How Do We Combat Student Nurse Stress in Clinical Learning? An Integrative Review of Interventions for Addressing Student Nurse Stress

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Abstract

Even though student nurse stress related to the clinical setting has been a prominent issue in the nursing literature for many years, few studies exist that have focused on evaluating interventions that clinical nurse educators could implement to address this practice issue. Due to the prevalence of this issue in the literature, it is imperative for clinical nurse educators to not only be knowledgeable about student nurse stress, but also about effective ways to mitigate it. Thus, the purpose of this integrative review is to critically appraise the current nursing research on interventions to mitigate student nurse stress in the clinical learning environment so as to provide clinical nurse educators with the current evidence on this practice issue. This literature review consists of ten papers, comprised of original research and other sources, which were critically appraised and graded for relevancy and rigour. Key findings from the literature indicate that there are four types of interventions that have been used to reduce student nurse stress in the clinical setting: peer mentoring, simulated clinical experiences, constructive teaching behaviors, and the use of multi-modal instructional methods. Recommendations for clinical nurse instructors include effectively implementing stress-reducing interventions in their own educational practices and becoming more active in nursing education research.

Keywords: student nurse stress, clinical learning, and interventions

Student nurse stress is an area of concern in nursing education. My interest in this issue was first sparked when I assumed a clinical nurse instructor role with a group of second year nursing students where I quickly learned that stress played a central part in their clinical practicum experiences. Some students described feeling stressed when performing new skills, while others experienced stress when managing new or complex client situations. All students shared stories regarding stressful interactions with staff nurses, physicians, clients, families, and previous clinical instructors. After listening to their experiences and stories, I felt compelled to explore this area in more depth so that I could gain a deeper understanding of student nurse stress in the clinical setting and so that I could also learn effective ways to mitigate this stress.

In the nursing education literature, three main sources of student nurse stress have been identified: academic stressors, clinical stressors, and personal/social stressors (Pryjmachuk & Richards, 2007). In a study exploring the perceived level and sources of stress in university professional schools, Beck, Hackett, Srivastava, McKim, & Rockwell (1997) found that baccalaureate nursing students experienced higher levels of stress and described higher levels of physiological and psychological symptoms in comparison to pharmacy, social work, and medical students. Beck et al. reported that stress related to clinical experiences seemed to differentiate nursing students from these other health-related disciplines. In other words, the clinical experiences of these baccalaureate nursing students contributed greatly to their higher stress levels. Interestingly, there are few nursing studies that have focused on evaluating interventions that nurse educators could implement to assist nursing students in coping with clinical sources of stress. Thus, I believe that it is imperative for clinical nurse educators to be knowledgeable about student nurse stress and effective ways to mitigate it.

In this project, I will present an overview of the literature on student nurse stress in relation to the clinical setting and then I will conduct an integrative review where I will critically appraise current research studies that explore and evaluate interventions for mitigating student nurse stress in clinical practice. The purpose of this twofold approach is to first demonstrate the importance and relevance of this issue to nurse educators and to then provide them with a critical analysis of stress-related interventional studies so that they can make informed decisions on the interventions they choose to implement to address this practice issue. Finally, I will summarize what appears in the evidence on this issue in terms of recommendations for clinical faculty.

Background

Stress

Depending on the disciplinary frame of reference, there have been numerous conceptualizations of the term stress in the literature. For the purpose of this paper, I have chosen to use Lazarus and Folkman's (1984) transactional model of stress (TMS) to conceptualize stress. Lazarus and Folkman's definition of stress is based on the assumption that "psychological stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p.19). The primary focus of the TMS is on the transactions that occur between the person and the environment where cognitive appraisal and coping are deemed as two critical processes that mediate this person-environment relationship and affect one's social, psychological, and physical well-being (Lazarus & Folkman, 1984). I have chosen to use the seminal work of Lazarus and Folkman to conceptualize stress for several reasons: (1) they have proposed a comprehensive theory of stress that emphasizes the psychosocial and relational

aspects of stress, (2) their theory is applicable to the issue of student nurse stress in the clinical setting and thus, this project and (3) their assumptions fit with my beliefs and experiences regarding the relationship between stress, the student nurse, and the clinical learning environment. Other stress-related theories, such as the diathesis-stress model (Eberhart & Hammen, 2010), are available but they tend to focus on how stress contributes to the development of a mental health disorder. On the other hand, Lazarus and Folkman's stress theory focuses on the appraisal, response, and adaptation to stress; thus, it is more applicable to clinical faculty in understanding the experience of stress by nursing students and how to help students cope with this stress during their clinical practices.

In this paper, I have chosen to focus on the construct of stress due to its relevance and importance in nursing education. Although it is natural for student nurses to encounter stress in their clinical practice experiences, excess or prolonged stress can have detrimental effects on student nurses' physical, psychological, and social health and well-being (Health Canada, 2008; Canadian Mental Health Association [CMHA], 2012). Stressful situations can also trigger certain stress emotions, such as anxiety, in student nurses that can further impact their health and well-being (Lazarus & Folkman, 1984). Even though the terms stress and anxiety are often used interchangeably, anxiety can be considered a response to or an emotion of stress (Lazarus & Folkman, 1984). Thus, through implementing stress-related interventions, clinical faculty have the opportunity to not only mitigate student nurse stress, but also students' emotional responses to stress, such as anxiety, so as to maintain their health and well-being.

Stress and Health

Stress is an inevitable part of life whether it is in relation to a traumatic or harmful event, to change, or to the nuances of everyday life (Lazarus & Folkman, 1984). It has been found that at a certain level stress can enhance an individual's learning and performance (Gibbons, Dempster, & Moutray, 2007). However, as a result of the body's natural response to stress, an individual's health can be negatively affected when the individual experiences too much or unresolved stress (Health Canada, 2008). Consequently, an individual can experience anxiety and negative thinking, can have errors in judgment and decreased performance, and can be more vulnerable to disease and illness (Health Canada, 2008; CMHA, 2012).

Although the impact of stress on the health of nursing students has not been extensively researched in the discipline of nursing, several studies have been directed towards exploring the association between student nurse stress and health. Gibbons (2010) found that stress in nursing students could cause emotional exhaustion, depersonalization, and decreased personal achievement. Student nurse stress has also been linked to students' feeling anxious, worried, under pressure, rundown, frustrated, upset, and concerned with their futures (Evans & Kelly, 2004; Jiminez, Navia-Osorio, & Diaz, 2010; Sheu , Lin, & Hwang, 2002). Lastly, some nursing students have reported difficulties making decisions and thinking clearly in response to the stress they experience in their respective nursing programs (Sheu et al., 2002).

Student Nurse Stress in Clinical

In the clinical learning environment, nursing students come to know the realities of nursing, link theory to practice, and acquire the decision-making, problem-solving, critical-thinking, and psychomotor skills central to safe and competent nursing care (Burns & Paterson,

2005; Ness, McCallum, & Price, 2010). It is apparent that the clinical setting can be a powerful learning arena for nursing students; however, it is also the place where students face the demands inherent in everyday nursing practice and therefore, are at risk of experiencing stress. On my review of the nursing literature, I discovered several common sources of stress that student nurses have identified in relation to their clinical practicum experiences which include, but are not limited to the following: the initial clinical experience, the interactions with faculty and staff, the incongruence between what is learned and what is actually practiced, the lack of professional knowledge and skills, the fear of making mistakes and causing harm, the nature and quality of the clinical practice environment, and the simultaneous academic and clinical demands.

The initial clinical experience on a new ward has been identified as a source of stress and anxiety for nursing students (Gibbons et al., 2007; Jahanpour, Sharif, Salsali, Kaveh, & Williams, 2010; Melo, Williams, & Ross, 2010). In a qualitative study exploring nursing students' experiences of clinical practice, Sharif and Masoumi (2005) found that almost all participants reported feeling anxious in their initial clinical placement. Students related their feelings of anxiety to the difficulties that they experienced at the beginning of a new placement such as a lack of confidence and knowledge, fear of the unknown, fear of the hospital environment, and fear of failure and making mistakes. Similarly, Shipton (2002) found that when nursing students' encountered new clinical rotations they described feelings of stress associated with the fear of not knowing what to expect and the discomfort of becoming familiar with the new clinical environment.

Many studies reported that nursing students perceived the interactions with faculty and staff members as a significant source of stress in the clinical learning environment (Basso Musso et al., 2008; Gibbons et al., 2007; Kim, 2003; Melo et al., 2010; Shaban, Khater, & Akhu-

Zaheya, 2012; Sharif & Masoumi, 2005). Actions of clinical faculty members that have been perceived by nursing students as stressful included clinical evaluations, being observed, incompetent or moody behavior, and waiting on the clinical instructor (Shipton, 2002). Further, students have described feeling anxious regarding the reception of negative and belittling feedback, being supervised by the instructor at the bedside, and being publicly criticized after making a mistake (Jahanpour et al., 2010). Actions of nursing staff that have been perceived as stressful by nursing students include negative attitudes and comments, feelings of being taken advantage of because they were students, and a lack of support and guidance (Nolan & Ryan, 2008; Shipton, 2002). Lastly, nursing students have described situations of being demeaned by the actions and behavior of clinical faculty members and staff nurses, being exposed when faculty would share their failures with the rest of the clinical group, and being abandoned when staff nurses were unwilling to supervise them or when faculty where inaccessible for assistance during a clinical placement (Melincavage, 2011).

Another source of stress reported by nursing students was feeling that they lacked professional knowledge and skills (Basso Musso et al., 2008; Jahanpour et al., 2010; Melo et al., 2010; Shaban et al., 2012; Sharif & Masoumi, 2005; Shipton, 20020; Zupiria Gorostidi et al., 2007). For example, some students have described being uncertain of their abilities to perform certain nursing skills on patients (Melincavage, 2011), whereas other students have expressed feeling stressed due to their lack of confidence in their abilities to competently deal with new situations (Nolan & Ryan, 2008). In other words, these students have felt stressed when they believed that they did not have the adequate knowledge and skills to provide competent care to patients or to make decisions about patient related situations during their clinical practicum experiences. Nursing students have also reported stress in relation to the fear of making mistakes

and causing harm to patients (Basso Musso et al., 2008; Kim, 2003; Melo et al., 2010; Sharif & Masoumi, 2005). In one study, nursing students described that their fears not only caused them to experience stress, but also affected their professional self-concept and work attitude (Jahanpour et al., 2010). As a result of this lack of self-confidence and motivation, students felt that their stress due to fear was so overwhelming that their clinical judgment and decision-making abilities were impaired (Jahanpour et al., 2010).

Nursing students have also described feelings of stress in relation to balancing their academic demands with their clinical demands (Chan, So, & Fong, 2009; Gibbons et al., 2007). In a study on the stress experienced by fourth year psychiatric nursing students, Nolan and Ryan (2008) found that the combination of working full time and completing their final academic requirements was a significant source of stress for final year nursing students. In particular, students described feeling exhausted on their days off and having difficulty finding time to complete their assignments. Nursing students have also reported that preparing for clinical assignments as being stressful (Shipton, 2002). These students described that the amount of time spent writing care plans and making medication cards contributed to their perception of stress in the clinical learning environment.

Lastly, the discrepancy between theory and practice and the nature and quality of the clinical practice environment have been reported as sources of stress for nursing students (Gibbons et al., 2007; Shaban et al., 2012). Nursing students have described feeling stressed when comparing how, in theory, skills should be practiced compared to how they were actually practiced by staff nurses (Gibbons et al., 2007). In relation to the nature and quality of the clinical practice environment, nursing students have reported time-pressure demands from working on understaffed units as being stressful (Gibbons et al., 2007) as well as having a heavy

workload, having little control over their assignments, fulfilling professional expectations, and feeling beneath staff nurses (Nolan & Ryan, 2008). Overall, it is apparent that student nurse stress in the clinical practice setting is an area of concern in nursing education. Clinical nursing faculty can play a central role in helping students cope with this stress so that they can get the most out of their clinical practice experiences.

Purpose and Objectives

The purpose of this project is to emphasize to nurse educators the significance of the issue of student nurse stress in the clinical setting to their own nursing education practices and to inspire them to use evidence-based interventions in assisting students to better cope with the stress experienced in clinical practice. The specific objectives for this project are (1) to present an overview of the literature pertaining to the topic of student nurse stress in the context of clinical learning, (2) to critically appraise and synthesize the findings of research studies exploring and evaluating interventions that address this practice issue, and (3) to provide recommendations for clinical nurse educators to use in their own educational practices.

Method

For this project, I chose to perform an integrative review to critically appraise and synthesize the current evidence relating to interventions for mitigating student nurse stress in the clinical practice setting. I drew guidance for this review from Whittemore and Knafl's (2005) integrative review framework as it proposes specific strategies to enhance the rigour in conducting this form of research review. Based on Whittemore and Knafl's framework, I structured this integrative review to include the following four stages: problem identification, a

literature search, evaluation of chosen articles for quality and relevance, and a discussion of the findings.

Problem Identification

The stress and anxiety experienced by student nurses during their clinical practice experiences can not only impact their health and well-being, but their learning and performance as well (Gibbons, 2010). One way to assist student nurses to potentially enhance their health, learning, and performance in clinical placements is for clinical nurse educators to be cognizant of the clinical stressors that students experience and to implement effective evidence-based interventions to mitigate their stress. So, what evidence-based interventions can nurse educators implement to help nursing students cope with clinical stress? What is the quality of evidence supporting the use of such interventions to address this practice issue?

The Literature Search

With the assistance of a University of Victoria librarian, I searched the CINAHL, MEDLINE, PsycINFO, Cochrane Database of Systematic Reviews, and Health Source: Nursing/Academic Edition databases using the EBSCOhost server to obtain relevant articles. The search terms included baccalaureate nursing students or baccalaureate nursing education, stress or anxiety, clinical, and intervention* or method* or project* or practic*. In the initial search, I only used the term intervention* to describe the act or means of reducing student nurse stress, but this revealed very little literature applicable to the question of interest guiding this review. Thus, I expanded my search terms to include method*, project*, and practic* to access more relevant literature. I excluded the terms strateg* and program* as they did not reveal any new pertinent sources in my literature search. Further, I included the term anxiety for several reasons:

stress and anxiety have been used synonymously in the literature, anxiety can be considered a common response or emotion of stress, and a limited number of articles were revealed with just the term stress. Lastly, to reveal the most relevant sources, the following search terms had to be present in the subject terms of the EBSCOhost server: baccalaureate nursing students or baccalaureate nursing education, stress or anxiety, and clinical.

As the EBSCOhost server removes duplicate articles from the searched databases, the literature search revealed 38 articles that were retrieved only from the CINAHL and PsycINFO databases indicating that the other databases did not reveal any new articles. Of these 38 articles, 15 articles met my initial inclusion criteria; however, after a preliminary reading of each article, I excluded 7 articles for a number of reasons. The excluded papers either explored or evaluated interventions that were implemented in the academic setting rather than the clinical setting, did not describe a specific intervention or strategy that nurse educators could implement in the clinical learning environment, or depicted interventions aimed at other practice issues such as student nurse competence. In addition to searching electronic databases, I performed an ancestry search and a manual search of pertinent journals. Two additional relevant sources were revealed using these search methods. Thus, there were a total of 10 articles that were included in this integrative review. A table can be found in Appendix A indicating the number of articles retrieved from each database and from other methods of search.

Inclusion and Exclusion Criteria

For the literature search, I used the following inclusion criteria for articles chosen for this integrative review: (a) written in English, (b) published between 2000 to present, (c) described peer-reviewed research and non-research publications, (d) and addressed interventions for

mitigating student nurse stress in the context of the clinical learning environment. If other samples besides nursing students were used in an article, the article was excluded if the information on nursing students was not provided separately. Articles were also excluded if they were not written about baccalaureate nursing students and if they did not describe specific interventions that nurse educators could implement to mitigate student nurse stress or anxiety. It should be noted that I only searched for articles and not other types of publications in my literature search.

Evaluation and Analysis of Studies

To assess the quality and strength of evidence of sources included in this review, I used two critical appraisal tools, The John Hopkins Nursing Evidence-Based Practice (JHNEBP) research evidence appraisal tool and the JHNEBP non-research evidence appraisal tool, developed by the nurses and faculty at The Johns Hopkins Hospital and The Johns Hopkins University School of Nursing (Newhouse, Dearholt, Poe, Pugh, & White, 2007). Examples of these two tools are attached as Appendix B and C. I chose to use the JHNEBP appraisal tools over others as they not only offer a standardized approach to appraise both research and non-research evidence, but they also fit with conducting an integrative review as this approach allows for the inclusion of studies with diverse methodologies (Whittemore & Knafl, 2005). In addition to the JHNEBP appraisal tools, the JHNEBP Individual Evidence Summary tool (Newhouse et al., 2007) was used to organize and summarize key findings from the appraised evidence of each source which is attached as Appendix D.

To evaluate the value of each source included in this integrative review, I used Whittemore and Knafl's (2005) 2-point rating system where studies were assigned points based

on the following two criteria: rigour and relevance. A point was given to a report if it received a high quality rating on either the JHNEBP research or non-research evidence appraisal tools indicating a high degree of rigour. A half point was given to a report that received a good quality rating on the JHNEBP appraisal tools and no points were given to a low quality report. In relation to relevance, a point was given to a report if it explored, evaluated, or tested interventions for reducing student nurse stress in the clinical setting. Based on this rating system, a score of 2.0 denoted a high degree of rigour and relevance. Of the papers that were included in this review, one rated 2.0, four rated 1.5, and five rated 1.0 based on this rating system.

Findings

The analysis of studies revealed four primary interventions or strategies that clinical faculty could implement to mitigate student nurse stress in the clinical practice setting. I will discuss the literature according to the following interventions: peer mentoring, simulated clinical experiences, constructive teaching behaviors, and multi-modal approaches. Further, I will indicate how many of the ten included articles contributed to each of the interventions of this review.

Peer Mentoring

Mentoring is described as a planned partnership of a more experienced individual known as the mentor with a less experienced individual known as the mentee (Dorsey & Baker, 2004). The purpose of this partnership is for both the mentor and the mentee to achieve mutual benefits of personal development and growth (Dorsey & Baker, 2004). In clinical nursing education, the concept of peer mentoring seems to be a natural fit for reducing student nurse stress. In a mentor-mentee relationship, junior nursing students can gain confidence by having a more experienced

mentor assist them in navigating the unpredictable and ever-changing clinical learning environment. In this integrative review, six of the ten appraised articles explored, evaluated, or examined the use of peer mentoring as an intervention for reducing student nurse stress or anxiety in the clinical context.

Of the six articles discussed in relation to the peer mentoring intervention, I rated four of the studies as 1.0 on the 2-point rating system scale, with one point being given for relevance and no point being given for rigour (Becker & Neuwirth, 2002; Broscious & Saunders, 2001; Moscaritolo, 2009; Sprengel & Job, 2004). I rated each of these four studies as providing low quality evidence for a number of reasons. For example, Sprengel and Job's (2004) and Broscious and Saunders' (2001) evaluation studies lacked control and failed to use reliable and valid measures to evaluate the effectiveness of peer mentoring in reducing student anxiety in clinical practice. Similarly, Becker and Neuwirth (2002) did not describe the instruments used in their project evaluation, including the reliability and validity of the instruments, impacting the strength and credibility of their findings. Thus, it was unclear how the data was measured, analyzed, and interpreted in this study.

Despite the low quality of evidence from four of the six studies, I rated Giordana and Wedin's (2010) and Li, Wang, Lin, and Lee's (2010) studies as 1.5 on the 2-point rating system scale, with one point being denoted for relevance and half a point for a good quality of evidence rating. In Li et al.'s quasi-experimental study, the authors demonstrated some control by manipulating the independent variable and using consistent data collection methods. Further, their statistical interpretations and analysis of results were accurate but must be viewed in light of the fact that gender was found to be a confounding variable and may have skewed the study's results. In Giordana and Wedin's qualitative study, the researchers clearly presented the themes

that emerged from the analysis of the participants' experiences and offered specific examples and quotes of participants to support their analysis of the data. However, the rigour of this study could have been improved by performing member checks, searching for disconfirming evidence, and describing how the researchers' personal biases were controlled in the analytical process.

In the nursing literature, peer mentoring has been used as a strategy to help alleviate the stress and anxiety that junior-level nursing students can experience in their initial clinical practice experiences (Becker & Neuwirth, 2002; Broscious & Saunders, 2001; Giordana & Wedin, 2010; Li et al., 2010; Sprengel & Job, 2004). With the exception of the study by Li et al. (2010), all other articles analyzed in relation to this intervention used peer mentors for the first one or two days of the mentees' initial clinical practice experience to help the mentees adjust to the student nurse role and cope with the stress inherent in clinical learning. Of these articles, Broscious and Saunders (2001) were the only researchers that used peer mentors for two days opposed to just one day. Based on the feedback received from the mentees participating in their study, Broscious and Saunders recommended that peer mentoring be used only on the first day of clinical as the mentees perceived there to be little added value to the second day of mentorship.

Looking at the study by Becker and Neuwirth (2002), it differed in a distinct way from the other peer mentoring studies examined in this review. Becker and Neuwirth described a peer mentoring program that utilized two senior nursing students as teaching assistants to support junior nursing students on the first day of a two day clinical experience whereas the other programs paired each junior student with a senior student (Broscious & Saunders, 2001; Giordana & Wedin, 2010; Sprengel & Job, 2004). Despite only having two senior students serve as mentors, Becker and Neuwirth found that 87% of junior nursing students reported improved clinical performance as a result of a significant decrease in anxiety in clinical practice. Students

attributed this decrease in anxiety to the presence of the senior teaching assistants as they were an additional resource for students to go to for assistance. Similarly, other studies reported a decrease in student nurse stress and anxiety related to the presence of peer mentors in the clinical setting (Broscious & Saunders, 2001; Sprengel & Job, 2004). Giordana and Wedin (2010) found that mentees felt reassured by having mentors present and that this contributed to them feeling less vulnerable and more comfortable during their first clinical experience.

Li et al.'s (2010) study also differed from the other peer mentoring studies by using peer mentors from the same class as the mentees and by pairing the mentors and mentees for the duration of the students' clinical rotation. The mentors were junior nursing students who had a junior college nursing certification, a Registered Nurse license, and previous medical-surgical experience prior to entering the baccalaureate nursing program. Interestingly, the findings of this study did not support the use of peer mentoring in decreasing student nurse stress when comparing the stress levels between students who were paired with mentors and those who were not. It was determined that after two weeks of the peer mentoring experience the mentees described feeling more confident in their student nurse role indicating that the peer mentors may only have been needed for the beginning part of the practice experience (Li et al., 2010).

It should be noted that several issues could arise from delineating mentors from the same class of students as the mentees such as not having enough appropriate mentors and creating a power differential amongst students. Further, students could feel uncomfortable or embarrassed asking for help from their fellow peers (Moscaritolo, 2009). In Li et al.'s (2010) study, the mentor and the mentee each had a patient assignment and were expected to work together leading the mentors to feel stressed about splitting their time between their mentees and their patients. The mentors also described experiencing stress when their mentees had different

learning styles from them. Thus, this type of mentor-mentee relationship may not be appropriate to use in clinical nursing education.

Despite the findings of Li et al.'s (2010) study, peer mentoring has been found to be successful in alleviating student nurse stress and anxiety in junior students' initial clinical practice experiences (Becker & Neuwirth, 2002; Broscious & Saunders, 2001; Giordana & Wedin, 2010; Moscaritolo, 2009; Sprengel & Job, 2004). Mentees described feeling more confident and at ease in their clinical placements from being partnered with senior students (Broscious & Saunders, 2001; Sprengel & Job, 2004) and from witnessing mentors model nursing care (Giordana & Wedin, 2010). As Giordana and Wedin (2010) put it, "seeing the living reality of a senior nursing student who seemed self-assured and competent was monumental" (p.395) for the mentees. Clinical faculty reported that having senior students present during clinical allowed them to provide more learning opportunities for students and increased their comfort in regards to patient safety (Becker & Neuwirth, 2002). Further, clinical faculty felt that mentees were able to better sequence nursing care (Giordana & Wedin, 2010) and worked harder on clinical assignments (Li et al., 2010) in comparison to students who were not mentored.

Even though peer mentoring has been found to decrease student nurse stress and anxiety in clinical, there are several issues that have been reported by mentors and mentees. These issues included mentors taking over too much care and delegating unpleasant tasks to mentees (Giordana & Wedin, 2010), mentees being afraid to bother their mentors with questions (Li et al., 2010), and mentors wanting to do nursing skills themselves rather than guiding mentees through them (Broscious & Saunders, 2001). Some mentors commented that they felt like mentees just wanted the easy answer to problems or questions (Li et al., 2010) and that some mentees lacked motivation or initiative during this experience (Sprengel & Job, 2004). On the

other hand, some mentees experiences were negatively impacted by mentors that lacked assertiveness or confidence, that were quiet or timid, or that were less knowledgeable (Sprengel & Job, 2004).

Based on the findings of this review, there are several teaching implications that clinical faculty should consider when implementing a peer mentoring intervention. Clinical faculty should consider how they will prepare students for the mentor and mentee roles, how they will support and guide students in this experience, and how they will address any issues that may arise. Further, clinical faculty should consider how they will meet the needs of both the mentors and the mentees and how they will evaluate the value and effectiveness of the experience so that appropriate adjustments can be made for future implementation of this intervention.

I appraised the overall quality of evidence supporting this intervention for mitigating student nurse stress in the clinical setting as low. Despite this low quality evidence rating, I believe that this intervention holds promise in addressing this practice issue as the initial findings of five of the six articles suggested that peer mentors could help junior nursing students cope with some of the stressors inherent in clinical practice. However, it is apparent that further research needs to be done using more rigorous methods so as to substantiate the findings of the studies appraised in this review and to support the uptake of this strategy by clinical faculty. Thus, future research should be aimed at performing randomized-controlled studies to improve the strength and quality of evidence supporting this intervention. In addition, further qualitative analysis would be beneficial so that clinical faculty could gain a deeper understanding of students' experiences of peer mentoring and thus, make evidence-based revisions to this intervention to better suit students' needs.

Simulated Clinical Experiences

Simulation labs are becoming more common in baccalaureate nursing programs as they are linked to improved learning outcomes and performance (Nehring & Lashley, 2004). Another benefit of simulation labs revealed by this review is the reduction of junior nursing students' anxiety levels prior to their first clinical practice experiences (Bremner, Aduddel, & Amason, 2008; Gore, Hunt, Parker, & Raines, 2011). By providing novice nursing students with the opportunity to practice their skills and knowledge on human patient simulators, clinical faculty are enabling students to gain more confidence and comfort in their abilities as nurses which can translate into lower levels of anxiety when faced with real life nursing practice situations (Bremner et al., 2008; Bremner, Aduddell, Bennett, & VanGeest, 2006). Out of the ten articles appraised in this review, two articles examined the effects of simulation on junior student nurses' anxiety levels prior to their first clinical experience.

Looking at the two studies supporting the simulation intervention, I rated Gore et al.'s (2011) work as 2.0 on the 2-point rating system scale. I rated Bremner et al.'s (2008) study as 1.0, with one point for relevance and no point for its low quality evidence rating. The researchers of both studies had sufficient sample sizes, randomized the participants to an intervention and a control group, and manipulated the independent variable. However, Bremner et al. did not present the results of the chi-square test and the figures used in the study in a clear manner. Further, this study lacked adequate information on the measurement of variables and did not control for confounding variables which could have influenced the study's findings. Lastly, Bremner et al. did not relate the results and recommendations to the existing literature, nor did they identify the limitations of the study which weakened the quality of evidence of this research. Overall, the evidence offered by these two studies was of low to high quality indicating the need

for further research on the use of simulation as an intervention in decreasing student nurse stress and anxiety in the clinical setting.

Based on the findings of the studies by Gore et al. (2011) and Bremner et al. (2008), simulated clinical experiences has been found to be an effective intervention in reducing junior nursing students' anxiety levels prior to their first actual patient care experiences in the hospital setting. Gore et al. found that the intervention group's anxiety scores were significantly lower than the control group's anxiety scores prior to their first clinical experience. Similarly, Bremner et al. found that participants who received the human patient simulator session had a decrease in anxiety levels as evidenced by the lower anxiety scores of the experimental group in comparison to the anxiety scores of the control group one week after their first clinical experience.

After participating in a simulated clinical experience, students reported feeling more confident in their nursing skills and better prepared for clinical practice (Bremner et al., 2008; Gore et al., 2011). Further, students identified that the realism of using a patient simulator added to the development of their physical assessment skills as they were able to practice on mannequins that had physiological sounds and functions (Bremner et al., 2008). For example, when assessing a patient simulator, students were able to practice listening to breath sounds and learned to distinguish what is normal versus abnormal in a safe, controlled setting. Although students' experiences using patient simulators were on a whole positive, some students described not having enough individual time to work with the simulator and that a considerable amount of time and effort went in to working the computer that controlled the functions of the simulator (Bremner et al., 2008). Lastly, students described the challenge associated with practicing their communication skills on a mannequin opposed to a real person (Bremner et al., 2008; Gore et al., 2011). As communication is a central component of nursing care and practice, it is important for

clinical faculty to find ways to improve the verbal interaction between students and the patient simulators when using this intervention.

When taking part in a simulated clinical experience, students are instructed to care for the simulator as they would a real patient (Bremner et al., 2008; Gore et al., 2011). In their study, Gore et al. (2011) developed a mock medical-surgical unit simulation where nursing students first participated in a preconference to review the objectives and expectations of the simulated experience. Next, students reviewed the patients' charts and then took part in a faculty led discussion on different patient scenarios. Students then provided bedside care, developed and implemented a care plan for their assigned patients, and charted their care. The last stage of this simulated experience involved debriefing and guided reflection with two faculty members (Gore et al., 2011). While Bremner et al. (2008) did not specify how the patient simulated session was facilitated in their study, they identified specific criteria for success when using patient simulators with junior nursing students such as clear learning outcomes and time for debriefing and reflection after the session which were both elements used in Gore et al.'s simulated clinical experience.

The use of simulation sessions by clinical faculty provides junior students with the opportunity to practice their nursing skills in a safe, controlled learning environment prior to their initial clinical practice experiences. When implementing a simulation intervention, clinical faculty should consider developing comprehensive simulation sessions with the help of students so as to maximize students' learning, meet students' educational needs, and reduce student stress and anxiety. Further, clinical faculty should become comfortable using patient simulators so that time is not wasted on working the simulation computer system. Lastly, clinical faculty should

consider the length of the simulation session, the number of students assigned to practice on each simulator, and time for debriefing and reflection.

Overall, both simulation studies offered adequate evidence to support the use of patient simulators as an approach to decrease junior student nurses' anxiety levels prior to their first clinical experience. However, as simulation is a costly intervention, it is important that research continues to support its use in nursing education programs. Further research could be directed towards exploring and examining the effects of using simulation with different levels of nursing students to help gain clarity on whether or not it is effective in decreasing stress and anxiety in second, third, and fourth year students during their clinical rotations. The use of simulation for mitigating student nurse stress is a relatively unexplored area in nursing research and warrants further investigation based on the evidence provided by the two studies evaluated in this review.

Constructive Teaching Behaviors

The association between students' perceptions of clinical nursing faculty teaching behaviors and their stress and anxiety in the clinical learning environment is a prominent theme in the nursing literature (Jahanpour et al., 2010; Melincavage, 2011; Shipton, 2002). By adopting constructive teaching behaviors, such as creating an inviting ambience or using humor, clinical faculty have the opportunity to create a more positive learning environment that can improve students' self concept and lessen their stress and anxiety (Cook, 2005; Hayden-Miles, 2002). Intentionally implementing constructive teaching behaviors in the clinical setting is a simple, yet effective strategy that could alleviate this common clinical stressor experienced by nursing students (Cook, 2005; Moscaritolo, 2009). In this review, two articles explored the use of teaching behaviors as an intervention for alleviating student nurse stress and anxiety in clinical.

The overall quality of evidence supporting constructive teaching behaviors was low to good. While Moscaritolo's (2009) article was relevant to this review, I rated the quality of evidence as low because the search strategy used to obtain the articles summarized in this literature review was poorly described as the inclusion/exclusion criteria, key words, and databases used were not specified. The lack of a clear literature search process made it difficult to understand how and why the articles in Moscaritolo's review were chosen. Overall, Moscaritolo does not provide sufficient evidence, nor expertise, to support that the use of humor as an effective intervention in decreasing student nurse anxiety in the clinical setting.

I rated Cook's (2005) study as 1.5 on the 2-point rating system scale, with one point being given for relevance and half a point for good quality evidence. Cook's (2005) non-experimental research study had a sufficient sample size; clear and consistent data collection methods; reliable and valid instruments; accurate results that were consistent with the theoretical framework and hypotheses; and appropriate recommendations for future research. One limitation was that there was a high degree of multicollinearity between the personally and professionally inviting subscales of the instrument used to measure students' perceptions of their clinical faculty's teaching behaviors. The high degree of multicollinearity indicates that these two subscales are closely linked and that the results from the individual subscales may be invalid or redundant. However, the evidence provided by this study is adequate and supports the use of inviting teaching behaviors in reducing student nurse stress in clinical learning.

Based on the Invitational Education Theory by Novak and Purkey (2001), Cook (2005) found that nursing students who perceived clinical faculty to convey inviting teaching behaviors reported lower anxiety levels and those who perceived disinviting teaching behaviors reported higher anxiety levels. By conveying inviting teaching behaviors, clinical faculty can demonstrate

trust, respect, care, and optimism towards nursing students, whereas when clinical faculty exhibit disinviting teaching, they can dissuade, discourage, and overpower students during their clinical experiences (Cook, 2005). Although Cook does not offer specific inviting teaching behaviors that clinical faculty could implement to mitigate student nurse stress, one potential constructive teaching behavior is humor (Moscaritolo, 2009). Clinical faculty can inject humor into students' clinical practice experiences through the use of jokes, anecdotes, humorous stories, or having a lighthearted attitude related to clinical content (Moscaritolo, 2009). However, it is important to note that clinical faculty must be conscious of how they use humor in the clinical setting as it may not always be appropriate or appreciated, and as a result, could be considered as a disinviting teaching behavior by students.

While the implementation of inviting teaching behaviors by clinical faculty was found to be an effective intervention in decreasing student nurse anxiety (Cook, 2005), the use of humor to address student nurse stress and anxiety in the clinical setting was not supported in this review. Moscaritolo (2009) claimed that the use of humor was one of three strategies described in the literature as being successful in decreasing student anxiety in the clinical learning environment; however, this claim was not supported based on the articles that were summarized in this article. Moscaritolo summarized one study that explored the use of humor in the classroom, not the clinical setting, as a strategy to decrease stress and anxiety and reviewed another article that examined the use of humor in the clinical setting but that did not address the issue of student nurse stress and/or anxiety. Thus, it is debatable whether humor is an effective teaching behavior that clinical faculty could use to address the practice issue of concern.

Since humor has not been specifically examined in the clinical setting, clinical faculty who wish to use this constructive teaching behavior should proceed with caution. Of utmost

importance is for clinical faculty to ensure that humor is being used appropriately and sensitively. In particular, clinical faculty should avoid jokes, stories, or actions that may be perceived as stereotypical, sarcastic, racist, or in any way offensive to students (Moscaritolo, 2009). To ensure that their teaching behaviors are being perceived in a constructive way, clinical faculty should consider becoming more familiar with the invitational educational model (Novak & Purkey, 2001). Using the invitational educational model, clinical faculty can learn how to be more aware of their teaching behaviors and how to be more intentionally inviting in their interactions with students.

There is limited research on the use of constructive teaching behaviors to reduce student nurse stress and anxiety in the clinical learning environment; however, as it is a simple strategy that any clinical instructor could implement, it necessitates further research. Both qualitative and quantitative studies would be beneficial to gain a comprehensive understanding of constructive teaching behaviors on student nurse stress in the clinical setting. For example, researchers could use a qualitative method to gain deeper insight into what teaching behaviors decrease or increase student nurse stress and why these teaching behaviors have this effect. Quantitative research could be directed towards evaluating the effects and outcomes of clinical faculty intentionally implementing constructive teaching behaviors, such as humor, on student nurse stress and anxiety. With further research that supports the use of constructive teaching behaviors, nursing programs may consider putting more resources towards cultivating clinical faculty's professional and personal growth towards being more constructive and inviting teachers.

Multi-Modal Approaches

The last type of intervention revealed by this review was multi-modal approaches to reducing student nurse stress and anxiety in the clinical learning environment. A multi-modal approach, where a combination of different stress-reducing strategies is used, can address the different clinical stressors experienced by student nurses. In my review of the literature, I found only one study that supported this type of intervention. As multi-modal approaches does not fit with the other interventions discussed in this review, I chose to include it as its own distinct type of intervention for clinical faculty to consider when tackling this practice issue in their own nursing education practices.

As there was only one study that examined multi-modal approaches for reducing student nurse stress and anxiety, the overall quality of evidence for this intervention was good. I rated Watt, Murphy, Pascoe, Scanlon, and Gan's (2011) non-experimental study as 1.5, with one point for relevancy and half a point for a good quality evidence rating. The sample size was sufficient, the data collection methods were clear and consistent, the reliability and validity of the instruments were supported, the statistical interpretation and analysis was accurate, the results were consistent and clearly presented, and the limitations of the study were recognized by the authors. In regards to the study limitations, Watt et al. identified several threats to the internal and external validity of the study such as maturation, testing, response bias, and the Hawthorne effect. Further weaknesses include a limited description of the sample characteristics and minimal recommendations for practice and research. Overall, this study offers adequate evidence to support the development and research of multi-modal interventions for reducing student nurse stress in the clinical setting.

In the form of a three day structured learning program, Watt et al. (2011) developed a multi-modal approach to reduce student anxiety and increase student self-efficacy prior to the start of senior nursing students' acute care clinical rotation. This program consisted of the following methods: group learning, peer mentoring, reflection activities, and simulation. The findings of this review suggest that peer mentoring and simulation can be effective interventions in reducing junior nursing students' stress in their initial clinical practice experiences (Becker & Neuwirth, 2002; Bremner et al., 2008; Broscious & Saunders, 2001; Giordana & Wedin, 2010; Gore et al., 2011; Moscaritolo, 2009; Sprengel & Job, 2004); however, both of these interventions have not been studied in the senior nursing student population. Further, group learning and reflection have not been examined as interventions to reduce student nurse stress in clinical but were chosen by the researchers for their potential in attending to the practice issue at hand based on a review of the literature.

Despite the lack of support for the learning methods used in this structured learning program in decreasing senior student nurse stress and anxiety, Watt et al. (2011) found a statistically significant reduction in senior student anxiety and an increase in self-efficacy in after participation in this multi-modal approach. The researchers also discovered that there was no significant difference in the baseline level of anxiety and self-efficacy of all participants meaning that these levels were not dependent on whether this was the students first, second, or third placement. Therefore, this finding supports that this intervention could benefit all final year students regardless of whether they have had a recent clinical placement or not. Lastly, the researchers discovered a significant inverse relationship between baseline anxiety and self-efficacy such that students' reporting high levels of anxiety had lower levels of self-efficacy and vice versa.

When using a multi-modal approach, clinical faculty should consider if there is adequate or convincing evidence that supports the use of each chosen method in relation to the reduction of student nurse stress in the clinical setting. Further, clinical faculty should consider the level of the nursing students and the type of clinical placement that they will be commencing so that the multi-modal instructional methods can be tailored to their learning objectives and needs. Lastly, clinical faculty should evaluate the outcomes of using a combination of different instructional methods and consider publishing their findings to enhance clinical nursing education practices.

Although the findings of Watt et al.'s (2011) study indicate that the stress levels of final year students decreased after participating in this program, it is the first study of its kind in the nursing literature and thus, merits further investigation. To increase the generalizability of the findings, future research could be aimed at examining the effectiveness of this structured learning program in other nursing programs to see if the results can be replicated. Further, using a randomized-controlled study would control for extraneous variables and address some of the limitations of this study. As this is a relatively unexplored intervention, a qualitative study could be conducted to explore whether students perceived if it was the combination of the different learning modalities or just one aspect of the program that helped alleviate their anxiety and improve their self-efficacy. Overall, further research is needed to substantiate the findings of this study and to support the use of multi-modal approaches for addressing this practice issue.

Discussion

Although the issue of student nurse stress in the clinical context is prevalent in the nursing literature, interventional studies aimed at decreasing student stress in this area is scant. In this paper, 10 research and non-research studies were reviewed and critiqued for strength and

quality of evidence. The overall quality of evidence for peer mentoring was determined to be low, for simulation was low to high, for constructive teaching behaviors was low to good, and for multi-modal instructional methods was good. While four studies critiqued had a good quality evidence rating, only one study received a high quality evidence rating and five studies received a low quality evidence rating indicating the need for further research aimed at addressing this practice issue.

The majority of studies analyzed in this review explored or evaluated the use of peer mentoring as a strategy for reducing student nurse stress and anxiety in the clinical learning environment. Even though I appraised the overall quality of evidence in relation to peer mentoring as being low, I believe that this intervention can reduce student nurse stress and anxiety when implemented appropriately by clinical faculty during students' initial clinical experiences. Based on an analysis of these programs, I determined that there are several key elements that clinical faculty must consider when designing and implementing a peer mentoring strategy such as the preparation of students to the mentor and the mentee roles, the time frame of the mentor-mentee relationship, and the support offered to students so that they can get the most out of this experience. To prepare mentees, clinical nursing faculty could clearly explain clinical objectives and expectations, the mentor-mentee relationship, and how to work with peer mentors (Broscious & Saunders, 2001; Li et al., 2010; Sprengel & Job, 2004). For the mentors, clinical nursing faculty could discuss how to be effective mentors to mentees, how to work with mentees, and how to help mentees meet their clinical objectives (Broscious & Saunders, 2001; Li et al., 2010; Sprengel & Job, 2004). Further, clinical faculty should provide students with the opportunity to meet prior to the mentorship experience so that students get to know each other.

In regards to the time frame for the mentorship experience, the studies included in this review supported the use of peer mentoring for the first day of junior students' initial clinical practice experiences (Becker & Neuwirth, 2002; Broscious & Saunders, 2001; Giordana & Wedin, 2010; Sprengel & Job, 2004). However, future research could be aimed at comparing the use of peer mentors at different points in a clinical rotation. For example, would junior nursing students benefit from being paired with a mentor at several key points during their initial clinical rotation rather than for just one day? Another element that clinical faculty must consider is how they will support students in this experience. Clinical faculty could offer students one-on-one time, journaling, and conferences to debrief (Li et al., 2010; Sprengel & Job, 2004). Lastly, clinical faculty need to recognize that not all senior students have the appropriate skills or knowledge necessary for being effective mentors to junior students and that these senior students may require more support in the peer mentoring experience. It is imperative for clinical faculty to nurture mentoring skills in senior students as they will be expected to take on this role in their future professional nursing practices.

A potential barrier for implementing a peer mentoring program could be if senior and junior nursing students follow different curricula and if senior students have more academic and clinical demands making it challenging for them to serve as mentors. Broscious and Saunders (2001) overcame this barrier by having senior students act as peer mentors in lieu of two of their scheduled clinical practice days. Likewise, faculty could work with senior students to accommodate their individual academic and clinical schedules so that they could participate in peer mentoring (Becker & Neuwirth, 2002). Overall, I believe that, within the context of clinical nursing education, peer mentoring is a feasible and cost-effective approach to address student nurse stress in the context of clinical learning.

Another intervention that clinical faculty could use in the clinical setting is simulation. For developing a simulated clinical experience that is unique to students' needs and experiences, clinical faculty can draw on the evidence-based practices recommended by Bremner et al. (2008) which include creating clear learning outcomes based on both course and clinical objectives; involving students in the planning, implementation, and evaluation of simulation sessions; and setting aside time after the session for debriefing and reflection amongst students and clinical faculty.

Looking at Gore et al.'s (2011) study, the researchers offered a well-designed simulation experience where students worked through patient scenarios on simulators. This simulation experience supported student-centered learning by placing junior nursing students at the center of the learning process, by encouraging group work and collegiality amongst students in the simulation lab, and by encouraging clinical faculty and students to share the responsibility of learning (Oermann, 2007). Similarly, Bremner et al.'s (2008) recommendations also supported student-centered learning by including students in the planning, implementation, and evaluation process. In my own nursing education practice, I strive to place the learner at the center of the educational experience and to encourage students to be active in the learning process. Thus, I believe that the use of simulation can not only benefit students' through reducing their stress and anxiety, but also by facilitating their learning and growth as nurses.

To have the greatest effect on students' anxiety and self worth, clinical instructors need to intentionally convey inviting teaching behaviors and avoid disinviting teaching behaviors (Cook, 2005). In order to be intentionally inviting, clinical faculty must be continually conscious of their teaching behaviors in the clinical setting and actively work on how they communicate with students (Cook, 2005). Clinical faculty can achieve this through either reflection-in-action or

reflection-on-action. With reflection-in-action, "a series of on-the-spot reflective clinical judgments [are] made in the midst of an evolving practice situation" (Rolfe & Gardner, 2005, p.308) so that the clinical instructor can transform their teaching behaviors in light of immediate feedback from their interactions with students. Reflection-on-action, on the other hand, is an internal process where one mulls over their experiences to gain deeper understandings, new insights, or changes in perspectives (Bourner, 2003). By using both types of reflection, clinical instructors can take immediate action on their teaching behaviors and then later revisit their actions for further understanding and meaning.

A specific constructive teaching behavior that clinical faculty could implement is humor. Humor has been found to be effective in alleviating student nurse anxiety in the classroom setting and may have the potential to address this practice issue in the clinical setting (Moscaritolo, 2009). As Hayden-Miles (2002) put it, the use of "humor meant students were free from intimidation and free to learn. It transformed their relationships with their clinical instructors into ones in which they were empowered, rather than dominated (p. 423). For using humor, clinical faculty could drawn on the guidelines offered by Ulloth (2003) which include developing a sense of humor and presentation style for effective delivery of humor; being spontaneous and using humor often; and being sensitive to emotional students and avoiding offensive humor. As humor has the potential to change how students perceive their clinical instructors' teaching behaviors, it necessitates further inquiry in its role and effectiveness in the clinical setting in terms of reducing student stress and anxiety.

Some clinical faculty members may struggle with using constructive teaching behaviors in their interactions with students. Therefore, it is important for nursing education programs to consider how they can promote and encourage the development and growth of constructive

teaching behaviors in their faculty members. One way to achieve this is for nursing education programs to support clinical faculty in attending workshops to develop inviting educational practices. Further, educators involved in the development and revisions of nursing programs need to consider if the policies and processes in the educational environment support clinical faculty to be inviting and constructive teachers.

Lastly, clinical faculty can consider implementing multi-modal instructional methods to not only reduce student nurse stress and anxiety, but to also enhance student self-efficacy prior to students' clinical practice experiences. By carefully choosing evidence-based instructional methods, clinical faculty have the opportunity to tailor this intervention towards meeting the specific needs of a group of nursing students and to address any potential stressors inherent in students current clinical practice placements. By doing so, clinical faculty can appropriately structure this intervention around the knowledge and skills that students will be expected to know for their current clinical rotations and better prepare students for the realities of a particular practice setting.

Based on the findings of this integrative review, there are only three other evidence-based interventions – peer mentoring, simulation, and constructive teaching behaviors – for clinical faculty to draw on when designing a multi-modal approach for student nurse stress reduction. In Watt et al.'s (2011) study, the combination of peer mentoring and simulation, along with two additional teaching strategies, was found to be effective in reducing student nurse anxiety. However, due to the limited number of evidence-based interventions available, clinical faculty should also consider incorporating and evaluating interventions that have been found to be successful in reducing student nurse stress in the classroom setting as they may have a similar effect in the clinical setting. For example, clinical faculty could consider using diaphragmatic

breathing (Consolo, Fusner, & Staib, 2008), group therapy (Scherer, Scherer, & Carvalho, 2007), autogenic training (Kanji, White, & Ernst, 2006), psychological and educational counseling (Sharif & Armitage, 2004), problem-solving learning (Melo et al., 2010), and meditation techniques (Kang, Choi, & Ryu, 2009). Lastly, it is imperative that clinical faculty evaluate the outcomes and effects of new multi-modal approaches so as to enhance clinical nursing education research on the practice issue of concern to this review.

Overall, there are four primary interventions – peer mentoring, simulation, constructive teaching behaviors, and multi-modal instructional methods – that have been explored, evaluated, or examined in nursing research to address the issue of student nurse stress and anxiety in the clinical learning environment. While the findings of the studies appraised in this review suggest that these four interventions have the potential to address this practice, it is evident that further research is needed so as to substantiate the findings of these studies and to evaluate other stress-reducing interventions that have been found to be effective in reducing student nurse stress and anxiety but that have not been specifically explored in the clinical setting. One such intervention is Mindfulness-based stress reduction (MBSR) (Kabat-Zinn, 1990).

Mindfulness-based stress reduction is an intervention that requires time, resources, and commitment by clinical faculty. What distinguishes this intervention from the other stress-reducing interventions explored in this review is that MBSR fosters students to build stress management skills and self care capacities necessary to not only manage the stress experienced in clinical, but also in their future nursing practices and personal lives. Thus, I believe that MBSR has the potential to address the issue of student nurse stress in the context of clinical learning. A discussion will follow on the core components of MBSR and the potential benefits of implementing a MBSR intervention in the clinical learning environment.

Mindfulness-Based Stress Reduction

Mindfulness-based stress reduction (MBSR) was developed by Jon Kabat-Zinn in 1979 as an eight week structured course offered through an outpatient stress reduction clinic at the University of Massachusetts Medical Center with the goal of relieving patient suffering (Kabat-Zinn, 2003). Since then, MBSR programs have been used in both clinical and nonclinical groups to help people cope with the distress and disability inherent in everyday life, along with situations of serious illness or stress (Grossman, Niemann, Schmidt, & Walach, 2004). It has also been used as an intervention for helping health care professionals, including medical and nursing students, cope with stress and enhance their well-being (Cohen-Katz, Wiley, Capuano, Baker, & Shapiro, 2004; Irving, Dobkin, & Park, 2009; Kang et al., 2009; Mackenzie, Poulin, & Seidman-Carlson, 2006; Poulin, Mackenzie, Soloway, & Karayolas, 2008; Rosenzweig, Reibel, Greeson, & Brainard, 2003; Shapiro, Schwartz, & Bonner, 1998).

Mindfulness can be defined as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003, p.145). This moment-to-moment awareness helps individuals be mindful of when they are dwelling on the past or future so that they can redirect their attention to the present. MBSR consists of three formal meditation techniques – sitting meditation, body scanning, and hatha yoga – that require regular, disciplined practice in daily life for participants to reap benefits (Kabat-Zinn, 1990). Central to all three formal practices is breathing. By being mindful of breathing, participants can calm the body and the mind and focus on the present (Kabat-Zinn, 1990).

In nursing education research, MBSR has been explored in a limited number of studies as a possible intervention for mitigating student nurse stress and anxiety. Although these studies

have not explicitly explored MBSR in the clinical context, their findings suggest that an eight week MBSR program could be an effective intervention for reducing the stress and anxiety experienced by student nurses in their nursing education programs (Beddoe & Murphy, 2004; Kang et al. , 2009; Young, Bruce, Turner, VanderWal, & Linden, 2001). For example, students have described that an eight week MBSR helped them be more aware of how they responded and reacted to stressors and contributed to them achieving and maintaining a balance in their lives (Young et al., 2001). Further, students' have reported being able to correct negative health behaviors and habits, improve self-care, and handle stressful situations (Beddoe & Murphy, 2004). With that being said, students have described the challenges associated with learning formal meditative practice techniques and incorporating them into their current lives (Young et al., 2001). Despite these challenges, students felt that they benefited from participating in a MBSR program in regards to their stress or anxiety and their health (Beddoe & Murphy, 2004; Young et al., 2001)

Of particular interest to this review is the research study by Kang et al. (2009) which examined the effectiveness of MBSR on the stress, anxiety, and depression levels of student nurses in Korea. Interestingly, the researchers highlighted that student nurse participants experienced the stressful situation of starting their clinical rotations during the course of the study, but the intervention group's stress scores decreased in a period of time where their stress levels would be expected to increase indicating the potential for MBSR to be an effective strategy in helping students manage and cope with the stress experienced in clinical practice.

There are several considerations that must be kept in mind when developing a MBSR program such as the length of the program, how it will be incorporated into the nursing curriculum, and who will teach the program. Traditionally, MBSR is taught as an eight week

program (Kabat-Zinn, 1990); however, brief four week MBSR programs have been found to be efficacious in reducing stress (Mackenzie et al., 2006; Poulin et al., 2008) and may be a more feasible option for some nursing programs. When implementing MBSR, clinical nurse educators may be challenged with how to find the space for such a program in an already full curriculum. With medical students, MBSR has been offered as an elective course or seminar (Rosenzweig et al., 2003; Shapiro et al., 1998). Lastly, and most importantly, clinical faculty must consider who will teach the mindfulness-based techniques to students. MBSR teachers must actively practice mindfulness meditation and have an in-depth understanding of the MBSR curriculum in order to effectively teach it to students (Kabat-Zinn, 2003). As it may be challenging to find a qualified MBSR instructor, clinical faculty members could collaborate with existing programs in their communities to find ways to offer this intervention to student nurses. For example, Young et al. (2001) collaborated with two clinical nurse specialists from a local medical facility that offered an eight-week MBSR course in order for students to participate in MBSR.

Despite the nursing literature being scant on the effects of MBSR on student nurse stress and anxiety, this intervention offers nurse educators a way to teach students how to cope with the stress inherent in their educational programs. Further, by implementing an intervention such as MBSR, clinical faculty can better prepare students to evaluate and cope with the potential stressors of clinical nursing practice so that they not only can provide safe, competent, and compassionate nursing care, but also improve their social, psychological, and physical well-being and avoid burning out (Lazarus & Folkman, 1984). Research on the effects of MBSR on student nurses' experiences of clinical sources of stress is needed.

Recommendations

Based on the evidence presented in this review, I have made several recommendations to guide clinical nurse educators in managing student nurse stress and anxiety in the clinical setting and to direct future research on this topic.

Implementing Stress-Reducing Interventions

When implementing a peer mentoring program, I recommend that clinical faculty use mentors that are in a higher level of the program than mentees (Li et al., 2010), that mentors and mentees meet prior to the experience to establish a rapport (Broscious & Saunders, 2001; Sprengel & Job, 2004), that clinical faculty consider the time demands of the mentors and work with them to alleviate any issues (Becker & Neuwirth, 2002), and that the experience lasts only one day (Broscious & Saunders, 2001). Further, clinical faculty should consider orientating mentors and mentees to their respective roles (Sprengel & Job, 2004).

For simulation, I recommend that clinical faculty use simulated clinical experiences before the start of students' clinical rotations (Bremner et al., 2008; Gore et al., 2011) and that they develop structured simulation sessions that promote student-centered learning. In particular, clinical faculty should incorporate students into the planning process, should consider students' learning needs in relation to their current clinical placements, and should allow for debriefing and reflection at the end of the session (Bremner et al., 2008; Gore et al., 2011).

For constructive teaching behaviors, I recommend that clinical faculty take a moment to reflect on their teaching behaviors so that they can first understand how their teaching behaviors are being perceived by students and then make a conscious and deliberate effort to modify their teaching behaviors so that they can be more intentionally inviting in their teaching practices

(Cook, 2005). I also recommend nursing programs develop workshops or seminars about inviting educational practices and provide clinical faculty with opportunities to debrief or reflect upon their teaching behaviors.

Lastly, for a multi-modal approach, I recommend that clinical faculty consider the evidence supporting each chosen method before using it as a means to reduce student nurse stress and anxiety. Further, I recommend that clinical faculty elicit feedback from students and staff nurses working with students in order to develop a multi-modal approach that is specific to the learning needs of students and the stressors in a particular clinical setting (Watt et al., 2011).

Taking an Active Role in Research

In order to further the research on this practice issue, I recommend for clinical nurse educators to take on a more active role in clinical nursing education research. Specifically, I recommend that clinical faculty review the evidence of the interventions analyzed in this review, develop a proposal for a pilot project specific to an intervention of their choice, and then present the proposal to their nursing education institutions. If accepted, clinical faculty would then have the opportunity to implement a stress-related intervention, evaluate or examine its effectiveness in reducing student nurse stress, and hopefully, aim to publish the results of the pilot project. By being more active in nursing research, clinical faculty can start to fill the gap in the area of interventions for addressing the issue of student nurse stress in the clinical setting.

Conclusion

Student nurse stress in the clinical setting is an area of concern in nursing education; yet, few studies exist in the literature that have focused on exploring, examining, or evaluating interventions that nurse educators could implement to assist nursing students to better cope with

the stress experienced in the clinical learning environment. In this integrative review, four interventions were revealed that have the potential to address this practice issue but the quality and quantity of evidence supporting these interventions is lacking. It is evident that further research is needed to not only demonstrate the efficacy of these interventions, but to also explore other interventions, such as Mindfulness-based stress reduction, that could reduce student nurse stress in clinical practice. The findings of this review will help guide clinical instructors in making informed decisions regarding the implementation of reviewed interventions and the recommendations will assist clinical instructors to understand their role in decreasing student stress through evaluating their teaching practices and contributing to nursing education research.

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Appendix A

Method of Article Retrieval

Databases/Search Method	**CINAHL**	**PsycINFO**	**Ancestry Search & Manual Search**
Number of Articles Found in Each Database/Search Method	7	1	2

Appendix B

JHNEBP Research Evidence Appraisal

Evidence Level:_____

ARTICLE TITLE:					NUMBER:
AUTHOR(S):					DATE:
JOURNAL:					
SETTING:				SAMPLE (COMPOSITION/SIZE)	
☐ Experimental	☐ Meta-analysis	☐ Quasi-experimental	☐ Non-experimental	☐ Qualitative	☐ Meta-synthesis
Does this study apply to my patient population?				☐Yes	☐No
If the answer is No, STOP here (unless there are similar characteristics).					
Strength of Study Design					
• Was sample size adequate and appropriate?				☐Yes	☐No
• Were study participants randomized?				☐Yes	☐No
• Was there an intervention?				☐Yes	☐No
• Was there a control group?				☐Yes	☐No
• If there was more than one group, were groups equally treated, except for the intervention?				☐Yes	☐No
• Was there adequate description of the data collection methods				☐Yes	☐No
Study Results					
• Were results clearly presented?				☐Yes	☐No
• Was an interpretation/analysis provided?				☐Yes	☐No
Study Conclusions					
• Were conclusions based on clearly presented results?				☐Yes	☐No
• Were study limitations identified and discussed?				☐Yes	☐No
PERTINENT STUDY FINDINGS AND RECOMMENDATIONS					
Will the results help me in caring for my patients?				☐Yes	☐No

Evidence Rating (scales on back)

Strength of Evidence Rating			
Quality Rating (check one)	☐ High (A)	☐ Good (B)	☐ Low/major flaws(C)

STRENGTH OF EVIDENCE

LEVEL 1 (HIGHEST)

EXPERIMENTAL STUDY (RANDOMIZED CONTROLLED TRAIL OR RCT)

- Study participants (subjects) are randomly assigned to either a treatment (TX) or control (non-treatment) group.
- May be:
  - Blind: neither subject nor investigator knows which TX subject is receiving.
  - Double-blind: neither subject nor investigator knows which TX subject is receiving.
  - Non-blind: both subject and investigator know which TX subject is receiving; used when it is felt that the knowledge of treatment is unimportant.

META-ANALYSIS OF RCTS

- Quantitatively synthesizes and analyzes results of multiple primary studies addressing a similar research question
- Statistically pools results from independent but combinable studies
- Summary statistic (effect size) is expressed in terms of direction (positive, negative, or zero) and magnitude (high, medium, small)

LEVEL 2

QUASI-EXPERIMENTAL STUDY

- Always includes manipulation of an independent variable
- Lacks either random assignment or control group.
- Findings must be considered in light of threats to validity (particularly selection)

LEVEL 3

NON-EXPERIMENTAL STUDY

- No manipulation of the independent variable.
- Can be descriptive, comparative, or relational.
- Often uses secondary data.
- Findings must be considered in light of threats to validity (particularly selection, lack of severity or co-morbidity adjustment).

QUALITATIVE STUDY

- Explorative in nature, such as interviews, observations, or focus groups.
- Starting point for studies of questions for which little research currently exists.
- Sample sizes are usually small and study results are used to design stronger studies that are more objective and quantifiable.

META-SYNTHESIS

- Research technique that critically analyzes and synthesizes findings from qualitative research
- Identifies key concepts and metaphors and determines their relationships to each other
- Aim is not to produce a summary statistic, but rather to interpret and translate findings

QUALITY RATING (SCIENTIFIC EVIDENCE)

A High quality: consistent results, sufficient sample size, adequate control, and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific evidence.

B Good quality: reasonably consistent results, sufficient sample size, some control, and fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence

C Low quality or major flaws: little evidence with inconsistent results, insufficient sample size, conclusions cannot be drawn.

Appendix C

JHNEBP Non-Research Evidence Appraisal

Evidence Level:_____

ARTICLE TITLE:			NUMBER:
AUTHOR(S):			DATE:
JOURNAL:			
☐ Systematic Review	☐ Clinical Practice Guidelines	☐ Organizational (QI, financial data)	☐ Expert opinion, case study, literature review

Does review/expert opinion address my practice question?	☐Yes	☐No
If the answer is No, STOP here (unless there are similar characteristics).		
Systematic Review		
• Is the question clear?	☐ Yes	☐ No
• Are search strategies specified, and reproducible?	☐ Yes	☐ No
• Are search strategies appropriate to include all pertinent studies?	☐ Yes	☐ No
• Are criteria for inclusion and exclusion of studies specified?	☐ Yes	☐ No
• Are details of included studies (design, methods, analysis) presented?	☐ Yes	☐ No
• Are methodological limitations disclosed?	☐ Yes	☐ No
• Are the variables in the studies reviewed similar, so that studies can be combined?	☐ Yes	☐ No
Clinical Practice Guidelines		
• Were appropriate stakeholders involved in the development of this guideline?	☐ Yes	☐ No
• Are groups to which guidelines apply and do not apply clearly stated?	☐ Yes	☐ No
• Have potential biases been eliminated?	☐ Yes	☐ No
• Were guidelines valid (reproducible search, expert consensus, independent review, current, and level of supporting evidence identified for each recommendation)?	☐ Yes	☐ No
• Are recommendations clear?	☐ Yes	☐ No
Organizational Experience		
• Was the aim of the project clearly stated?	☐ Yes	☐ No
• Is the setting similar to setting of interest?	☐ Yes	☐ No
• Was the method adequately described?	☐ Yes	☐ No
• Were measures identified?	☐ Yes	☐ No
• Were results adequately described?	☐ Yes	☐ No
• Was interpretation clear and appropriate?	☐ Yes	☐ No
Individual expert opinion, case study, literature review		
• Was evidence based on the opinion of an individual?	☐ Yes	☐ No
• Is the individual and expert on the topic?	☐ Yes	☐ No
• Is author's opinion based on scientific evidence?	☐ Yes	☐ No
• Is the author's opinion clearly stated?	☐ Yes	☐ No
• Are potential biases acknowledged?	☐ Yes	☐ No
PERTINENT CONCLUSIONS AND RECOMMENDATIONS		
Were conclusions based on the evidence presented?	☐Yes	☐No
Will the results help me in caring for my patients?	☐Yes	☐No

Quality Rating (scale on back):

Basic quality rating of the study under review (check one)	☐ High (A)	☐ Good (B)	☐ Low/major flaws(C)

STRENGTH OF EVIDENCE

LEVEL 4

SYSTEMATIC REVIEW

- Research review that compiles and summarize evidence from research studies related to a specific clinical question
- Employs comprehensive search strategies and rigorous appraisal methods
- Contains an evaluation of strengths and limitations of studies under review

CLINICAL PRACTICE GUIDELINES

- Research and experiential evidence review that systematically develops statements that are meant to guide decision-making for specific clinical circumstances
- Evidence is appraised and synthesized from three basic sources: scientific findings, clinician expertise, and patient preferences.

LEVEL 5

ORGANIZATIONAL

- Review of quality improvement studies and financial analysis reports
- Evidence is appraised and synthesized from two basic sources: internal reports and external published reports.

EXPERT OPINION, CASE STUDY, LITERATURE REVIEW

- Opinion of a nationally recognized expert based on non-research evidence (includes case studies, literature review, or personal experience).

QUALITY RATING (SUMMATIVE REVIEWS)

A High quality: well-defined, reproducible search strategies; consistent results with sufficient numbers of well-designed studies; criteria-based evaluation of overall scientific strength and quality of included studies, and definitive conclusions

B Good quality: reasonably thorough and appropriate search; reasonably consistent results, sufficient numbers of well-designed studies, evaluation of strengths and limitations of included studies, with fairly definitive results

C Low quality or major flaws: undefined, poorly defined, or limited search strategies; insufficient evidence with inconsistent results, conclusions cannot be drawn

QUALITY RATING (EXPERT OPINION)

A High quality: expertise is clearly evident.

B Good quality: expertise appears to be credible.

C Low quality or major flaws: expertise is not discernable or is dubious.

Appendix D

Reference	Evidence Type & Purpose	Sample, Sample Size, & Setting	Results	Limitations	Rating Strength/ Quality
Becker, M.K., & Neuwirth, J.M. (2002). Teaching strategy to maximize clinical experiences with beginning nursing students. *Journal of Nursing Education, 41*(2), 89-91.	Evidence Type: Organizational Purpose: To evaluate a clinical teaching assistant program on meeting students' learning needs, decreasing students' anxiety, and maintaining patient safety in clinical.	Sample: junior & senior baccalaureate nursing students Sample size: unknown Setting: private college in United States; general surgical floor	• 87% of junior nursing students reported improved clinical performance as result of significant decrease in anxiety • Increase faculty comfort in relation to patient safety, more hands one experiences, availability of more resources, increase cooperation and collaboration	• Unknown sample size • Unclear description of data collection methods (instruments not described, nor reliability and validating of instruments) • Unclear how data interpreted and analyzed • No recommendations made	1.0 Level 5/C
Bremner, M.N., Aduddell, K.F., & Amason, J.S. (2008). Evidence-based practices related to the human patient simulator and first year baccalaureate nursing students' anxiety. *Online Journal of Nursing Informatics, 12*(1), http://ojni.org/12_1/bremner.html	Evidence Type: Experimental Purpose: To examine the effects of using simulation on junior nursing students' anxiety levels prior to their first clinical experience and to explore the relationship of learning styles, coping styles, and anxiety levels of students using simulation.	Sample: senior baccalaureate nursing students Sample size: 149 senior nursing students (71 in experimental group & 78 in control group) Setting: university in United States	• Relationship of learning styles, coping styles, and anxiety levels of students using the HPS was not statistically significant • Experimental group had a decrease in anxiety levels as evidenced by lower anxiety scores of experimental group in comparison to control group one week after their first clinical experience • Recommendations: utilize other levels of students in simulation, turn off monitor, and use small groups	• Lack of control for confounding variables • Lack of information on measurement of variables even though authors included a section on "Operational Definitions" • Results of the chi-square test and the figures used could have been presented in a clearer manner and explained better • Results and recommendations not related to existing literature • Limitations not identified	1.0 Level 2/C

Broscious, S.K., & Saunders, D.J. (2001). Clinical strategies: Peer Coaching. *Nurse Educator, 26*(5), 212-214.	Evidence Type: Organizational Purpose: To evaluate a peer coaching strategy in decreasing junior nursing students' anxiety and developing senior nursing students' leadership skills.	Sample: junior & senior baccalaureate nursing students Sample size: 25 junior & 20 senior nursing students Setting: university in United States	• Most beneficial outcome identified by junior students was a decrease sense of anxiety • Other benefits included increased confidence, improved organization, and being a member of staff • For seniors, most beneficial outcome was to practice leadership skills • Juniors dissatisfied by lack of interest from some peers • Two recommendations: (1) time for peer mentor teams to meet prior to experience and (2) only one day of peer mentor experience	• Small sample, with no demographic information collected on participants • Reliability and validity of questionnaire not reported • Unclear data collection methods such as who administered and collected questionnaires, what open ended questions guided the group evaluation process, how qualitative data analyzed and interpreted	1.0 Level 5/C
Cook, L.J. (2005). Inviting teaching behaviors of clinical faculty and nursing students' anxiety. *Journal of Nursing Education, 44*(4), 156-161.	Evidence Type: Non-Experimental Purpose: To explore and compare junior and senior nursing students' perceptions of inviting teaching behaviors of clinical faculty and their anxiety levels while interacting with faculty.	Sample: junior & senior baccalaureate nursing students Sample size: 123 juniors and 106 seniors Setting: ten baccalaureate nursing programs in the United States	• Students who perceived clinical faculty to convey inviting teaching behaviors reported lower anxiety and vice versa • Junior students perceived clinical faculty as more inviting in their teaching behaviors than seniors • No significant difference in junior and senior nursing students anxiety while interacting with faculty in clinical • Recommendations: important for faculty to be intentionally conscious and aware of their teaching behaviors	• High degree of multicollinearity between personally and professionally inviting subscales of the CTS, and only content validity reported for the CTS • Ethnicity not included in demographic data questionnaire	1.5 Level 3/B

Giordana, S., & Wedin, B. (2010). Peer mentoring for multiple levels of nursing students. *Nursing Education Perspectives, 31*(6), 394-396.	Evidence Type: Qualitative Purpose: To explore the experience of junior and senior nursing students participating in a peer mentoring program	Sample: junior & senior baccalaureate nursing students Sample size: 20 junior and 20 senior nursing students Setting: nursing home	• Junior students reported feeling less anxious during their second week of clinical due to reassurance and active role modeling of care from seniors • Senior students described experience as positive due to modeling care, teaching care, and taking on the teaching role	• Authors did not perform member checks, search for disconfirming evidence, or describe how their personal biases were controlled • Findings only represent students' experiences at a particular point in time	1.5 Level 3/B
Gore, T., Hunt, C. W., Parker, F., & Raines, K. H. (2011). The effects of simulated clinical experiences on anxiety: nursing students' perspectives. *Clinical Simulation in Nursing, 7*(5), e175-e180. doi:10.1016/j.ecns.2010.02.001	Evidence Type: Experimental Purpose: To examine the effects of simulation on the anxiety levels of junior nursing students prior to their first clinical experience.	Sample: junior baccalaureate nursing students Sample size: 70 junior nursing students Setting: university in the United States	• Experimental groups' anxiety scores significantly lower than the control group's anxiety scores prior to first clinical experience • Students felt more confident in their skills and better prepared for clinical • Recommendations: more verbal interaction with patient simulators and to have seniors act as mentors during simulation	• Use of homogenous convenience sample from one school of nursing • Use of self reported test – may not reflect true feelings of participants • Recommendations not supported by literature	2.0 Level 1/A

Li, H-C., Wang, L.S., Lin, Y-H., & Lee, I. (2010). The effect of a peer-mentoring strategy on student nurse stress reduction in clinical practice. *International Nursing Review, 58*, 203-210.	Evidence Type: Quasi-Experimental Purpose: To examine the effects of a peer mentoring strategy on the stress levels of student nurses in clinical practice and to explore the advantages and disadvantages of using this strategy.	Sample: junior baccalaureate nursing students Sample size: 49 junior students (17 in experimental and 32 in control) Setting: university in Taiwan; medical-surgical unit	• Both experimental and control groups had significant reductions in stress related to certain situations but when comparing stress scores from both groups, there was no significant difference • Advantages of peer mentoring included learning from mentors, increased critical thinking, and feeling supported and more secure • Disadvantages included mentees being afraid to both their partner with questions, mentors feeling stress about not spending enough time with mentee and patients, and mentors feeling like mentees wanted easy answer to problems or questions	• Limited sample size • Effect of interaction between the two groups (did not control for two groups interacting outside of clinical) • Inadequate data collection time • Gender as a confounding variable • Did not randomize participants to experimental and control groups	1.5 Level 2/B

Moscaritolo, L.M. (2009). Interventional strategies to decrease nursing student anxiety in the clinical learning environment. *Journal of Nursing Education, 48*(1), 17-23.	Evidence Type: Literature Review Purpose: To review the literature on interventional strategies that decrease student nurse anxiety in the clinical setting.	Sample: baccalaureate nursing students Sample size: no sample size as review of literature Setting: both the clinical and classroom setting	• The use of humor, peer instructors and mentors, and mindfulness training are three strategies described in the literature as successful interventions for decreasing student anxiety in clinical practice • Humor can be injected in several ways into clinical practice, but must be done with sensitivity • Peer instructors and mentors can be implemented at all educational levels as a pre-planned program or on an as-needed basis • Mindfulness training involves yoga, meditation, and relaxation practices but to implement requires advanced planning and development (elective courses, seminars, workshops)	• Humor and mindfulness training have not been studied as effective interventions in the clinical setting • Search strategy was poorly described as the inclusion/exclusion criteria, key words, and databases used were not specified • Unclear why and how articles were chosen for this review	1.0 Level 5/C

Sprengel, A.D., & Job, L. (2004). Reducing student anxiety by using clinical peer mentoring with beginning nursing students. *Nurse Educator, 29*(6), 246-250.	Evidence Type: Organizational Purpose: To evaluate a peer mentoring strategy in decreasing junior student nurse anxiety in their initial clinical experiences.	Sample: junior & senior baccalaureate nursing students Sample size: 30 junior and 30 senior nursing students Setting: university in the United states; medical-surgical unit	• Juniors reported a decrease in anxiety during the initial clinical experience • Junior students commented that they felt more at ease in clinical and that they looked up to how much their mentor knew • Seniors described an increased confidence in own knowledge and skills and they felt like they helped juniors be less nervous • Junior students' experiences negatively impacted by mentors that were quiet or timid, lacked assertiveness or confidence, or were less knowledgeable • Seniors commented on lack of motivation or initiative by some mentees	• Evaluation lacked control • Failed to use reliable and valid measures (authors used a self-created tool that was noted tested for reliability or validity) • Anxiety-producing clinical situations evaluated before mentoring experience, but not after; instead, the authors used a different, less reliable and valid tool to evaluate the outcomes of the experience	1.0 Level 5/C

Watt, E., Murphy, M., Pascoe, E., Scanlon, A., & Gan, S. (2011). An evaluation of a structured learning programme as a component of the clinical practicum in final year bachelor of nursing programme: a pre–post-test analysis. *Journal of Clinical Nursing, 20*, 2286-2293.	Evidence Type: Non-Experimental Purpose: To examine the effects of a three day structured learning program on nursing students' anxiety and self-efficacy levels before and after their acute care clinical placements.	Sample: senior baccalaureate nursing students Sample size: 128 nursing students in three cohorts pre-test and 118 nursing students post test Setting: Acute care unit	• Significant reduction in student stress and increase in self-efficacy in all three cohorts after participation in structured learning program • students baseline anxiety and self-efficacy levels did not depend on whether this was their first, second or third placement • significant inverse relationship between baseline anxiety and self-efficacy (students reporting higher levels of anxiety had lower levels of self-efficacy and vice versa)	• several threats to the internal and external validity of the study such as maturation, testing, response bias, and the Hawthorne effect • randomized sample not used • variables measured at only one point in time • limited description of sample characteristics minimal recommendations for practice made	1.5 Level 3/B