONFLICTS OF INTEREST DISCLOSURE

The authors declare that there is no conflict of interest.

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